

50		55		60
Ile His Ser Ser Phe Lys His Leu Leu Thr Asn Thr Leu Pro Leu Phe				
65		70		75
Phe Leu Ser Trp Cys Leu Phe Tyr Phe Tyr Arg Ser Ile Ala Pro Ser				80
	85		90	
Ile Phe Leu Ile Ile Trp Ile Gly Cys Gly Ala Ile Thr Phe Leu Ile				95
	100		105	
Gly Lys Pro Ala Trp His Ile Gly Ala Ser Gly Ile Ile Tyr Gly Leu				110
	115		120	
Ala Phe Phe Leu Phe Phe Ser Gly Leu Leu Arg Lys Tyr Ile Pro Leu				125
	130		135	
Ile Ala Ile Ser Leu Leu Val Thr Phe Leu Tyr Gly Gly Leu Ile Trp				130
	145		150	
Asn Met Leu Pro Tyr Phe Thr Pro Ser Gly Ile Ser Trp Glu Gly His				140
	155		160	
Leu Ser Gly Ala Ile Ile Gly Thr Ile Cys Ala Phe Ser Phe Met Gly				150
	165		170	
Tyr Gly Pro Gln Lys Pro Asp Pro Phe Ala Asn Glu Gln Glu Glu Glu				160
	175		180	
Ser Val Ser Ala Thr Asp Glu Thr Asp Asn Ile Glu Met Asp Lys Glu				170
	185		190	
Glu Glu His Glu Ile Asp Ala Glu				180
	195		200	
	205		210	
	215		220	
	225		230	

<210> 8502

<211> 263

<212> PRT

<213> B.fragilis

<400> 8502

Arg Gly Glu Lys Gly Lys Arg Arg Glu Arg Arg Lys Lys Glu Lys Lys				
1	5	10	15	
Arg Arg Arg Lys Glu Glu Glu Lys Lys Gly Lys Lys Glu Lys Lys Arg				
	20	25	30	
Glu Arg Lys Glu Lys Arg Glu Arg Lys Lys Lys Arg Lys Gly Gly Glu				
	35	40	45	
Lys Glu Lys Glu Glu Gly Glu Glu Arg Gly Lys Gly Glu Arg Arg				
	50	55	60	
Arg Arg Lys Gly Lys Arg Lys Arg Glu Glu Gly Lys Gly Arg Glu Gly				
	65	70	75	
Lys Arg Lys Glu Glu Gly Lys Lys Gly Arg Lys Glu Lys Arg Arg Lys				
	85	90	95	
Lys Lys Glu Arg Glu Arg Gly Lys Lys Glu Lys Gly Gly Lys Lys Glu				
	100	105	110	
Lys Lys Arg Lys Lys Lys Arg Lys Glu Glu Lys Gly Arg Lys Glu Lys				
	115	120	125	
Lys Glu Lys Arg Glu Glu Gly Lys Lys Gly Glu Lys Gly Arg Glu Arg				
	130	135	140	
Glu Arg Glu Glu Gly Arg Glu Lys Gly Arg Arg Arg Arg Asp Lys Glu				
	145	150	155	
Lys Lys Glu Arg Lys Gly Arg Lys Glu Gly Lys Arg Lys Gly Arg Arg				
	165	170	175	
Arg Lys Gly Gly Glu Lys Glu Arg Lys Glu Arg Lys Gly Arg Glu Lys				
	180	185	190	
Glu Arg Gly Lys Lys Lys Glu Lys Lys Gly Glu Arg Gly Gly Lys Lys				
	195	200	205	
Arg Gly Arg Lys Arg Gly Gly Arg Gly Lys Arg Lys Arg Gly Lys Arg				
	210	215	220	
Arg Lys Arg Glu Arg Glu Gly Gly Gly Glu Gly Arg Arg Gly Arg				

225 230 235 240
 Gly Gly Lys Lys Arg Gly Gly Lys Lys Lys Lys Lys Lys Arg Lys Lys
 245 250 255
 Lys Lys Lys Lys Lys Lys Lys
 260

<210> 8503
 <211> 406
 <212> PRT
 <213> B.fragilis

<400> 8503
 Gln Asn Ile Glu Ile Met Asn Asn Leu Val Trp Lys Leu Leu Arg Gln
 1 5 10 15
 His Ile Ser Ile Gly Gln Leu Thr Gly Phe Phe Phe Ala Asn Leu Phe
 20 25 30
 Gly Met Val Ile Val Leu Leu Ser Ala Gln Phe Tyr Lys Asp Val Val
 35 40 45
 Pro Ile Phe Thr Glu Gly Asp Ser Phe Met Lys Lys Asp Tyr Met Thr
 50 55 60
 Ala Thr Lys Lys Ile Ser Thr Leu Gly Ser Phe Ala Gly Lys Ser Asn
 65 70 75 80
 Thr Phe Ser Ser Glu Glu Ile Glu Glu Leu Lys Lys Gln Pro Phe Thr
 85 90 95
 Arg Ser Val Gly Ala Phe Thr Pro Ser Gln Phe Lys Val Ser Ala Gly
 100 105 110
 Leu Gly Met Gln Glu Ala Gly Ile His Leu Ser Thr Glu Met Phe Phe
 115 120 125
 Glu Ala Val Pro Asp Lys Phe Val Asp Val Ser Leu Asp Lys Trp His
 130 135 140
 Phe Asp Glu Asn Thr His Thr Ile Pro Ile Ile Ile Pro Arg Asn Tyr
 145 150 155 160
 Leu Asn Leu Tyr Asn Phe Gly Phe Ala Gln Ser Arg Ser Leu Pro Lys
 165 170 175
 Leu Ser Glu Gly Leu Met Ser Leu Ile Gln Met Asp Ile Leu Met Arg
 180 185 190
 Gly Asn Gly Arg Val Glu Gln Tyr Lys Gly Asn Ile Val Gly Phe Ser
 195 200 205
 Asn Arg Leu Asn Thr Ile Leu Val Pro Gln Ser Phe Met Asn Trp Ala
 210 215 220
 Asn Gln Asn Phe Ala Pro Asp Ser Gln Pro Asp Pro Ser Arg Leu Ile
 225 230 235 240
 Ile Glu Val Asp Asn Pro Ala Asp Ala Ser Ile Ala Lys Tyr Phe Gln
 245 250 255
 Gln Lys Gly Tyr Glu Thr Glu Asp Gly Lys Leu Asp Ala Gly Lys Thr
 260 265 270
 Thr Tyr Phe Leu Arg Leu Ile Val Gly Ile Val Leu Ala Val Gly Leu
 275 280 285
 Phe Ile Ser Ile Leu Ser Phe Tyr Ile Leu Met Leu Ser Ile Phe Leu
 290 295 300
 Leu Leu Gln Lys Asn Thr Val Lys Leu Glu Ser Leu Leu Leu Ile Gly
 305 310 315 320
 Tyr Ser Pro Ser Arg Val Ala Leu Pro Tyr Gln Ile Leu Thr Leu Gly
 325 330 335
 Leu Asn Ile Val Val Leu Leu Leu Ser Val Gly Ile Val Ser Trp Ala
 340 345 350
 Arg Thr Ser Tyr Leu Thr Thr Leu Asn Leu Leu Phe Pro Gln Met Ser
 355 360 365
 Val Gly Ser Leu Trp Pro Thr Phe Ala Ile Gly Ile Phe Leu Phe Leu

370		375		380
Leu Val Ser Ser Ile Asn Val Ile Ile Leu Lys Lys Lys Met Leu Ser				
385		390		395
Ile Trp Ile His Lys Ala				400
	405			

<210> 8504
 <211> 389
 <212> PRT
 <213> B.fragilis

<400> 8504

Thr Ile Thr Glu Met Lys Gln Thr Lys Thr Ile Leu Ala Val Ile Leu				
1	5	10	15	
Leu Val Val Leu Val Gly Cys Gly Glu Asn Ile Gln Ser Asn Asn Asp				
	20	25	30	
Leu Ile Ile Val Asp Val Ser Lys Ser Tyr Pro Lys Lys Glu Leu Ile				
	35	40	45	
Leu Gln Asp Phe Met Asp Val Glu Tyr Val Ala Leu Glu Thr Thr Asp				
	50	55	60	
Glu Phe Leu Thr Gln Gly Leu Val Gln Asp Val Gly Lys Glu Tyr Ile				
65	70	75	80	
Leu Ala Thr Asn Arg Asn Asn Asp Gly Asp Ile Phe Ile Phe Asp Arg				
	85	90	95	
Lys Thr Gly Lys Gly Val Arg Lys Ile Asn Arg Arg Gly Gln Gly Ala				
	100	105	110	
Glu Glu Tyr Ala Arg Ile Asn Glu Ile Ile Leu Asp Glu Asn Asn Gly				
	115	120	125	
Glu Ile Phe Val Lys Ser Pro Gly Asn Lys Ile Leu Val Tyr Asp Leu				
	130	135	140	
Tyr Gly Lys Phe Lys Arg Cys Leu Ser Leu Asp Arg Glu Val Ser Ser				
145	150	155	160	
Ile Phe Asp Tyr Asp Lys Asp Asn Leu Ile Cys Tyr Asp Met Ser Asp				
	165	170	175	
Tyr His Ser Lys Gly Glu Asp Arg Thr Lys Ser Tyr His Ile Ile Leu				
	180	185	190	
Ser Lys Gln Asp Gly Ser Ile Thr Arg Asp Ile Phe Ile Pro Phe Lys				
	195	200	205	
Thr Ile Asp Thr Pro Ile Val Asn Asp Gly Asp Arg Phe Ile Ala Asn				
	210	215	220	
Tyr Ser Tyr Gln Ile Arg Leu Ser Asn Gly Lys Cys Thr Leu Met Asp				
225	230	235	240	
Thr Ser Ala Asp Thr Leu Tyr Asn Tyr Ala Ser Asp Gly Thr Leu Ser				
	245	250	255	
Pro Phe Val Val Arg Thr Pro Ser Ala His Thr Met Glu Pro Glu Val				
	260	265	270	
Phe Leu Tyr Met Gly Ile His Thr Asp Arg Tyr Tyr Phe Met Glu Ala				
	275	280	285	
Val Lys Asn Val Phe Asn Phe Glu Lys Gly Asn Gly Phe Tyr Ala Asp				
	290	295	300	
Glu Leu Val Tyr Asp Lys Glu Glu Lys Ala Val Phe Gln Val Thr Ile				
305	310	315	320	
Tyr Asn Asp Asp Tyr Val Asp Lys Arg Thr Val Ala Met Thr Ala Lys				
	325	330	335	
Pro Ile Asn Arg Glu Ile Glu Asp Val Thr Ser Leu Asn Ala Ala Arg				
	340	345	350	
Leu Val Glu Ile Tyr Lys Lys Asp Gln Leu Lys Asp Gly Lys Leu Lys				
	355	360	365	
Glu Ile Ala Ser Arg Leu Asn Glu Glu Asp Asn Pro Val Ile Met Leu				

370
Val Lys Gln Lys Lys
385

375

380

<210> 8505
<211> 176
<212> PRT
<213> B.fragilis

<400> 8505
Lys Lys Asn Glu Cys Met Lys Lys Tyr Leu Phe Asn Leu Leu Leu Phe
1 5 10 15
Thr Val Leu Val Ile Gly Leu Ser Gly Cys Arg Thr Ser Ala Pro Lys
20 25 30
Leu Asp Tyr Lys Lys Leu Ala Arg Ala Ser Val Arg Leu Gly Val Asp
35 40 45
Ile Gly Met Glu Asp Asn His Lys Leu Tyr Leu Glu Ala Ala Glu Trp
50 55 60
Ile Gly Thr Pro Tyr Arg Gly Gly Gly Glu Thr Lys Arg Gly Thr Asp
65 70 75 80
Cys Ser Gly Met Thr Cys Gln Ile Tyr Lys Lys Val Tyr His Ile Lys
85 90 95
Leu Gln Arg Ser Thr Asp Gly Gln Lys Lys Glu Ser Ser Lys Val Ala
100 105 110
Arg Arg Asn Leu Arg Glu Gly Asp Leu Val Phe Phe Ser Ser Arg Lys
115 120 125
Ser Arg Arg Lys Val Ala His Val Gly Ile Tyr Leu Lys Asp Gly Lys
130 135 140
Phe Val His Ala Ser Thr Ser Gln Gly Val Ile Val Ser Ser Leu Asn
145 150 155 160
Glu Pro Tyr Tyr Arg Thr His Trp Ile Ser Gly Gly Arg Val Arg Lys
165 170 175

<210> 8506
<211> 466
<212> PRT
<213> B.fragilis

<400> 8506
Asn Asn Ile Asp Met Arg Thr Ile Cys Leu Tyr Phe Glu Ile His Gln
1 5 10 15
Ile Ile His Leu Lys Arg Tyr Arg Phe Phe Asp Ile Gly Ala Asp His
20 25 30
Tyr Tyr Tyr Asp Asp Tyr Ala Asn Glu Thr Gly Ile Asn Glu Val Ala
35 40 45
Glu Arg Ser Tyr Ile Pro Ala Leu Asn Thr Leu Ile Glu Met Val Lys
50 55 60
Asn Ser Gly Gly Ala Phe Lys Val Ala Leu Ser Ile Ser Gly Val Ala
65 70 75 80
Leu Glu Gln Leu Glu Ile His Ala Pro Ala Val Ile Asp Leu Leu His
85 90 95
Ile Leu Asn Asp Thr Gly Cys Cys Glu Phe Leu Ala Glu Pro Tyr Ser
100 105 110
His Gly Leu Ser Ser Leu Ala Asn Glu Asp Cys Phe Arg Glu Glu Val
115 120 125
Met Arg Gln Ser Glu Lys Met Lys Gln Met Phe Gly Lys Ala Pro Lys
130 135 140
Val Phe Arg Asn Ser Ser Leu Ile Tyr Ser Asp Glu Ile Gly Ala Thr
145 150 155 160

Val Ala Ser Met Gly Phe Lys Gly Met Leu Thr Glu Gly Ala Lys His
 165 170 175
 Val Leu Gly Trp Lys Ser Pro His Tyr Val Tyr His Cys Asn Gln Ala
 180 185 190
 Pro Ser Leu Lys Leu Leu Leu Arg Asp Phe Lys Leu Ser Asp Asp Ile
 195 200 205
 Ser Leu Arg Phe Ser Asn Ser Asp Trp Ser Glu Tyr Pro Leu Phe Ala
 210 215 220
 Asp Lys Phe Ile Gly Trp Ile Asp Ala Leu Pro Gln Glu Glu Gln Val
 225 230 235 240
 Ile Asn Ile Phe Met Glu Leu Lys Ala Leu Gly Met Ala Gln Pro Leu
 245 250 255
 Ser Ser Asn Ile Leu Glu Phe Leu Lys Ala Leu Pro Tyr Cys Ala Lys
 260 265 270
 Glu Lys Gly Ile Thr Phe Ser Thr Pro Ser Glu Ile Ile Ser Lys Leu
 275 280 285
 Lys Ser Val Ser Gln Leu Asp Val Pro Tyr Pro Met Ser Trp Val Asp
 290 295 300
 Glu Glu Arg Asp Thr Ser Ser Trp Leu Gly Asn Val Leu Gln Arg Glu
 305 310 315 320
 Ala Phe Ser Lys Leu Tyr Ser Val Ala Glu Arg Val His Leu Cys Asp
 325 330 335
 Asp Arg Arg Ile Lys Gln Asp Trp Asp Tyr Leu Gln Ala Ser Asn Asn
 340 345 350
 Phe Arg Phe Met Thr Thr Lys Asn Thr Gly Val Trp Leu Asn Arg Gly
 355 360 365
 Ile Tyr Asp Ser Pro Tyr Asp Ala Phe Thr Asn Tyr Met Asn Ile Leu
 370 375 380
 Gly Asp Phe Ile Lys Arg Val Asn Ser Leu Tyr Pro Glu Asp Ile Asp
 385 390 395 400
 Asn Glu Glu Leu Asn Ser Leu Leu Thr Thr Ile Lys Asn Gln Gly Glu
 405 410 415
 Glu Ile Ala Glu Leu His Lys Glu Val Asp Lys Leu Gln Ala Lys Ala
 420 425 430
 Glu Lys Ala Ala Lys Thr Val Lys Ala Glu Pro Lys Ala Ala Pro Lys
 435 440 445
 Lys Ala Ala Ala Lys Lys Pro Ala Ala Lys Lys Ala Thr Ala Lys Lys
 450 455 460
 Glu Asp
 465

<210> 8507

<211> 61

<212> PRT

<213> B.fragilis

<400> 8507

Gly Leu Thr Asp Ala Cys Lys Asn Ala Phe Ala Val Pro Leu Thr Lys
 1 5 10 15
 Glu Ala Thr Arg Lys Arg Gly Lys Leu Ser Trp Leu Ala Asp Gly Met
 20 25 30
 Tyr Lys Pro Lys Ala Thr Ala Asn Met Ala Asn Glu Ser Ala Met Val
 35 40 45
 Cys Leu Tyr Pro Ile Ala Leu Ile Val Ile Glu Ala Gly
 50 55 60

<210> 8508

<211> 121

<212> PRT

<213> B.fragilis

<400> 8508

```

Val Ile Lys Asp His Pro Thr Glu Leu Thr Tyr Ile Tyr Leu Tyr Lys
1           5           10           15
Met Tyr Ala Ile Val Glu Ile Asn Gly Gln Gln Phe Lys Ala Glu Ala
          20           25           30
Gly Gln Lys Leu Phe Val His His Ile Gln Asn Ala Glu Asn Gly Ala
          35           40           45
Thr Val Glu Phe Asp Lys Val Leu Leu Val Asp Lys Asp Gly Asn Val
          50           55           60
Thr Val Gly Ala Pro Thr Val Asp Gly Ala Lys Val Val Cys Gln Ile
65           70           75           80
Val Ser Ser Leu Val Lys Gly Asp Lys Val Leu Val Phe His Lys Lys
          85           90           95
Arg Arg Lys Gly His Arg Lys Leu Asn Gly His Arg Gln Gln Phe Thr
          100          105          110
Glu Leu Thr Ile Thr Glu Val Val Ala
          115          120

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<210> 8509

<211> 158

<212> PRT

<213> B.fragilis

<400> 8509

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Lys Gly Arg Glu Gly Lys Lys Lys Arg Lys Glu Lys Glu Arg Lys Glu
1           5           10           15
Lys Glu Glu Glu Arg Arg Arg Glu Lys Gly Lys Glu Arg Lys Lys Glu
          20           25           30
Arg Glu Glu Arg Lys Lys Arg Glu Lys Glu Lys Glu Lys Arg Gly Arg
          35           40           45
Lys Arg Lys Arg Arg Gly Gly Arg Gly Lys Gly Lys Gly Gly Lys Lys
          50           55           60
Lys Glu Glu Arg Lys Glu Glu Lys Arg Arg Arg Lys Arg Lys Gly Arg
65           70           75           80
Glu Lys Lys Arg Arg Gly Lys Lys Gly Lys Glu Arg Glu Lys Glu Lys
          85           90           95
Lys Lys Gly Lys Gly Glu Arg Lys Lys Arg Lys Arg Gly Lys Lys Gly
          100          105          110
Lys Lys Lys Lys Glu Glu Glu Lys Gly Arg Lys Gly Lys Lys Gly Lys
          115          120          125
Lys Gly Glu Glu Gly Arg Arg Lys Lys Gly Arg Glu Gly Glu Gly Glu
          130          135          140
Gly Lys Arg Gly Gly Lys Arg Lys Arg Lys Lys Glu Glu Gly
145          150          155

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<210> 8510

<211> 599

<212> PRT

<213> B.fragilis

<400> 8510

```

Leu Leu Met Glu Asn Leu Lys Asn Val Ala Pro Ile Glu Asp Phe Asn
1           5           10           15
Trp Asp Ala Tyr Glu Asn Gly Glu Ser Phe Ala Gly Ala Ser His Glu
          20           25           30
Glu Leu Glu Lys Ala Tyr Asp Gly Thr Leu Asn Lys Val Asn Asp Arg
          35           40           45

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Glu Val Val Asp Gly Thr Val Ile Ala Met Asn Lys Arg Glu Val Val
 50 55 60
 Val Asn Ile Gly Tyr Lys Ser Asp Gly Ile Ile Pro Leu Asn Glu Phe
 65 70 75 80
 Arg Tyr Asn Pro Asp Leu Lys Val Gly Asp Thr Val Glu Val Tyr Ile
 85 90 95
 Glu Asn Gln Glu Asp Lys Lys Gly Gln Leu Val Leu Ser His Arg Lys
 100 105 110
 Ala Arg Ala Thr Arg Ser Trp Asp Arg Val Asn Ala Ala Leu Glu Asn
 115 120 125
 Glu Glu Ile Ile Lys Gly Tyr Ile Lys Cys Arg Thr Lys Gly Gly Met
 130 135 140
 Ile Val Asp Val Phe Gly Ile Glu Ala Phe Leu Pro Gly Ser Gln Ile
 145 150 155 160
 Asp Val Lys Pro Ile Arg Asp Tyr Asp Val Phe Val Gly Lys Thr Met
 165 170 175
 Glu Phe Lys Val Val Lys Ile Asn Gln Glu Phe Lys Asn Val Val Val
 180 185 190
 Ser His Lys Ala Leu Ile Glu Ala Glu Leu Glu Gln Gln Lys Lys Glu
 195 200 205
 Ile Ile Gly Lys Leu Glu Lys Gly Gln Val Leu Glu Gly Thr Val Lys
 210 215 220
 Asn Ile Thr Ser Tyr Gly Val Phe Ile Asp Leu Gly Gly Val Asp Gly
 225 230 235 240
 Leu Ile His Ile Thr Asp Leu Ser Trp Gly Arg Val Ser Asp Pro Lys
 245 250 255
 Glu Val Val Glu Leu Asp Gln Lys Leu Asn Val Val Ile Leu Asp Phe
 260 265 270
 Asp Asp Glu Lys Lys Arg Ile Ala Leu Gly Leu Lys Gln Leu Thr Pro
 275 280 285
 His Pro Trp Asp Ala Leu Asp Pro Asn Leu Gln Val Gly Asp Lys Val
 290 295 300
 Lys Gly Lys Val Val Val Met Ala Asp Tyr Gly Ala Phe Ile Glu Ile
 305 310 315 320
 Ala Pro Gly Val Glu Gly Leu Ile His Val Ser Glu Met Ser Trp Ser
 325 330 335
 Gln His Leu Arg Ser Ala Gln Asp Phe Met Lys Val Gly Asp Glu Val
 340 345 350
 Glu Ala Val Val Leu Thr Leu Asp Arg Glu Glu Arg Lys Met Ser Leu
 355 360 365
 Gly Ile Lys Gln Leu Lys Gln Asp Pro Trp Glu Thr Ile Glu Glu Lys
 370 375 380
 Tyr Pro Val Gly Ser Lys His Thr Ala Lys Val Arg Asn Phe Thr Asn
 385 390 395 400
 Phe Gly Val Phe Val Glu Ile Glu Glu Gly Val Asp Gly Leu Ile His
 405 410 415
 Ile Ser Asp Leu Ser Trp Thr Lys Lys Val Lys His Pro Ser Glu Phe
 420 425 430
 Thr Gln Ile Gly Ala Asp Ile Glu Val Gln Val Leu Glu Ile Asp Lys
 435 440 445
 Glu Asn Arg Arg Leu Ser Leu Gly His Lys Gln Leu Glu Glu Asn Pro
 450 455 460
 Trp Asp Val Phe Glu Thr Val Phe Thr Val Gly Ser Val His Glu Gly
 465 470 475 480
 Thr Ile Ile Glu Met Leu Asp Lys Gly Ala Val Val Ala Leu Pro Tyr
 485 490 495
 Gly Val Glu Gly Phe Ala Thr Pro Lys His Leu Val Lys Glu Asp Gly
 500 505 510
 Ser Gln Ala Gln Met Asp Glu Lys Leu Glu Phe Lys Val Ile Glu Phe

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      515                      520                      525
Asn Lys Asp Ala Lys Arg Ile Ile Leu Ser His Ser Arg Ile Phe Glu
  530                      535                      540
Asp Val Ala Lys Ala Glu Glu Arg Ala Glu Lys Lys Ala Ala Ser Asn
  545                      550                      555                      560
Ala Lys Lys Ser Ser Lys Arg Glu Glu Thr Pro Ala Ile Gln Asn Gln
      565                      570                      575
Ala Ala Ser Thr Thr Leu Gly Asp Ile Asp Ala Leu Ala Ala Leu Lys
      580                      585                      590
Glu Gln Leu Glu Gly Lys Lys
      595

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<210> 8511

<211> 646

<212> PRT

<213> B.fragilis

<400> 8511

```

Ser Tyr Leu Cys Phe Arg Ser Lys Glu Thr Asn Ile Gln Met Lys Gln
  1      5      10
Thr Pro Phe Arg Cys Leu Cys Leu Leu Ile Leu Leu Gly Ala Val
  20      25      30
His Ser Arg Leu Ser Ala His Ala Asp Lys Thr Arg Glu Asp Val Leu
  35      40      45
Phe Leu Asn Ser Ile Asn Phe Asn Leu Pro Trp Ala Lys Asp Val Phe
  50      55      60
Trp Tyr Thr His Gln Ala Leu Gln Lys Lys Asn Ile Ser Val Lys Ala
  65      70      75      80
Glu Ser Leu Ser Val Pro Ala Leu Cys Asn Arg Lys Glu Ala Ala Ala
      85      90      95
Val Val Glu Gln Leu Arg Arg Lys Tyr Asp Val Pro Pro Arg Leu Ile
      100      105      110
Val Phe Ile Gly Asp Pro Gly Trp Ile Val Cys Arg Glu Leu Phe Asp
      115      120      125
Asp Val Trp Lys Asp Val Pro Val Ile Ile Thr Asn Ala Arg Asp Arg
      130      135      140
Leu Pro Ala Thr Leu Asp Ile Leu Leu Ser His Glu Glu Leu Thr Glu
      145      150      155      160
Ser Asn Thr Val Pro Ala Tyr Glu Trp Arg Lys Gly Tyr Asn Val Thr
      165      170      175
Thr Leu Gly Gln Val Tyr Tyr Val Lys Glu Thr Ile Gly Leu Met Arg
      180      185      190
Gln Leu Met Pro Asp Met Lys Arg Leu Ala Phe Ile Ser Asp Asp Arg
      195      200      205
Tyr Ile Ser Glu Ala Val Arg Gly Asp Val Glu Gln Ala Met Thr Gly
      210      215      220
Ser Phe Pro Glu Leu Ala Phe Glu Gln Leu Ser Thr Arg Asn Ile Ser
      225      230      235      240
Thr Glu Met Leu Leu Asp Thr Leu Lys Ser Tyr Asp Lys Thr Thr Gly
      245      250      255
Leu Ile Tyr Tyr Ser Trp Phe Glu Thr His Asn Gln Asp Asp Asn Asn
      260      265      270
Tyr Leu Phe Asp His Ile Gln Glu Ile Ile Thr Arg Phe Val His Ser
      275      280      285
Pro Leu Phe Leu Leu Ala Pro Glu Asp Leu Ser Asn Asn Thr Phe Ala
      290      295      300
Gly Gly Tyr Tyr Val Ser Val Glu Ser Phe Gly Asp Ser Leu Leu Gln
      305      310      315      320
Leu Ile His Arg Val Leu Glu Gly Glu Phe Pro Arg Asp Ile Pro Pro

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          325          330          335
Ala Leu Gly Gly Lys Pro Ala Ala Tyr Leu Cys Tyr Pro Ala Leu Gln
          340          345          350
Ser Tyr Asp Ile Pro Val Ser Leu Tyr Pro Lys Glu Ala Val Tyr Ile
          355          360          365
Asn Leu Pro Val Ser Phe Phe Glu Gln Tyr Lys Lys Glu Ile Leu Met
          370          375          380
Thr Val Val Leu Leu Leu Val Val Val Ser Ala Val Gly Tyr Tyr Ile
          385          390          395          400
His Ile Leu Lys Arg Ala His Gln Arg Met Lys Glu Ala Gln Leu Lys
          405          410          415
Ala Glu Glu Ala Asn Gln Leu Lys Ser Ala Phe Leu Ala Asn Met Ser
          420          425          430
His Glu Ile Arg Thr Pro Leu Asn Ala Ile Val Gly Phe Ser Asn Leu
          435          440          445
Leu Ser Met Val Glu Asp Lys Glu Glu Met Leu Glu Tyr Ala Gly Ile
          450          455          460
Ile Glu Thr Asn Thr Glu Leu Leu Leu Gln Leu Ile Asn Asp Ile Leu
          465          470          475          480
Asp Met Ser Lys Ile Glu Ser Gly Met Tyr Asp Phe His Val Thr Gln
          485          490          495
Val Asp Ala Asn Gln Leu Met Ser Glu Val Glu Gln Val Ala Arg Leu
          500          505          510
Arg Ile Arg Thr Asp Glu Val Ser Leu Ser Phe Ala Glu Arg Leu Pro
          515          520          525
Gln Cys Val Phe His Thr Asp Lys Asn Arg Leu Ile Gln Val Leu Thr
          530          535          540
Asn Leu Val Val Asn Ala Ile Lys Phe Thr Ser Gln Gly Glu Ile Gln
          545          550          555          560
Ile Gly Tyr Arg Leu Gln Asp Ala His Thr Leu Tyr Phe Tyr Val Ser
          565          570          575
Asp Thr Gly Cys Gly Met Ser Val Glu Gln Cys Glu His Val Phe Glu
          580          585          590
Arg Phe Val Lys Tyr Asn Thr Phe Ile Gln Gly Thr Gly Leu Gly Leu
          595          600          605
Ser Ile Cys Lys Met Ile Ile Glu Lys Leu Gly Gly Glu Ile Gly Val
          610          615          620
Gln Ser Glu Ser Gly Lys Gly Ser Val Phe Trp Phe Thr Leu Pro Tyr
          625          630          635          640
Arg Ala Ser Ala Ser Leu
          645

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<210> 8512

<211> 218

<212> PRT

<213> B.fragilis

<400> 8512

```

Ser Ser Thr Cys Met Asp Ser Ile His Leu Gln Gln Thr Leu Pro Gln
1          5          10          15
Val Phe Ala Asp Arg Asn Ser Ile Thr Ser Asp Val Trp His Arg Asn
          20          25          30
Leu Val Phe His Lys Gly Lys Ser Tyr Leu Ile Glu Ala Ala Ser Gly
          35          40          45
Thr Gly Lys Ser Ser Leu Cys Ser Tyr Ile Tyr Gly Tyr Arg Asn Asp
          50          55          60
Tyr Gln Gly Ile Ile Asn Phe Asp Glu Thr Asn Ile Lys Ala Tyr Pro
65          70          75          80
Val Lys Gln Trp Val Glu Ile Arg Lys His Ser Leu Ser Met Leu Phe

```


275	280	285
Ser Asp Ser Tyr Asn Leu Gln Cys Glu Thr Thr Ser Phe His Thr Asp		
290	295	300
Ser Ala Tyr Phe Glu Thr Leu Arg Pro Ile Pro Leu Ser Glu Ala Glu		
305	310	315
Arg Arg Leu Tyr Lys Glu Asp Ala Leu Arg Lys Asp Thr Ile Gln Arg		
325	330	335
Asn Ile Lys Pro Lys Ser Lys Ser Gln Val Phe Trp Gly Gln Val Gly		
340	345	350
Asp Val Leu Ile Ser Asp Tyr Lys Leu Asn Leu Ser Asn Leu Gly Ser		
355	360	365
Val Lys Cys Ser Pro Leu Ile Asn Pro Phe Leu Leu Ser Tyr Ser Gly		
370	375	380
Ser Asn Gly Leu Ser Tyr Arg Gln Ser Phe Lys Tyr Asn Arg Leu Phe		
385	390	395
Lys His Asp Arg Leu Leu Arg Val Val Pro Lys Leu Gly Tyr Asn Phe		
405	410	415
Thr Arg Lys Glu Phe Tyr Trp Ser Val Asn Thr Glu Phe Asn Tyr Leu		
420	425	430
Pro Glu Lys Met Gly Ala Val His Ile Asp Phe Gly Asn Gly Asn Arg		
435	440	445
Ile Tyr Ser Ser Asp Val Leu Asp Asp Leu Lys Ala Ile Pro Asp Ser		
450	455	460
Val Phe Asp Phe Asn Gln Ile His Leu Asp Tyr Phe Tyr Asp Leu Tyr		
465	470	475
Phe Asn Phe Arg His Ser Ile Glu Ile Ile Asn Gly Leu Glu Leu Ser		
485	490	495
Val Gly Leu Ser Thr His Arg Arg Lys Ala Val Lys Ser Ser Lys Leu		
500	505	510
Val Pro Leu Thr Lys Ser Arg Glu Thr Leu Asn Glu Asp Ile Gln Asn		
515	520	525
Lys Ile Arg Asn Thr Tyr Leu Ser Phe Ala Pro Arg Val Arg Leu Glu		
530	535	540
Trp Thr Pro Cys Leu Tyr Tyr Tyr Met Asn Gly His Arg Lys Ile Asn		
545	550	555
Leu Arg Ser Lys Tyr Pro Thr Phe Ser Ile Asp Trp Glu Arg Gly Ile		
565	570	575
Lys Gly Val Phe Gly Ser Thr Gly Gln Tyr Glu Arg Leu Glu Phe Asp		
580	585	590
Leu Gln His His Ile Pro Leu Gly Leu Met Arg Asn Ile Tyr Tyr Arg		
595	600	605
Phe Gly Phe Gly Met Phe Thr Asn Gln Lys Glu Met Tyr Phe Val Asp		
610	615	620
Phe Asn Asn Phe Thr Arg Ser Asn Leu Pro Glu Gly Trp Asn Asp Glu		
625	630	635
Ile Gly Gly Val Phe Gln Leu Leu Asp Arg Arg Trp Tyr Asn Ala Ser		
645	650	655
Arg Lys Tyr Ile Arg Gly His Phe Thr Tyr Glu Ala Pro Phe Leu Leu		
660	665	670
Leu Lys His Leu Ile Lys Tyr Thr Arg Tyr Val Gln Asn Glu Arg Leu		
675	680	685
Tyr Ala Ser Ile Leu Ser Val Pro His Leu Gln Pro Tyr Val Glu Leu		
690	695	700
Gly Tyr Gly Ile Gly Thr His Ile Phe Asp Phe Gly Val Phe Val Gly		
705	710	715
Ser Glu Asn Trp Lys Tyr Thr Glu Val Gly Cys Lys Phe Thr Phe Glu		
725	730	735
Leu Phe Asn Arg		
740		

<210> 8514
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 8514

```

Asn Ile Asn Arg Ser Met Glu Thr Glu Arg Ile Lys Cys Leu Ile Ile
1      5      10      15
Gly Ser Gly Pro Ala Gly Tyr Thr Ala Ala Ile Tyr Ala Gly Arg Ala
20      25      30
Asn Leu Ser Pro Val Leu Tyr Glu Gly Ile Gln Pro Gly Gly Gln Leu
35      40      45
Thr Thr Thr Thr Asp Val Glu Asn Phe Pro Gly Tyr Pro Gln Gly Ile
50      55      60
Ser Gly Pro Gln Leu Met Glu Asp Leu Arg Thr Gln Ala Glu Arg Phe
65      70      75      80
Gly Ala Asp Ile Arg Phe Gly Ile Ala Thr Ala Ser Asp Leu Gly Gln
85      90      95
Ala Pro Tyr Lys Ile Thr Ile Asp Gly Glu Lys Val Ile Glu Ala Asp
100     105     110
Ser Leu Ile Ile Ala Thr Gly Ala Thr Ala Lys Tyr Leu Gly Leu Asp
115     120     125
Asp Glu Lys Lys Tyr Ala Gly Met Gly Val Ser Ala Cys Ala Thr Cys
130     135     140
Asp Gly Phe Phe Tyr Arg Lys Lys Val Val Ala Val Val Gly Gly Gly
145     150     155     160
Asp Thr Ala Cys Glu Glu Ala Ile Tyr Leu Ala Gly Leu Ala Ser Lys
165     170     175
Val Tyr Leu Val Val Arg Lys Pro Tyr Leu Arg Ala Ser Lys Ile Met
180     185     190
Gln Glu Arg Val Arg Lys His Asp Lys Ile Glu Val Leu Phe Glu His
195     200     205
Asn Val Val Gly Leu Phe Gly Glu Asn Gly Val Glu Gly Met Asn Leu
210     215     220
Val Lys Arg Trp Glu Glu Pro Asp Glu Glu Arg Tyr Ser Leu Pro Ile
225     230     235     240
Asp Gly Phe Phe Leu Ala Ile Gly His Lys Pro Asn Ser Asp Ile Phe
245     250     255
Lys Pro Tyr Leu Asp Thr Asp Glu Val Gly Tyr Ile Thr Thr Asp Gly
260     265     270
Asp Ser Pro Arg Thr Lys Val Pro Gly Val Phe Ala Ala Gly Asp Val
275     280     285
Ala Asp Pro His Tyr Arg Gln Ala Ile Thr Ala Ala Gly Ser Gly Cys
290     295     300
Lys Ala Ala Ile Glu Ala Glu Arg Tyr Leu Ser Glu Lys Gly Leu Ile
305     310     315     320

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<210> 8515
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 8515

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Cys Lys Ser Ser Lys Lys Lys Asn Phe Ile Gly Leu Pro Thr Thr Phe
1      5      10      15
Ser Tyr Leu Cys Val Ser Ile Gln Ala Asp Met Lys Lys Glu Ser Gln
20      25      30
Val Ile Phe Asp Lys Asn Val Ile Glu Phe Val Thr Val Ala Ala Glu

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<210> 8516
<211> 302
<212> PRT
<213> B.fragilis
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Gly	Glu	Arg	Arg	Glu	Lys	Glu	Glu	Lys	Gly	Glu	Arg	Lys	Lys	Arg	Lys
1				5					10					15	
Gly	Gly	Gly	Lys	Lys	Lys	Arg	Lys	Arg	Glu	Arg	Lys	Lys	Lys	Arg	Glu
			20					25					30		
Arg	Gly	Lys	Lys	Lys	Glu	Arg	Glu	Arg	Lys	Arg	Glu	Lys	Gly	Glu	Lys
			35				40					45			
Lys	Lys	Lys	Lys	Arg	Gly	Lys	Arg	Lys	Gly	Glu	Arg	Gly	Lys	Glu	Glu
			50			55				60					
Gly	Gly	Lys	Glu	Arg	Gly	Lys	Glu	Lys	Lys	Glu	Lys	Glu	Gly	Lys	Gly
65				70					75				80		
Lys	Glu	Lys	Lys	Arg	Glu	Lys	Arg	Glu	Gly	Lys	Arg	Lys	Gly	Glu	Lys
				85				90					95		
Lys	Arg	Lys	Gly	Arg	Glu	Glu	Lys	Lys	Lys	Lys	Gly	Glu	Lys	Arg	Lys
			100				105					110			
Lys	Lys	Glu	Arg	Arg	Arg	Glu	Arg	Lys	Lys	Arg	Glu	Glu	Arg	Lys	Lys
			115				120					125			
Arg	Arg	Arg	Gly	Lys	Lys	Glu	Lys	Arg	Glu	Arg	Arg	Gly	Gly	Arg	Gly
			130			135					140				
Lys	Glu	Arg	Arg	Glu	Glu	Lys	Lys	Glu	Glu	Gly	Gly	Gly	Ile	Arg	Arg
145				150						155				160	
Lys	Arg	Arg	Gly	Lys	Glu	Gly	Arg	Lys	Gly	Lys	Glu	Arg	Glu	Glu	Gly
				165				170					175		
Glu	Lys	Glu	Gly	Lys	Arg	Lys	Glu	Arg	Lys	Glu	Lys	Glu	Glu	Lys	Arg
			180				185					190			
Lys	Gly	Glu	Lys	Lys	Arg	Arg	Arg	Lys	Gly	Lys	Gly	Glu	Glu	Lys	Lys
			195			200						205			
Glu	Glu	Glu	Lys	Gly	Gly	Glu	Gly	Glu	Lys	Glu	Lys	Glu	Gly	Arg	Glu

210		215		220
Gly Arg Glu Lys Glu Lys Gly Gly Glu Glu Lys Gly Glu Gly Glu Gly				
225		230		235
Glu Gly Arg Arg Glu Gly Gly Lys Arg Arg Lys Arg Arg Glu Arg Lys				240
	245		250	255
Lys Lys Lys Lys Lys Lys Asn Asn Lys Lys Lys Lys Glu Lys Lys His				
	260		265	270
Pro His Val Ser Thr Pro Lys Val Tyr Ala Ser Arg Thr Glu Ser Thr				
	275		280	285
Glu Lys Thr Ile Thr Asn Leu Lys Asp Lys Ser Ile Cys Leu				
	290		295	300

<210> 8517
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 8517															
Arg Asp Val Gly Asp Ile Arg His Phe Ser Arg Ser Phe Glu Ser Phe															
1	5							10					15		
Leu Pro Ser Cys Arg Glu Lys Asn Arg Glu Val Phe Gly Arg Gly Gln															
	20						25					30			
Leu Asn Leu Leu Ile Cys Thr Met Ser Lys Lys Lys Arg Gly Glu Glu															
	35					40					45				
Arg Met Lys Glu Glu Asp Asn Ile Leu Lys Lys Val Gly Lys Lys Asn															
	50				55					60					
Ser Phe Lys Val Pro Glu Gly Tyr Phe Glu Asn Leu Thr Ser Glu Val															
65				70				75						80	
Met Gly Lys Leu Pro Glu Lys Glu Gly Pro Ala Phe Glu Glu Val Lys															
	85						90						95		
Gln Pro Thr Met Trp Ile Arg Met Lys Pro Leu Leu Tyr Met Ala Ala															
	100					105						110			
Met Phe Ile Gly Ala Ala Leu Ile Ile Arg Val Ala Ser Ser Asn His															
	115					120						125			
Gln Pro Thr Thr Ala Gly Asp His Leu Thr Ala Asn Glu Ala Ala Thr															
	130				135						140				
Glu Val Val Ser Asp Glu Tyr Ile Asp Val Ala Leu Asp Arg Ser Met															
145			150					155							160
Leu Asp Asp Tyr Ser Leu Tyr Val Tyr Leu Ser Asp Ala Thr Ala Glu															
	165						170							175	

<210> 8518
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 8518															
Gly Ser Asn Gly Leu Tyr Ile Pro Thr Leu Lys Lys Gln Ile Ile Asn															
1	5							10					15		
His Thr Phe Ala Gly Leu Phe Leu Thr Phe Ser His Leu Tyr Asn Arg															
	20						25					30			
Ser Lys Ser Phe Gly Ile Asp Arg Phe Leu Phe Tyr Arg Pro Phe Ile															
	35					40					45				
Leu Cys Phe Phe Arg Phe Ser Phe Pro Ile Phe Leu Phe Ser Phe Pro															
	50				55				60						
Phe Ile Pro Cys Phe Phe His Ser Val Asn															
65					70										

<210> 8519

<211> 133
 <212> PRT
 <213> B.fragilis

<400> 8519

Gly	Glu	Lys	Gly	Glu	Glu	Arg	Lys	Glu	Gly	Arg	Glu	Lys	Lys	Gly	Lys
1				5					10					15	
Lys	Glu	Lys	Arg	Arg	Gly	Lys	Gly	Lys	Lys	Gly	Lys	Lys	Arg	Lys	Arg
			20					25					30		
Lys	Gly	Lys	Gly	Lys	Lys	Lys	Gly	Glu	Glu	Arg	Gly	Lys	Gly	Arg	Lys
		35					40					45			
Lys	Lys	Arg	Lys	Lys	Lys	Gly	Gly	Lys	Gly	Lys	Lys	Lys	Lys	Arg	Glu
	50					55					60				
Glu	Lys	Glu	Glu	Arg	Lys	Arg	Arg	Gly	Gly	Arg	Arg	Arg	Glu	Lys	Gly
65					70					75					80
Lys	Gly	Arg	Glu	Glu	Glu	Arg	Gly	Glu	Lys	Glu	Glu	Lys	Glu	Glu	Lys
			85					90					95		
Glu	Lys	Lys	Lys	Lys	Lys	Lys	Lys	Ile	Thr	Lys	Lys	Lys	Lys	Lys	Lys
			100					105					110		
Asn	Thr	Pro	Met	Ser	Ala	Leu	Leu	Lys	Ser	Met	Leu	Pro	Val	Gln	Arg
		115					120					125			
Val	Gln	Arg	Lys	Arg											
			130												

<210> 8520
 <211> 431
 <212> PRT
 <213> B.fragilis

<400> 8520

Phe	Ile	Gly	Gly	Gly	Thr	Lys	Met	Lys	Val	Leu	Met	Phe	Gly	Trp	Glu
1				5					10					15	
Phe	Pro	Pro	His	Ile	Leu	Gly	Gly	Leu	Gly	Thr	Ala	Ser	Tyr	Gly	Leu
			20					25					30		
Thr	Lys	Gly	Met	Ser	Gln	Gln	Glu	Asp	Met	Glu	Ile	Thr	Phe	Cys	Ile
		35					40					45			
Pro	Lys	Pro	Trp	Gly	Asp	Glu	Asp	Gln	Ser	Phe	Leu	Arg	Ile	Ile	Gly
	50					55					60				
Met	Asn	Ser	Thr	Pro	Ile	Val	Trp	Arg	Asp	Val	Asp	Trp	Glu	Tyr	Val
65					70					75					80
Lys	Gly	Arg	Val	Gly	Ser	Tyr	Met	Asp	Pro	Gln	Leu	Tyr	Phe	Asp	Leu
			85					90						95	
Arg	Asp	His	Ile	Tyr	Ala	Asp	Phe	Asn	Tyr	Leu	Asn	Ala	Asn	Asp	Leu
			100					105					110		
Gly	Cys	Ile	Glu	Phe	Ser	Gly	Arg	Tyr	Pro	Asp	Asn	Leu	His	Glu	Glu
		115					120					125			
Ile	Asn	Asn	Tyr	Ser	Ile	Val	Ala	Gly	Val	Ile	Ala	Arg	Gln	Gln	Glu
	130					135						140			
Phe	Glu	Ile	Ile	His	Ser	His	Asp	Trp	Leu	Thr	Tyr	Pro	Ala	Gly	Ile
145					150					155					160
His	Ala	Lys	Gln	Val	Ser	Gly	Lys	Pro	Leu	Val	Ile	His	Val	His	Ala
			165					170						175	
Thr	Asp	Phe	Asp	Arg	Ser	Arg	Gly	Asn	Val	Asn	Pro	Thr	Val	Tyr	Ala
		180						185					190		
Ile	Glu	Lys	Asn	Gly	Met	Asp	His	Ala	Asp	His	Ile	Met	Cys	Val	Ser
		195				200						205			
Glu	Leu	Thr	Arg	Gln	Thr	Val	Ile	His	Lys	Tyr	Phe	Gln	Asp	Pro	Lys
	210					215					220				
Lys	Val	Ser	Thr	Val	His	Asn	Ala	Val	Ser	Pro	Leu	Ser	Gln	Glu	Ile

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225          230          235          240
Gln Asp Ile Val Pro Asn Lys Asn Pro Lys Glu Lys Val Val Thr Phe
          245          250          255
Leu Gly Arg Ile Thr Met Gln Lys Gly Pro Glu Tyr Phe Val Glu Ala
          260          265          270
Ala Ala Met Val Leu Gln Arg Thr Arg Asn Val Arg Phe Val Met Ala
          275          280          285
Gly Ser Gly Asp Met Met Asp Gln Met Ile Arg Leu Ala Ala Glu Arg
          290          295          300
Gly Ile Ala Asp Arg Phe His Phe Pro Gly Phe Met Lys Gly Lys Gln
305          310          315          320
Val Tyr Glu Val Leu Lys Ala Ser Asp Val Tyr Ile Met Pro Ser Val
          325          330          335
Ser Glu Pro Phe Gly Ile Ser Pro Leu Glu Ala Met Gln Cys Ser Val
          340          345          350
Pro Ser Ile Ile Ser Lys Gln Ser Gly Cys Ala Glu Ile Leu Glu Lys
          355          360          365
Cys Ile Lys Thr Asp Tyr Trp Asp Ile His Ala Met Ala Asp Ala Ile
          370          375          380
Tyr Ser Ile Cys Thr Tyr Pro Ala Met Tyr Glu Tyr Leu Arg Asp Glu
385          390          395          400
Gly Lys Lys Glu Val Asp Glu Ile Lys Trp Glu Asn Val Gly Tyr Lys
          405          410          415
Val Arg Gly Ile Tyr Asp Glu Val Ile Lys Asn Tyr Gly Lys Gln
          420          425          430

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<210> 8521

<211> 819

<212> PRT

<213> B.fragilis

<400> 8521

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His Thr Phe Ile Thr Met Lys Lys Gly Ile Thr Leu Phe Leu Leu Ser
1          5          10          15
Leu Leu Phe Ile Thr Pro Gly Cys Lys Gln Ser Lys Glu Thr Ile Val
          20          25          30
Asn Glu Tyr Asn Ile Val Pro Leu Pro Asn Gln Met Ile Pro Gln Gln
          35          40          45
Gly Arg Phe Glu Ile Ser Lys Lys Val Arg Val Ile Thr Thr Ala Cys
          50          55          60
Thr Pro Asp Val Gln Ile Ala Asp Ser Leu Ile Asn Arg Leu Lys
          65          70          75          80
Leu Thr Ser Gly Ile Thr Ile Lys Gln Thr Phe Glu Asn Val Thr Asp
          85          90          95
Glu Pro Val Ile Arg Phe Val Pro Gln Asp Gly Met Pro Glu Glu Gly
          100          105          110
Tyr Lys Leu Ser Val Thr Pro Gln Asn Ile Thr Leu Thr Ala Ser Thr
          115          120          125
Pro Lys Gly Phe Phe Tyr Ala Val Gln Thr Leu Tyr Gln Leu Leu Pro
          130          135          140
Pro Val Val Tyr Gly Asn Gln Lys Val Lys Asn Ala Glu Trp Ser Val
          145          150          155          160
Pro Ala Val Glu Ile Glu Asp Ala Pro Arg Phe Ala Tyr Arg Gly Leu
          165          170          175
Met Leu Asp Val Cys Arg His Phe Ser Pro Val Glu Tyr Ile Tyr Lys
          180          185          190
Phe Ile Asp Met Leu Ala Met His Lys Met Asn Thr Phe His Trp His
          195          200          205
Leu Thr Asp Asp Gln Gly Trp Arg Ile Glu Ile Lys Lys Tyr Pro Lys

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210	215	220
Leu Thr Glu Ile Gly Ser Lys Arg Lys Glu Thr Leu Val Asp Tyr Tyr		
225	230	235
Tyr Val Asn Tyr Pro Gln Val Phe Asp Gly Lys Glu His Gly Gly Tyr		240
	245	250
Tyr Thr Gln Glu Gln Ile Arg Ala Ile Val Asp Tyr Ala Ala Ser Lys		255
	260	265
Phe Ile Thr Val Ile Pro Glu Ile Glu Met Pro Gly His Ala Ile Ala		270
	275	280
Ala Ile Ala Ser Tyr Pro Glu Leu Ser Cys Thr Pro Asp Ser Thr Cys		285
	290	295
Asp Val Thr Gly Thr Trp Gly Val Phe Glu Gln Val Phe Cys Pro Ser		300
305	310	315
Asp Thr Thr Phe Gln Phe Leu Glu Gly Val Met Asp Glu Val Met Asp		320
	325	330
Leu Phe Pro Ser Lys Tyr Ile His Ile Gly Gly Asp Glu Cys Pro Lys		335
	340	345
Thr Ala Trp Ile Asn Ser Glu Tyr Cys Gln Ser Leu Ile Lys Gln Leu		350
	355	360
Gly Leu Lys Asp Asp Val Thr Pro Asn Val Ile Asp Gly Lys Lys His		365
370	375	380
Thr Lys Glu Glu Lys Leu Gln Ser Tyr Phe Ile Thr Arg Met Glu Lys		385
	390	395
Tyr Leu Asn Ser Lys Gly Arg Asn Ile Ile Gly Trp Asp Glu Ile Leu		400
	405	410
Glu Gly Gly Leu Ala Pro Asn Ala Thr Val Met Ser Trp Arg Gly Val		415
	420	425
Glu Gly Gly Leu Asn Ala Ala Lys Ala Gly His Asn Ala Ile Met Thr		430
	435	440
Pro Asn Pro Tyr Ala Tyr Leu Asp Gln Tyr Gln Glu Glu Pro Glu Ile		445
	450	455
Ala Pro Val Thr Ile Gly Gly Tyr Asn Thr Leu Lys Lys Thr Tyr Ser		460
465	470	475
Tyr Asn Pro Val Pro Asp Asp Ala Asn Glu Leu Val Lys Lys His Ile		480
	485	490
Ile Gly Val Gln Gly Asn Ile Trp Thr Glu Tyr Met Pro Gly Asn Asp		495
	500	505
Asn Arg Asp Tyr Gln Ala Phe Pro Arg Ala Val Ala Ile Ala Glu Thr		510
	515	520
Gly Trp Thr Leu Asn Ala Asn Lys Asn Trp Asn Asn Phe Cys Gln Arg		525
	530	535
Met Val Glu Asp Phe Arg Arg Met Asp Val Lys Asn Val Lys Ala Cys		540
545	550	555
Arg Asn Phe Phe Asp Val Asn Ile Asn Thr His Val Asp Glu Thr Asn		560
	565	570
Thr Leu Lys Val Val Leu Glu Ser Phe Tyr Pro Asn Ala Glu Ile His		575
	580	585
Tyr Thr Thr Asn Gly Ser Val Pro Thr Val Glu Ser Ala Ile Tyr Asn		590
	595	600
Gln Pro Phe Ala Leu Ser Gly Glu Met Asp Val Lys Ala Ala Ala Phe		605
	610	615
Lys Asp Gly Lys Met Leu Gly Lys Val Ser Gly Lys Lys Leu Tyr Gly		620
625	630	635
Asn Leu Ile Ser Gly Lys Ser Phe Thr Val Thr Pro Pro Ile Gly Ala		640
	645	650
Ala Lys Gly Asp Ile Leu Gly Glu Asn Asp Val Leu Gly Thr Asp Ile		655
	660	665
Ser Thr Phe Gly Leu Thr Asn Gly Lys Arg Gly Asn Ile Ala Ser Met		670
	675	680
		685

Thr Pro Trp Ser Gly Phe Arg Met Asn Asp Ala Cys Asn Lys Leu Val
 690 695 700
 Phe Ile Val Glu Phe Glu Gln Pro Thr Thr Val Ser Lys Val Val Phe
 705 710 715 720
 Gly Ser Leu Tyr Asn Pro Ala Ser Val Ile Leu Pro Pro Ser Val Ala
 725 730 735
 Thr Val Glu Thr Ser Ser Asp Gly Arg Lys Tyr Asp Lys Met Ala Glu
 740 745 750
 Ala Ser Phe Lys Arg Asn Tyr Pro Glu Arg Gly Arg Lys Ala Phe Thr
 755 760 765
 Asp Thr Leu Gly Phe Ala Pro Lys Glu Val Lys Tyr Ile Lys Ile Thr
 770 775 780
 Leu Gln Asn Gly Gly Thr Leu Arg Asn Gly Ile Asp Phe Val Lys Asp
 785 790 795 800
 Pro Asn Glu Lys Asp Val Val Gln Ala Asn Ile Tyr Leu Asp Glu Ile
 805 810 815
 Glu Val Tyr

<210> 8522
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8522
 Tyr Thr Pro Ile Phe Ile Gly Val Phe Cys Lys Ile Asn Met Phe Phe
 1 5 10 15
 Leu Cys Thr Pro Leu Phe Val Cys Gly Arg Lys Asn Phe Phe Val Tyr
 20 25 30
 Phe Thr Tyr Pro Glu Ile Thr Ile Lys Tyr Glu Phe Ile Ser Arg Ile
 35 40 45
 Ile Gly Phe Phe Leu Tyr Leu Pro Ser Ile Arg Arg Leu Val Phe Glu
 50 55 60
 Val Gln Tyr Ile Asn Met Val Phe Leu Val Ile Leu Ala Leu Phe Cys
 65 70 75 80
 Ser Lys Gly Ser Gly
 85

<210> 8523
 <211> 649
 <212> PRT
 <213> B.fragilis

<400> 8523
 Cys Thr Thr Met Ser Tyr Leu His Phe Asp Lys Thr Leu Met Ile Asn
 1 5 10 15
 Leu Glu Glu Ser Leu Pro Arg Glu Ile Leu Arg Thr Asn Lys Ser Gly
 20 25 30
 Ala Tyr His Cys Thr Thr Ile Val Asp Cys Asn Thr Arg Lys Tyr His
 35 40 45
 Gly Leu Leu Val Ile Pro Val Pro Asn Leu Asp Asp Glu Asn His Val
 50 55 60
 Leu Leu Ser Ser Leu Asp Glu Thr Val Ile Gln His Gly Ala Glu Phe
 65 70 75 80
 Asn Leu Gly Leu His Lys Tyr Gln Gly Asn His Phe Ser Pro Asn Gly
 85 90 95
 His Lys Tyr Ile Arg Glu Phe Asp Cys Glu His Ile Pro Ala Thr Thr
 100 105 110
 Tyr Arg Val Gly Gly Val Ile Leu Arg Lys Glu Lys Ile Phe Val His

115	120	125
His Glu Asn Arg Ile Leu Ile Arg Tyr Thr Leu Val Asp Ala His Ser		
130	135	140
Ala Thr Thr Leu Arg Phe Arg Pro Phe Leu Ala Phe Arg Ser Val Arg		
145	150	155
Glu Tyr Thr His Glu Asn Ser Gln Ala Ser Arg Asp Tyr Gln Leu Val		
165	170	175
Glu Asn Gly Ile Lys Thr Cys Met Tyr Pro Gly Tyr Pro Glu Leu Phe		
180	185	190
Met Gln Leu Asn Lys Lys Asn Glu Phe His Tyr Glu Pro Asn Trp Tyr		
195	200	205
Arg Gly Ile Glu Tyr Pro Lys Glu Gln Glu Arg Gly Tyr Asp Phe Asn		
210	215	220
Glu Asp Leu Tyr Val Pro Gly Tyr Phe Glu Val Asp Ile Lys Lys Gly		
225	230	235
Glu Ser Ile Ile Phe Ser Ala Gly Ile Ser Glu Ile Ser Pro Arg Arg		
245	250	255
Leu Lys Gln Thr Phe Glu Ala Glu Val Ala Asp Arg Thr Pro Arg Asp		
260	265	270
Ser Phe Tyr His Cys Leu Lys Asn Ser Ala His Gln Phe His Asn Lys		
275	280	285
Gln Glu Glu Asp His Tyr Ile Leu Ala Gly Tyr Pro Trp Phe Lys Cys		
290	295	300
Arg Ala Arg Asp Met Phe Val Ser Leu Pro Gly Leu Thr Leu Ala Val		
305	310	315
Asp Glu Ile Gly Glu Phe Glu Asp Val Met Glu Thr Ala Arg Lys Ala		
325	330	335
Ile Asn Asn Tyr Ile Lys Gly Glu Pro Ile Gly Cys Lys Ile Tyr Glu		
340	345	350
Met Asp Asp Pro Asp Val Leu Leu Trp Ala Val Trp Ala Leu Gln Gln		
355	360	365
Tyr Ala Lys Glu Thr Ser Arg Glu Gln Cys Arg Ala Lys Tyr Gly Ser		
370	375	380
Leu Leu Glu Glu Ile Ile Asp Phe Ile Arg Gln Arg Lys His Asp Asn		
385	390	395
Leu Phe Leu His Glu Asn Gly Leu Leu Tyr Ala Asn Gly Ala Asp Arg		
405	410	415
Ala Ile Thr Trp Met Asn Ser Thr Val Asn Gly Arg Pro Val Ile Pro		
420	425	430
Arg Thr Gly Tyr Ile Val Glu Ile Asn Ala Leu Trp Tyr Asn Ala Leu		
435	440	445
Arg Phe Ile Ala Asp Leu Val Arg Glu Gly Gly Asn Gly Leu Leu Ala		
450	455	460
Asp Ser Leu Asp Ala Gln Ala Glu Val Thr Gly Lys Ser Phe Val Glu		
465	470	475
Val Phe Arg Asn Glu Tyr Gly Tyr Leu Leu Asp Tyr Val Asp Gly Asn		
485	490	495
Met Met Asp Trp Ser Val Arg Pro Asn Met Ile Phe Thr Val Ala Phe		
500	505	510
Asp Tyr Ser Pro Leu Asp Arg Val Gln Lys Lys Gln Val Leu Asp Ile		
515	520	525
Val Thr Lys Glu Leu Leu Thr Pro Lys Gly Leu Arg Thr Leu Ser Pro		
530	535	540
Lys Ser Gly Gly Tyr Asn Pro Asn Tyr Val Gly Pro Gln Ile Gln Arg		
545	550	555
Asp Tyr Ala Tyr His Gln Gly Thr Ala Trp Pro Trp Leu Met Gly Phe		
565	570	575
Tyr Met Glu Ala Tyr Leu Arg Ile Tyr Lys Met Ser Gly Ile Ser Phe		
580	585	590

Val Glu Arg Gln Leu Ile Gly Leu Glu Asp Glu Met Thr Ser His Cys
 595 600 605
 Val Gly Ser Leu Pro Glu Leu Phe Asp Gly Asn Pro Pro Phe Lys Gly
 610 615 620
 Arg Gly Ala Val Ser Phe Ala Met Asn Val Ala Glu Ile Leu Arg Ile
 625 630 635 640
 Leu Lys Leu Leu Ser Lys Tyr Asn Leu
 645

<210> 8524
 <211> 745
 <212> PRT
 <213> B.fragilis

<400> 8524
 Lys Lys His Ile Ile Leu Cys Pro Thr Thr Asn Lys Arg Asp Thr Ile
 1 5 10 15
 Met Ser Lys Met Arg Phe Phe Ala Leu Gln Glu Leu Ser Asn Arg Lys
 20 25 30
 Pro Leu Glu Ile Thr Thr Pro Ser Asn Lys Leu Ser Asp Tyr Tyr Ala
 35 40 45
 Ser His Val Phe Asp Arg Lys Lys Met Gln Glu Tyr Leu Pro Lys Glu
 50 55 60
 Ala Tyr Lys Ala Val Val Asp Ala Thr Glu Lys Gly Thr Pro Ile Ser
 65 70 75 80
 Arg Glu Met Ala Asp Leu Ile Ala Asn Gly Met Lys Ser Trp Ala Lys
 85 90 95
 Ser Leu Asn Val Thr His Tyr Thr His Trp Phe Gln Pro Leu Thr Asp
 100 105 110
 Gly Thr Ala Glu Lys His Asp Gly Phe Ile Glu Phe Gly Glu Asp Gly
 115 120 125
 Glu Val Ile Glu Arg Phe Ser Gly Lys Leu Leu Ile Gln Gln Glu Pro
 130 135 140
 Asp Ala Ser Ser Phe Pro Asn Gly Gly Ile Arg Asn Thr Phe Glu Ala
 145 150 155 160
 Arg Gly Tyr Thr Ala Trp Asp Val Ser Ser Pro Ala Phe Val Val Asp
 165 170 175
 Thr Thr Leu Cys Ile Pro Thr Ile Phe Ile Ser Tyr Thr Gly Glu Ala
 180 185 190
 Leu Asp Tyr Lys Thr Pro Leu Leu Lys Ala Leu Ala Ala Val Asp Lys
 195 200 205
 Ala Ala Thr Glu Val Cys Gln Leu Phe Asp Lys Asn Ile Thr Arg Val
 210 215 220
 Phe Thr Asn Leu Gly Trp Glu Gln Glu Tyr Phe Leu Val Asp Thr Ser
 225 230 235 240
 Leu Tyr Asn Ala Arg Pro Asp Leu Arg Leu Thr Gly Arg Thr Leu Met
 245 250 255
 Gly His Ser Ser Ala Lys Asp Gln Gln Leu Glu Asp His Tyr Phe Gly
 260 265 270
 Ser Ile Pro Pro Arg Val Thr Ala Phe Met Lys Glu Leu Glu Ile Glu
 275 280 285
 Cys His Lys Leu Gly Ile Pro Val Lys Thr Arg His Asn Glu Val Ala
 290 295 300
 Pro Asn Gln Phe Glu Leu Ala Pro Ile Phe Glu Asn Cys Asn Leu Ala
 305 310 315 320
 Asn Asp His Asn Gln Leu Val Met Asp Leu Met Lys Arg Ile Ala Arg
 325 330 335
 Lys His His Phe Ala Val Leu Phe His Glu Lys Pro Tyr Asn Gly Val
 340 345 350

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Asn Gly Ser Gly Lys His Asn Asn Trp Ser Leu Cys Thr Asp Thr Gly
   355                               360           365
Ile Asn Leu Phe Ala Pro Gly Lys Asn Pro Lys Gly Asn Met Leu Phe
   370                               375           380
Leu Thr Phe Leu Val Asn Val Leu Met Met Val His Lys Asn Gln Asp
385                               390           395           400
Leu Leu Arg Ala Ser Ile Met Ser Ala Gly Asn Ser His Arg Leu Gly
   405                               410           415
Ala Asn Glu Ala Pro Pro Ala Ile Leu Ser Ile Phe Leu Gly Ser Gln
   420                               425           430
Leu Ser Ala Thr Leu Asp Glu Ile Val Arg Gln Val Thr Asn Ser Lys
   435                               440           445
Met Thr Pro Glu Glu Lys Thr Thr Leu Lys Leu Gly Ile Gly Arg Ile
   450                               455           460
Pro Glu Ile Leu Leu Asp Thr Thr Asp Arg Asn Arg Thr Ser Pro Phe
465                               470           475           480
Ala Phe Thr Gly Asn Arg Phe Glu Phe Arg Ala Ala Gly Ser Ser Ala
   485                               490           495
Asn Cys Ala Ala Ala Met Ile Ala Ile Asn Ala Ala Met Ala Asn Gln
   500                               505           510
Leu Asn Glu Phe Lys Ala Ser Val Asp Lys Leu Met Glu Glu Gly Ile
   515                               520           525
Gly Lys Asp Glu Ala Ile Phe Arg Ile Leu Lys Glu Asn Ile Ile Ala
   530                               535           540
Ser Glu Pro Ile Arg Phe Glu Gly Asp Gly Tyr Ser Glu Glu Trp Lys
545                               550           555           560
Gln Glu Ala Ala Arg Arg Gly Leu Thr Asn Ile Cys His Val Pro Glu
   565                               570           575
Ala Leu Met His Tyr Met Asp Asn Gln Ser Arg Ala Val Leu Ile Gly
   580                               585           590
Glu Arg Ile Phe Asn Glu Thr Glu Leu Ala Cys Arg Leu Glu Val Glu
   595                               600           605
Leu Glu Lys Tyr Thr Met Lys Val Gln Ile Glu Ser Arg Val Leu Gly
   610                               615           620
Asp Leu Ala Ile Asn His Ile Val Pro Ile Ala Val Ser Tyr Gln Asn
625                               630           635           640
Arg Leu Leu Glu Asn Leu Cys Arg Met Lys Glu Ile Phe Ser Glu Glu
   645                               650           655
Glu Tyr Glu Val Met Ser Ala Asp Arg Lys Glu Leu Ile Lys Glu Ile
   660                               665           670
Ser His Arg Val Ser Ala Ile Lys Val Leu Val Arg Asp Met Thr Glu
   675                               680           685
Ala Arg Lys Val Ala Asn His Lys Glu Asn Phe Lys Glu Lys Ala Phe
   690                               695           700
Ala Tyr Glu Glu Thr Val Arg Pro Tyr Leu Glu Ser Ile Arg Asp His
705                               710           715           720
Ile Asp His Leu Glu Met Glu Ile Asp Asp Glu Ile Trp Pro Leu Pro
   725                               730           735
Lys Tyr Arg Glu Leu Leu Phe Thr Lys
   740                               745

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<210> 8525

<211> 238

<212> PRT

<213> B.fragilis

<400> 8525

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Lys Lys Asn Met Ile Thr Ile His Asn Leu Arg Lys Asn Phe Gly Thr
1                               5                               10           15

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Gln Thr Ala Val Asp Ile Glu Asn Tyr Thr Ile Asn Gln Gly Glu Met
 20 25 30
 Val Gly Leu Val Gly Asn Asn Gly Ala Gly Lys Thr Thr Leu Phe Arg
 35 40 45
 Leu Met Leu Asp Leu Leu Lys Ala Asp Thr Gly Glu Ile Ile Ile Asn
 50 55 60
 Asp Ile His Val Asn Gln Ser Glu Asp Trp Lys Ser Phe Thr Gly Ala
 65 70 75 80
 Phe Ile Asp Asp Gly Phe Leu Ile Ser Tyr Leu Thr Pro Glu Glu Tyr
 85 90 95
 Phe Tyr Phe Ile Gly Lys Met Tyr Gly Leu Lys Lys Glu Glu Val Asp
 100 105 110
 Glu Arg Leu Ile Pro Phe Glu Arg Phe Met Asn Gly Glu Val Leu Gly
 115 120 125
 Gln Lys Lys Phe Ile Arg Asn Phe Ser Ala Gly Asn Lys Gln Lys Ile
 130 135 140
 Gly Ile Val Ser Ala Met Leu His Tyr Pro Lys Leu Ile Ile Leu Asp
 145 150 155 160
 Glu Pro Phe Asn Phe Leu Asp Pro Ser Ser Gln Ser Val Ile Lys His
 165 170 175
 Leu Leu Lys Lys Tyr Asn Glu Glu His Asn Ala Thr Val Ile Ile Ser
 180 185 190
 Ser His Asn Leu Asn His Thr Val Asp Val Cys Pro Arg Ile Ala Val
 195 200 205
 Leu Glu His Gly Val Ile Ile Arg Asp Leu Val Asn Glu Asn Asn Ser
 210 215 220
 Ala Glu Lys Glu Leu Glu Asp Tyr Phe Asn Val Glu Glu Glu
 225 230 235

<210> 8526

<211> 427

<212> PRT

<213> B.fragilis

<400> 8526

Ser Ile Asp Met Leu Thr Ile Lys Gln Ile Thr Glu Asn Thr Asp Ala
 1 5 10 15
 Val Ile Arg Gly Leu Glu Lys Lys His Phe Lys Gly Ala Lys Glu Thr
 20 25 30
 Ile Ala Gln Val Ile Glu Val Asn Asp Lys Arg Arg Asn Thr Gln Asn
 35 40 45
 Gln Leu Asp Lys Asn Leu Ala Glu Val Asn Ser Leu Ser Lys Thr Ile
 50 55 60
 Gly Gln Leu Met Lys Glu Gly Lys Lys Glu Glu Ala Glu Val Ala Lys
 65 70 75 80
 Ala Arg Val Ala Glu Ile Lys Glu Ser Asn Lys Thr Leu Gln Ala Asp
 85 90 95
 Met Asp Gln Ala Ala Asn Asp Met Leu Asn Leu Leu Tyr Thr Ile Pro
 100 105 110
 Asn Ile Pro Tyr Asp Ser Val Pro Glu Gly Val Gly Ala Glu Asp Asn
 115 120 125
 Val Val Glu Lys Met Gly Gly Met Glu Thr Gln Leu Pro Thr Asp Ala
 130 135 140
 Leu Pro His Trp Glu Leu Ala Lys Lys Tyr Asp Leu Ile Asp Phe Asp
 145 150 155 160
 Leu Gly Val Lys Ile Thr Gly Ala Gly Phe Pro Val Tyr Lys Gly Lys
 165 170 175
 Gly Ala Gln Leu Gln Arg Ala Leu Ile Asn Phe Phe Leu Asp Glu Ala
 180 185 190

Arg Lys Ser Gly Tyr Thr Glu Ile Met Pro Pro Thr Val Val Asn Ala
 195 200 205
 Ala Ser Gly Tyr Gly Thr Gly Gln Leu Pro Asp Lys Glu Gly Gln Met
 210 215 220
 Tyr His Cys Glu Val Asp Asp Leu Tyr Leu Ile Pro Thr Ala Glu Val
 225 230 235 240
 Pro Val Thr Asn Ile Tyr Arg Asp Val Ile Leu Asp Glu Lys Gln Leu
 245 250 255
 Pro Ile Lys Asn Cys Ala Tyr Thr Gln Cys Phe Arg Arg Glu Ala Gly
 260 265 270
 Ser Tyr Gly Lys Asp Val Arg Gly Leu Asn Arg Leu His Glu Phe Ser
 275 280 285
 Lys Val Glu Leu Val Arg Ile Asp Lys Pro Glu His Ser Arg Gln Ser
 290 295 300
 His Gln Glu Met Leu Asp His Val Glu Gly Leu Leu Gln Lys Leu Glu
 305 310 315 320
 Leu Pro Tyr Arg Ile Leu Arg Leu Cys Gly Gly Asp Met Ser Phe Thr
 325 330 335
 Ala Ala Leu Cys Phe Asp Phe Glu Val Tyr Ser Glu Ala Gln Lys Arg
 340 345 350
 Trp Leu Glu Val Ser Ser Val Ser Asn Phe Asp Thr Tyr Gln Ala Asn
 355 360 365
 Arg Leu Lys Cys Arg Tyr Arg Ser Gly Glu Lys Lys Thr Glu Leu Cys
 370 375 380
 His Thr Leu Asn Gly Ser Ala Leu Ala Leu Pro Arg Ile Val Ala Ala
 385 390 395 400
 Leu Leu Glu Asn His Gln Thr Pro Glu Gly Ile Arg Ile Pro Lys Ala
 405 410 415
 Leu Val Pro Tyr Cys Gly Phe Asp Met Ile Asp
 420 425

<210> 8527

<211> 232

<212> PRT

<213> B.fragilis

<400> 8527

Ile Lys Asp Met His Val Phe Tyr Thr Pro Asp Ile Gln Thr Ser Thr
 1 5 10 15
 Glu Leu Pro Glu Glu Ala Gln His Cys Val Arg Val Leu Arg Leu
 20 25 30
 Thr Ala Gly Asp Glu Ile Ser Leu Thr Asp Gly Lys Gly Asn Phe Tyr
 35 40 45
 Arg Ala Glu Ile Ser Val Ala Thr His Lys Arg Cys Leu Val Asn Ile
 50 55 60
 Lys Glu Thr Ile Tyr Gln Glu Pro Leu Trp Asp Gly His Leu His Ile
 65 70 75 80
 Ala Met Ala Pro Thr Lys Asn Met Asp Arg Asn Glu Trp Phe Ala Glu
 85 90 95
 Lys Ala Thr Glu Ile Gly Phe Asp Glu Leu Thr Phe Leu Asn Cys Arg
 100 105 110
 Phe Ser Glu Arg Lys Val Ile Lys Thr Glu Arg Ile Glu Lys Ile Leu
 115 120 125
 Val Ser Ala Ile Lys Gln Ser Leu Lys Ala Arg Leu Pro Arg Leu Asn
 130 135 140
 Glu Met Thr Asp Phe Cys Thr Phe Ile Glu Lys Asp Phe Lys Gly Gln
 145 150 155 160
 Lys Phe Ile Ala His Cys Tyr Glu Gly Glu Lys Pro Leu Leu Lys Asp
 165 170 175

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<210> 8528
<211> 496
<212> PRT
<213> B.fragilis
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<400>	8528														
Asn	Gly	Thr	Met	Leu	Phe	Asn	Glu	Leu	Arg	Leu	His	Gly	Lys	Leu	Ala
1				5					10					15	
Ala	Lys	Arg	His	Pro	Met	Tyr	Glu	Lys	Asn	Lys	Ile	Gly	Lys	Tyr	Ile
			20					25					30		
Met	Tyr	Ala	Ser	Phe	Ile	Phe	Trp	Gly	Ala	Tyr	Phe	Ile	Phe	Ile	Gly
		35					40					45			
Ile	Gly	Leu	Ala	Lys	Ala	Ile	Ser	Thr	Glu	Val	Pro	Asn	Met	Glu	Ala
	50					55					60				
Tyr	His	Ile	Leu	Asn	Ser	Gly	Leu	Ile	Phe	Ala	Leu	Ala	Leu	Asp	Phe
65				70					75					80	
Val	Ile	Arg	Phe	Pro	Phe	Gln	Lys	Thr	Pro	Thr	Gln	Glu	Val	Lys	Pro
			85						90					95	
Tyr	Leu	Leu	Leu	Pro	Val	Lys	Arg	Ser	Arg	Ile	Leu	Asp	Phe	Leu	Leu
			100					105					110		
Leu	Arg	His	Gly	Leu	Ser	Ser	Phe	Asn	Leu	Ile	Trp	Leu	Phe	Leu	Phe
		115					120					125			
Val	Pro	Phe	Ala	Ala	Leu	Thr	Val	Phe	Pro	Phe	Tyr	Gly	Ile	Ser	Gly
	130					135					140				
Val	Leu	Thr	Tyr	Ser	Ile	Gly	Ile	Trp	Leu	Leu	Met	Val	Phe	Asn	Gly
145				150					155					160	
Tyr	Trp	Tyr	Leu	Leu	Cys	Arg	Thr	Leu	Ile	Asn	Glu	His	Ile	Trp	Trp
			165						170					175	
Val	Leu	Leu	Pro	Ile	Val	Val	Tyr	Ser	Gly	Ile	Ala	Ile	Ala	Ile	Phe
			180					185					190		
Ile	Pro	Gln	Thr	Gly	Phe	Ile	Ser	Asn	Phe	Phe	Met	Asn	Leu	Gly	Glu
		195					200					205			
Gly	Tyr	Ile	Glu	Gly	Asn	Leu	Leu	Ala	Tyr	Leu	Gly	Thr	Leu	Ala	Ala
	210				215						220				
Thr	Val	Leu	Val	Trp	Cys	Ile	Asn	Arg	Lys	Val	Met	Thr	Gly	Leu	Ile
225				230					235					240	
Tyr	Asn	Glu	Ile	Asn	Lys	Val	Glu	Asp	Thr	Lys	Val	Lys	Thr	Val	Ser
			245					250						255	
Glu	Tyr	Arg	Phe	Leu	Glu	Arg	Phe	Gly	Glu	Val	Gly	Glu	Tyr	Met	Arg
		260					265						270		
Leu	Glu	Leu	Lys	Met	Leu	Leu	Arg	Asn	Lys	Arg	Cys	Lys	Ala	Ser	Leu
		275					280					285			
Arg	Ser	Val	Ala	Met	Leu	Val	Ile	Ile	Phe	Ser	Ile	Ile	Leu	Ser	Phe
	290				295						300				
Ser	Ser	Thr	Tyr	Asp	His	Met	Lys	Ser	Phe	Val	Gln	Val	Tyr	Ser	Phe
305				310					315					320	
Leu	Gly	Phe	Gly	Met	Val	Ile	Leu	Ile	Gln	Leu	Met	Gly	Phe	Glu	Gly
			325						330					335	
Asn	Tyr	Ile	Asp	Gly	Leu	Met	Thr	Arg	Lys	Glu	Ser	Ile	Lys	Ser	Leu
			340					345					350		

Leu Thr Ala Lys Tyr Tyr Ile Tyr Ser Leu Ala Glu Ile Ile Pro Leu
 355 360 365
 Ile Leu Leu Ile Pro Ala Phe Val Met Gly Lys Ala Ser Leu Leu Gly
 370 375 380
 Ala Val Ala Leu Ile Phe Leu Thr Thr Gly Pro Val Tyr Cys Ile Leu
 385 390 395 400
 Phe Gln Leu Ala Val Tyr Asn His Lys Thr Val Pro Leu Asn Glu Ser
 405 410 415
 Ile Thr Gly Lys Gln Ser Met Asn Thr Gly Met Gln Met Leu Ile Ser
 420 425 430
 Phe Gly Leu Phe Ile Val Pro Thr Thr Leu Tyr Gly Thr Leu Pro Met
 435 440 445
 Leu Leu Gly Gln Thr Trp Ala Tyr Ile Val Ile Leu Ile Ile Gly Leu
 450 455 460
 Gly Phe Thr Leu Thr Ser Pro Met Trp Ile Asn Asn Val Tyr Val Arg
 465 470 475 480
 Phe Met Gln Arg Arg Tyr Glu Asn Met Glu Gly Phe Arg Asp Ser Lys
 485 490 495

<210> 8529

<211> 264

<212> PRT

<213> B.fragilis

<400> 8529

Ile Ile Asn Met His Thr Arg Glu Glu Gln Met Glu Ala Phe Gly Arg
 1 5 10 15
 Phe Leu Asp Ile Leu Asp Glu Leu Arg Val Lys Cys Pro Trp Asp Arg
 20 25 30
 Lys Gln Thr Asn Glu Ser Leu Arg Pro Asn Thr Ile Glu Glu Thr Tyr
 35 40 45
 Glu Leu Cys Asp Ala Leu Met Arg Asn Asp Lys Lys Asp Ile Cys Lys
 50 55 60
 Glu Leu Gly Asp Val Leu Leu His Val Ala Phe Tyr Ala Lys Ile Gly
 65 70 75 80
 Ser Glu Thr Gly Asp Phe Asp Met Lys Asp Val Cys Asp Lys Leu Cys
 85 90 95
 Glu Lys Leu Ile Phe Arg His Pro His Val Phe Gly Glu Val Lys Ala
 100 105 110
 Glu Thr Ala Gly Gln Val Ser Glu Asn Trp Glu Gln Leu Lys Leu Lys
 115 120 125
 Glu Lys Asp Gly Asn Lys Ser Val Leu Ser Gly Val Pro Ala Ala Leu
 130 135 140
 Pro Ser Leu Ile Lys Ala Tyr Arg Ile Gln Asp Lys Ala Arg Asn Val
 145 150 155 160
 Gly Phe Asp Trp Glu Glu Arg Glu Gln Val Trp Asp Lys Val Lys Glu
 165 170 175
 Glu Ile Ala Glu Phe Gln Val Glu Val Ala Asn Met Asp Lys Asp Lys
 180 185 190
 Ala Glu Ala Glu Phe Gly Asp Val Met Phe Ser Leu Ile Asn Ala Ala
 195 200 205
 Arg Leu Tyr Lys Ile Asn Pro Asp Asn Ala Leu Glu Arg Thr Asn Gln
 210 215 220
 Lys Phe Ile Arg Arg Phe Asn Tyr Leu Glu Asp His Thr Ile Lys Glu
 225 230 235 240
 Gly Lys Asn Leu Lys Asp Met Ser Leu Asp Glu Met Asp Ala Ile Trp
 245 250 255
 Asn Glu Ala Lys Lys Lys Gly Leu
 260

<210> 8530
 <211> 216
 <212> PRT
 <213> B.fragilis

<400> 8530
 Val Tyr Thr Met Lys Gln Ile Ile Ile Ser Ile Trp Ile Ala Leu Leu
 1 5 10 15
 Thr Leu Pro Val Phe Ala Gln Gln Gln Met Gln Ala Lys Val Val Leu
 20 25 30
 Asp Lys Thr Ala Ala Thr Phe Glu Lys Ala Gly Gly Ile Cys Ala Glu
 35 40 45
 Phe Asn Val Thr Val Phe Asn Lys Ser Arg Met Ala Gly Gln Ser Ala
 50 55 60
 Gly Val Ile Glu Leu Lys Gly Glu Lys Phe Val Leu Lys Thr Asp Asp
 65 70 75 80
 Gly Ile Thr Trp Phe Asp Gly Lys Thr Gln Trp Ser Tyr Leu Arg Ser
 85 90 95
 Ser Asp Glu Val Asn Ile Ser Asn Pro Thr Gly Thr Glu Leu Gln Gly
 100 105 110
 Leu Asn Pro Tyr Ala Leu Leu Gln Ile Tyr Arg His Gly Phe Asp Tyr
 115 120 125
 Lys Ile Gly Ser Leu Lys Asn Phe Gly Gly Lys Pro Val Tyr Glu Val
 130 135 140
 Val Leu Thr Ala Thr Asp Lys Lys Arg Asp Leu Ser Arg Ile Val Leu
 145 150 155 160
 Tyr Val Ser Lys Asp Thr Tyr Gln Pro Leu Phe Ile Met Met Glu Gln
 165 170 175
 Arg Asp Lys Ser Arg Ser Glu Ile Thr Val Thr Gly Tyr Gln Thr Gly
 180 185 190
 Leu Lys Tyr Ala Asp Gly Met Phe Val Phe Asp Lys Lys Gln Tyr Pro
 195 200 205
 His Ala Glu Val Ile Asp Leu Arg
 210 215

<210> 8531
 <211> 884
 <212> PRT
 <213> B.fragilis

<400> 8531
 Thr Asn Lys Ile Asp Arg Tyr Asn Met Glu Leu Ala Ser Lys Tyr Asn
 1 5 10 15
 Pro Ala Asp Val Glu Gly Lys Trp Tyr Gln Tyr Trp Leu Asp His Lys
 20 25 30
 Leu Phe Ser Ser Lys Pro Asp Gly Arg Glu Pro Tyr Thr Ile Val Ile
 35 40 45
 Pro Pro Pro Asn Val Thr Gly Val Leu His Met Gly His Met Leu Asn
 50 55 60
 Asn Thr Ile Gln Asp Ile Leu Val Arg Arg Ala Arg Met Glu Gly Lys
 65 70 75 80
 Asn Ala Cys Trp Val Pro Gly Thr Asp His Ala Ser Ile Ala Thr Glu
 85 90 95
 Ala Lys Val Val Asn Lys Leu Ala Ala Gln Gly Ile Lys Lys Thr Asp
 100 105 110
 Leu Ser Arg Asp Glu Phe Leu Lys His Ala Trp Ala Trp Thr Asp Glu
 115 120 125
 His Gly Gly Ile Ile Leu Lys Gln Leu Arg Lys Leu Gly Ala Ser Cys

130		135		140
Asp Trp Asp Arg Thr	Ala Phe Thr Met Asp	Glu Lys Arg Ser Glu Ser		
145	150	155	160	
Val Leu Lys Val Phe	Val Asp Leu Tyr Asn	Lys Gly Leu Ile Tyr Arg		
	165	170	175	
Gly Val Arg Met Val	Asn Trp Asp Pro	Lys Ala Leu Thr Ala Leu Ser		
	180	185	190	
Asp Glu Glu Val Ile	Tyr Lys Glu Glu His	Gly Lys Leu Phe Tyr Leu		
	195	200	205	
Arg Tyr Lys Ile Glu	Gly Glu Asp Gly Tyr	Ala Val Val Ala Thr Thr		
	210	215	220	
Arg Pro Glu Thr Ile	Met Gly Asp Thr	Ala Met Cys Ile Asn Pro Asn		
	225	230	235	240
Asp Pro Lys Asn Gln	His Leu Lys Gly	Lys Lys Val Ile Val Pro Leu		
	245	250	255	
Val Gly Arg Val Ile	Pro Val Ile Glu	Asp Asp Tyr Val Asp Ile Glu		
	260	265	270	
Phe Gly Thr Gly Cys	Leu Lys Val Thr	Pro Ala His Asp Val Asn Asp		
	275	280	285	
Tyr Met Leu Gly Glu	Lys Tyr Asn Leu	Pro Ser Ile Asp Ile Phe Asn		
	290	295	300	
Asp Asn Gly Thr Ile	Ser Glu Ala Ala	Gly Met Tyr Ile Gly Met Asp		
	305	310	315	320
Arg Phe Asp Val Arg	Lys Gln Ile Glu	Lys Asp Leu Glu Ala Ala Gly		
	325	330	335	
Leu Leu Glu Lys Thr	Glu Ala Tyr Thr	Asn Lys Val Gly Tyr Ser Glu		
	340	345	350	
Arg Thr Asn Val Val	Ile Glu Pro Lys	Leu Ser Met Gln Trp Phe Leu		
	355	360	365	
Lys Met Glu His Leu	Ala Gln Ile Ala	Leu Glu Pro Val Met Lys Asp		
	370	375	380	
Asp Ile Lys Phe Tyr	Pro Ala Lys Tyr	Lys Asn Thr Tyr Arg His Trp		
	385	390	395	400
Met Glu Asn Ile Lys	Asp Trp Cys Ile	Ser Arg Gln Leu Trp Trp Gly		
	405	410	415	
His Arg Ile Pro Ala	Tyr Phe Leu Pro	Glu Gly Gly Tyr Val Val Ala		
	420	425	430	
Val Thr Asp Glu Glu	Ala Leu Lys Leu	Ala Arg Glu Lys Thr Gly Asn		
	435	440	445	
Pro Asn Leu Lys Met	Thr Asp Leu Arg	Gln Asp Glu Asp Cys Leu Asp		
	450	455	460	
Thr Trp Phe Ser Ser	Trp Leu Trp Pro	Ile Ser Leu Phe Asp Gly Ile		
	465	470	475	480
Asn Asn Pro Gly Asn	Glu Glu Ile Asn	Tyr Tyr Tyr Pro Thr Ser Asp		
	485	490	495	
Leu Val Thr Gly Pro	Asp Ile Ile Phe	Phe Trp Val Ala Arg Met Ile		
	500	505	510	
Met Ala Gly Tyr Glu	Tyr Glu Gly Lys	Met Pro Phe Lys Asn Val Tyr		
	515	520	525	
Phe Thr Gly Ile Val	Arg Asp Lys Leu	Gly Arg Lys Met Ser Lys Ser		
	530	535	540	
Leu Gly Asn Ser Pro	Asp Pro Leu Glu	Leu Ile Glu Lys Tyr Gly Ala		
	545	550	555	560
Asp Gly Val Arg Met	Gly Met Met Leu	Ser Ala Pro Ala Gly Asn Asp		
	565	570	575	
Ile Leu Phe Asp Asp	Ala Leu Cys Glu	Gln Gly Arg Asn Phe Cys Asn		
	580	585	590	
Lys Ile Trp Asn Ala	Phe Arg Leu Val	Lys Gly Trp Glu Asn Gly Met		
	595	600	605	

Gly Thr Ile Asp Ile Pro Ala Asp Ala His Leu Ala Val Gln Trp Phe
 610 615 620
 Asp Gln Arg Leu Asp Ala Ala Val Glu Val Ala Asp Leu Phe Ser
 625 630 635 640
 Lys Tyr Arg Leu Ser Glu Ala Leu Met Leu Ile Tyr Lys Leu Phe Trp
 645 650 655
 Asp Glu Phe Ser Ser Trp Leu Leu Glu Ile Val Lys Pro Ala Tyr Gly
 660 665 670
 Gln Pro Val Asn Gly Phe Ile Tyr Ser Met Thr Leu Ser Ala Phe Glu
 675 680 685
 Arg Leu Leu Ala Met Leu His Pro Phe Met Pro Phe Ile Thr Glu Glu
 690 695 700
 Leu Trp Gln Gln Leu Arg Glu Arg Glu Pro Gly Ala Ser Leu Met Val
 705 710 715 720
 Gln Pro Leu Gly Glu Pro Gly Glu Val Asn Glu Glu Phe Leu Gln Gln
 725 730 735
 Phe Glu Thr Ala Lys Glu Ile Ile Ser Ser Val Arg Thr Ile Arg Leu
 740 745 750
 Gln Lys Asn Ile Ala Leu Lys Glu Pro Leu Glu Leu Gln Val Val Gly
 755 760 765
 Ala Asn Pro Val Glu Lys Met Asn Pro Val Ile Arg Lys Met Cys Asn
 770 775 780
 Leu Ser Ala Ile Glu Val Val Asp Ala Lys Ala Asp Gly Ala Ser Ser
 785 790 795 800
 Phe Met Ile Gly Thr Thr Glu Phe Ala Val Pro Leu Gly Asn Met Ile
 805 810 815
 Asp Val Asp Ala Glu Ile Ala Arg Met Glu Ala Glu Leu Lys His Lys
 820 825 830
 Glu Gly Phe Leu Gln Gly Val Leu Lys Lys Leu Ser Asn Glu Lys Phe
 835 840 845
 Val Asn Asn Ala Pro Ala Ala Val Ile Glu Met Glu Arg Lys Lys Gln
 850 855 860
 Ala Asp Ala Glu Ser Ile Ile Gln Ser Leu Lys Glu Ser Ile Ala Ser
 865 870 875 880
 Leu Lys Asn Val

<210> 8532

<211> 317

<212> PRT

<213> B.fragilis

<400> 8532

Lys Tyr Glu Ile Ile Asn Ile Ile Ser Met Ser Val Glu Pro Gly Lys
 1 5 10 15
 Trp Gly Val Ile Tyr Asn Pro Lys Ala Gly Thr Arg Lys Val Gln Lys
 20 25 30
 Arg Trp Lys Glu Ile Lys Glu Tyr Met Asp Ser Lys Gly Val Ser Tyr
 35 40 45
 Asp Tyr Val Gln Ser Glu Gly Phe Gly Ser Val Glu Arg Leu Ala Gly
 50 55 60
 Ile Leu Ala Asn Asn Gly Tyr Arg Thr Ile Val Val Val Gly Gly Asp
 65 70 75 80
 Gly Ala Leu Asn Asp Ala Ile Asn Gly Ile Met Ser Ser Asn Ala Glu
 85 90 95
 Lys Lys Glu Glu Ile Ala Ile Gly Ile Ile Pro Asn Gly Ile Gly Asn
 100 105 110
 Asp Phe Ala Arg Tyr Trp Glu Leu Asn Leu Glu Tyr Lys Gln Ala Val
 115 120 125

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Asp Trp Ile Ile Asn Asn Arg Gln Lys Lys Ile Asp Val Gly Tyr Cys
 130                      135                      140
Asn Phe Tyr Asp Gly Glu Lys His Gln Arg Arg Tyr Phe Leu Asn Ala
145                      150                      155                      160
Val Asn Ile Gly Leu Gly Ala Arg Ile Val Lys Ile Thr Asp Gln Thr
                      165                      170                      175
Lys Arg Phe Trp Gly Val Lys Phe Leu Ser Tyr Leu Ala Ala Leu Phe
                      180                      185                      190
Leu Leu Ile Phe Glu Arg Lys Leu Tyr Arg Ser His Leu Lys Ile Asn
                      195                      200                      205
Asp Glu His Ile Arg Gly Arg Ile Met Thr Val Cys Val Gly Ser Ala
210                      215                      220
Thr Gly Tyr Gly Gln Thr Pro Ser Ala Val Pro Tyr Asn Gly Trp Leu
225                      230                      235                      240
Asp Val Ser Val Ile Tyr Arg Pro Glu Phe Leu Gln Ile Leu Ser Gly
                      245                      250                      255
Leu Trp Met Leu Ile Gln Gly Arg Ile Leu Asn His Lys Val Val Lys
                      260                      265                      270
Ser Tyr Arg Thr Arg Lys Val Lys Val Leu Arg Ala Gln Asn Ala Ala
275                      280                      285
Val Asp Leu Asp Gly Arg Leu Leu Pro Arg His Phe Pro Ile Glu Ile
290                      295                      300
Gly Ile Ile Pro Glu Ala Thr Thr Leu Ile Ile Pro Asn
305                      310                      315

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<210> 8533

<211> 526

<212> PRT

<213> B.fragilis

<400> 8533

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Phe Thr Glu Ile Lys Lys Ile Val Ile Met Val Lys Arg Met Ile Ser
 1                      5                      10                      15
Gln Leu Ser Val Leu Ala Val Leu Ile Val Phe Met Ala Ala Cys Ser
20                      25                      30
Lys Lys Ala Glu Tyr Ile His Val Ile Pro Ala Asp Ala Ser Ala Val
35                      40                      45
Ala Ser Ile Asn Leu Asn Ser Leu Ala Asp Lys Ala Gly Leu Asn Asp
50                      55                      60
Lys Gln Asn Glu Gly Met Lys Gln Lys Met Met Glu Ala Leu Lys Ser
65                      70                      75                      80
Gly Met Asn Ala Ala Ala Phe Gln Gln Leu Glu Lys Ile Met Lys Asn
85                      90                      95
Pro Ser Gln Ser Gly Ile Asp Val Lys Ala Pro Val Phe Val Phe Thr
100                      105                      110
Ser Lys Thr Phe Ile Ser Pro Thr Ile Val Ala Lys Val Ser Asn Ile
115                      120                      125
Glu Asp Leu Arg Ala Ser Leu Asp Leu Met Ala Lys Glu Gly Ile Cys
130                      135                      140
Gln Pro Met Ala Glu Glu Glu Gly Tyr Ser Phe Thr Ser Leu Gln Lys
145                      150                      155                      160
Asn Asn Leu Leu Val Phe Asn Glu Asn Ala Ala Val Leu Thr Glu Ala
165                      170                      175
Tyr Gly Thr Ser Gln Met Asp Val Ala Lys Gln Thr Ile Ser Thr Leu
180                      185                      190
Leu Lys Gln Thr Glu Glu Asn Ser Ile Ala Ser Asn Gly Ser Phe Arg
195                      200                      205
Lys Met Gln Asp Gln Lys Gly Asp Ile Asn Phe Phe Ala Ser Met Asp
210                      215                      220

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Ala Val Pro Lys Met Tyr Thr Gln Gln Ile Ser Leu Gly Leu Ser Ser
225                230                235                240
Gln Ile Asp Leu Ser Glu Val Lys Ala Val Gly Asn Leu Asn Phe Glu
                245                250                255
Lys Gly Lys Ile Ala Leu Gln Ile Glu Thr Tyr Ser Asp Asn Ala Glu
                260                265                270
Thr Asp Ala Leu Leu Lys Lys Gln Ala Gln Ala Val Lys Lys Leu Asn
                275                280                285
Thr Thr Phe Leu Gln Asn Phe Pro Glu Ser Thr Leu Ala Phe Leu Asn
                290                295                300
Ile Gly Val Asn Gly Ala Ala Phe Tyr Asp Leu Leu Phe Asn Asn Glu
305                310                315                320
Glu Phe Arg Arg Asn Val Ser Leu Ala Lys Ala Asp Glu Val Lys Ser
                325                330                335
Leu Phe Ala Ser Phe Asp Gly Asp Ile Ser Ile Gly Leu Ile Asn Val
                340                345                350
Thr Leu Asn Ser Val Pro Thr Phe Ala Ala Tyr Ala Asp Ala Lys Asp
                355                360                365
Gly Asn Ala Leu Lys Ala Leu Tyr Asp Asn Lys Lys Gln Leu Lys Leu
                370                375                380
Gly Lys Asn Glu Asp Ile Ile Gln Leu Gly Glu Asn Glu Tyr Val Tyr
385                390                395                400
Lys Ser Arg Ala Thr Asn Val Phe Phe Gly Ile Arg Asn Lys Gln Met
                405                410                415
Tyr Ala Thr Asn Asp Glu Leu Leu Tyr Lys Ser Ile Ser Lys Pro Val
                420                425                430
Glu Lys Ser Ile Lys Asp Ala Gly Tyr Val Ser Asp Met Lys Gly Lys
                435                440                445
Asn Val Phe Phe Val Ile Asn Met Asp Ala Ile Leu Asp Leu Pro Val
                450                455                460
Val Lys Met Met Ala Gly Phe Gly Gly Glu Glu Tyr Gln Thr Tyr Tyr
465                470                475                480
Lys Leu Ala Ser Lys Ile Ser Tyr Ile Glu Ala Phe Ser Asp Ser Glu
                485                490                495
Gly Lys Thr Glu Thr Ala Ile Leu Leu Lys Asn Lys Asp Asp Asn Ala
                500                505                510
Leu Lys Gln Ile Val Asp Phe Ala Lys Gln Phe Ala Gly Met
                515                520                525

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<210> 8534

<211> 191

<212> PRT

<213> B.fragilis

<400> 8534

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His Ile Arg Ile Thr Asn Glu Pro Met Asn Pro Tyr Asn Glu Arg Glu
1                5                10                15
Val Leu Ala Leu Leu Gln Asp Glu Arg Thr Gln Lys Gln Gly Phe Glu
                20                25                30
Arg Ile Val Ser Gln Tyr Ser Glu Gln Leu Tyr Trp Gln Ile Arg Arg
                35                40                45
Met Val Leu Ser His Asp Asp Ala Asn Asp Leu Leu Gln Asn Thr Phe
50                55                60
Ile Lys Ala Trp Ile Asn Ile Asp Tyr Phe Arg Ala Glu Ala Lys Leu
65                70                75                80
Ser Thr Trp Leu Tyr Arg Ile Ala Leu Asn Glu Cys Ile Thr Phe Leu
                85                90                95
Asn Lys Gln Arg Ala Met Asn Thr Val Ala Ile Asp Asp Pro Glu Ala
                100                105                110

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Asp Val Thr Gln Lys Leu Glu Ser Asp Pro Tyr Phe Ser Gly Asp Arg
    115          120          125
Ala Glu Leu Leu Leu Gln Lys Ala Leu Leu Thr Leu Pro Glu Lys Gln
    130          135          140
Arg Met Val Phe Asn Leu Lys Tyr Tyr Gln Glu Met Lys Tyr Glu Glu
    145          150          155          160
Met Ser Glu Ile Phe Gly Thr Ser Val Gly Ala Leu Lys Ala Ser Tyr
    165          170          175
His His Ala Val Lys Lys Ile Glu Lys Phe Leu Glu Glu Ala Asn
    180          185          190

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<210> 8535

<211> 218

<212> PRT

<213> B.fragilis

<400> 8535

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Lys Asn Met Ile Leu Lys Arg Thr Ile Ser Lys Glu Glu Val Lys Glu
1      5      10      15
Met Pro Lys Ala Ala Phe Pro Gly Arg Ile His Val Ile Gln Thr Glu
    20      25      30
Ser Glu Ala Gln Lys Ala Val Ala Tyr Leu Gln Ser Gln Ala Ile Leu
    35      40      45
Gly Ile Asp Ser Glu Thr Arg Pro Ser Phe Thr Lys Gly His Ser His
    50      55      60
Lys Val Ala Leu Leu Gln Ile Ser Ser Asp Glu Cys Cys Phe Leu Phe
    65      70      75      80
Arg Leu Asn Met Thr Gly Leu Thr Gln Pro Ile Ile Glu Leu Leu Glu
    85      90      95
Asp Pro Lys Val Ile Lys Val Gly Leu Ser Leu Lys Asp Asp Phe Met
    100     105     110
Met Leu His Lys Arg Ala Pro Phe Asn Gln Gln Ala Cys Ile Glu Leu
    115     120     125
Gln Glu Tyr Val Arg Pro Phe Gly Ile Gln Asp Lys Ser Leu Gln Lys
    130     135     140
Ile Tyr Gly Ile Leu Phe Ser Glu Lys Ile Ser Lys Ser Gln Arg Leu
    145     150     155     160
Ser Asn Trp Glu Ala Asp Val Leu Thr Asp Ala Gln Lys Gln Tyr Ala
    165     170     175
Ala Thr Asp Ala Trp Ala Cys Leu Asn Ile Tyr His Leu Leu Glu Glu
    180     185     190
Leu Lys Arg Thr Gly Asn Tyr Glu Leu Ala Pro Glu Glu Glu Ala Thr
    195     200     205
Glu Lys Val Lys Val Gly Ser Asp Gln Gln
    210     215

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<210> 8536

<211> 287

<212> PRT

<213> B.fragilis

<400> 8536

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Cys Ile Arg Met Glu Leu Leu Leu Gly Ile Val Ile Val Val Thr Cys
1      5      10      15
Trp Met Val Val Arg Ile Ile Arg Ser Ser Lys Asn Gln Glu Gly Tyr
    20      25      30
Lys Arg Trp Arg Ala Gly Asn Tyr Ala Ser Glu Asn Pro Tyr Ala Lys
    35      40      45
Glu Lys Ala Ser Gly Pro Leu Ser Gln Gly Leu Phe Ser Lys Arg Val

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50		55		60	
Arg Thr Thr Gly Ala	Arg Arg Phe Asp Asp Gly Ala Ile Arg Trp Cys				
65	70	75	80		
Ala Asn Leu Leu Ala	Thr Glu Glu Ser Arg Leu Arg Glu Val Leu Asp				
	85	90	95		
Tyr Ile Pro Arg Gln Tyr Thr Cys Phe His Val Arg Lys Arg Ser Gly					
	100	105	110		
Gly Phe Arg Tyr Ile Ser Ala Pro Ala Gly Asp Phe Arg Ser Met Gln					
	115	120	125		
Gln Thr Ile Tyr His Arg Ile Leu Leu Leu Ala Asn Ile His Pro Ala					
	130	135	140		
Val Thr Gly Phe Cys Pro Gly Lys Ser Val Ser Asp Asn Ala Arg Val					
	145	150	155	160	
His Leu Gly Arg Lys Asn Val Leu Lys Val Asp Leu His Asp Phe Phe					
	165	170	175		
Pro Ser Ile Arg Ser Pro Arg Val Arg Ala Ala Phe Arg Glu Met Gly					
	180	185	190		
Tyr Ser Arg Pro Ile Ala Lys Val Leu Ala Glu Leu Cys Cys Leu Arg					
	195	200	205		
Cys Phe Leu Pro Gln Gly Ala Pro Thr Ser Pro Ala Leu Ser Asn Ile					
	210	215	220		
Ile Ala Tyr Pro Met Asp Lys Lys Met Met Ala Leu Ala Gly Glu Tyr					
	225	230	235	240	
Gly Leu Val Tyr Thr Arg Tyr Ala Asp Asp Leu Thr Phe Ser Gly Asp					
	245	250	255		
Tyr Leu Pro Lys Asp Glu Val Leu Val Arg Ile His Arg Ile Ile Arg					
	260	265	270		
Glu Glu Gly Phe His Asp Glu Arg Gln Lys Asp Pro Leu Leu Val					
	275	280	285		

<210> 8537

<211> 838

<212> PRT

<213> B.fragilis

<400> 8537

Ser Tyr Ser Leu Arg Phe Ile Ile His Met Ala Lys Lys Lys Ser Asp					
1	5	10	15		
Lys Glu Ala Glu Gln Lys Pro Ala Ser Thr Lys Lys Tyr Val Ala Phe					
	20	25	30		
Phe Arg Asn Glu Thr Ile His Phe Val Ile Gly Leu Val Leu Val Ile					
	35	40	45		
Phe Ser Val Tyr Leu Leu Leu Ala Phe Thr Ser Phe Phe Phe Thr Gly					
	50	55	60		
Ala Ala Asp Gln Ser Ile Ile Asp Ser Gly Asn Ala Gln Asp Leu Ala					
	65	70	75	80	
Ala Val Asn Asn His Val Lys Asn Tyr Ala Gly Ser Arg Gly Ala Gln					
	85	90	95		
Leu Ala Ser Tyr Leu Ile Asn Asp Cys Phe Gly Ile Ser Ser Phe Phe					
	100	105	110		
Ile Leu Ile Tyr Leu Ala Val Ala Gly Leu Lys Leu Met Arg Val Arg					
	115	120	125		
Val Val Arg Leu Trp Lys Trp Phe Ile Gly Cys Ser Leu Leu Leu Ile					
	130	135	140		
Trp Phe Ser Val Phe Leu Gly Phe Val Phe Met Asp His Tyr Gln Asp					
	145	150	155	160	
Ser Phe Ile Tyr Leu Gly Gly Leu His Gly Tyr Asn Ile Ser Asn Trp					
	165	170	175		
Leu Ile Ser Gln Val Gly Ile Pro Gly Val Trp Leu Ile Leu Leu Ala					

Thr Gln Arg Pro Thr Thr Asn Ile Ile Thr Gly Thr Ile Lys Ala Asn
 660 665 670
 Phe Pro Ala Arg Ile Ala Phe Arg Val Ser Ala Met Met Asp Ser Arg
 675 680 685
 Thr Ile Leu Asp Arg Pro Gly Ala Asn Gln Leu Ile Gly Arg Gly Asp
 690 695 700
 Met Leu Phe Leu Gln Gly Ala Asp Pro Val Arg Val Gln Cys Ala Phe
 705 710 715 720
 Ile Asp Thr Pro Glu Val Glu Glu Ile Thr Lys Tyr Ile Ser Arg Gln
 725 730 735
 Gln Gly Tyr Pro Thr Ala Phe Phe Leu Pro Glu Tyr Val Ser Glu Asp
 740 745 750
 Ser Gly Ser Asp Leu Gly Glu Val Asp Met Gly Arg Leu Asp Pro Leu
 755 760 765
 Phe Glu Glu Ala Ala Arg Leu Ile Val Ile His Gln Gln Gly Ser Thr
 770 775 780
 Ser Leu Ile Gln Arg Lys Phe Ser Ile Gly Tyr Asn Arg Ala Gly Arg
 785 790 795 800
 Leu Met Asp Gln Leu Glu Lys Ala Gly Ile Val Gly Pro Ser Gln Gly
 805 810 815
 Ser Lys Ala Arg Asp Val Leu Cys Val Asp Glu Asn Asp Leu Glu Met
 820 825 830
 Arg Leu Asn Asn Ile Gln
 835

<210> 8538
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 8538
 Leu Ile Ile Leu Asn Thr Lys Asn Leu Lys Leu Lys Lys Asp Glu Pro
 1 5 10 15
 Leu Met Met Ile Glu Val Leu Lys Ser Lys Ile His Cys Ala Arg Val
 20 25 30
 Thr Glu Ala Asn Leu Asn Tyr Met Gly Ser Ile Thr Ile Asp Glu Asn
 35 40 45
 Leu Leu Asp Ala Ala Asn Met Ile Ala Gly Glu Lys Val Tyr Ile Ala
 50 55 60
 Asp Asn Asn Asn Gly Glu Arg Phe Glu Thr Tyr Ile Ile Lys Gly Glu
 65 70 75 80
 Arg Gly Ser Gly Lys Ile Cys Leu Asn Gly Ala Ala Ala Arg Lys Val
 85 90 95
 Gln Pro Asp Asp Ile Val Ile Ile Met Ser Tyr Ala Leu Met Asp Phe
 100 105 110
 Glu Glu Ala Lys Ser Phe Lys Pro Thr Val Ile Phe Pro Asp Pro Ala
 115 120 125
 Thr Asn Ser Val Val Lys
 130

<210> 8539
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 8539
 Phe Thr Ile Phe Leu Leu Tyr Met Val Asn Tyr Gly Leu Phe Cys Thr
 1 5 10 15
 Val Phe Arg Thr Thr Lys Asn His Lys Pro Ile Lys Met Lys Val Ile


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      20              25              30
His Thr Ile Lys Asp Leu Gln Ala Glu Leu Ser Val Leu Lys Ala Gln
  35              40              45
Gly Lys Lys Val Gly Leu Val Pro Thr Met Gly Ala Leu His Ala Gly
  50              55              60
His Ala Ser Leu Val Lys Arg Ser Val Asn Glu Asn Glu Val Thr Val
  65              70              75              80
Val Ser Val Phe Val Asn Pro Thr Gln Phe Asn Asp Lys Asn Asp Leu
      85              90              95
Val Lys Tyr Pro Arg Thr Leu Asp Ala Asp Cys Lys Leu Leu Glu Ala
      100              105              110
Cys Gly Ala Thr Tyr Ala Phe Ala Pro Ser Val Glu Glu Met Tyr Pro
      115              120              125
Glu Pro Asp Thr Arg Gln Phe Ser Tyr Ala Pro Leu Asp Thr Val Met
      130              135              140
Glu Gly Ala Phe Arg Pro Gly His Phe Asn Gly Val Cys Gln Ile Val
  145              150              155              160
Ser Lys Leu Phe Glu Ala Val Lys Pro His Arg Ala Tyr Phe Gly Glu
      165              170              175
Lys Asp Phe Gln Gln Leu Ala Ile Ile Arg Glu Met Val Arg Gln Met
      180              185              190
Gln Phe Asp Leu Glu Ile Val Gly Cys Pro Ile Val Arg Glu Glu Asp
      195              200              205
Gly Leu Ala Leu Ser Ser Arg Asn Ala Arg Leu Ser Ala Glu Glu Arg
      210              215              220
Glu Asn Ala Leu Lys Ile Ser Gln Thr Leu Phe Lys Ser Arg Thr Phe
  225              230              235              240
Ala Ala Thr His Thr Val Ser Glu Thr Leu Lys Phe Val Glu Asp Ala
      245              250              255
Ile Ala Ala Val Pro Gly Leu Arg Leu Glu Tyr Phe Glu Ile Val Asp
      260              265              270
Gly Asn Thr Leu Gln Lys Val Asp Asn Trp Asn Gln Thr Ser Tyr Val
      275              280              285
Val Gly Cys Ile Thr Val Phe Cys Gly Asp Val Arg Leu Ile Asp Asn
      290              295              300
Ile Lys Tyr Lys Glu Ser
  305              310

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<210> 8540

<211> 288

<212> PRT

<213> B.fragilis

<400> 8540

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Asn Arg Leu Ser Leu Leu Arg Ser Ile Ile Cys Asn Met Cys Asn Leu
  1              5              10              15
Ser Asp Glu Ser Lys Gln Phe Glu Met Thr Pro Pro Ser Ser Asn Leu
      20              25              30
Ser Ser Leu Phe Pro Thr Gly Arg Ala Val Arg Asn Pro Leu Gly Lys
      35              40              45
Val Tyr Phe Val Val Ile Leu Lys Gly Lys Ala Met Val Arg Ile Asp
      50              55              60
Gly Lys Ser Met Leu Leu Pro Glu Arg Thr Phe Leu Phe Leu Pro Pro
  65              70              75              80
Gly His Leu Leu Leu Arg Leu Ser Cys Thr Gln Asp Phe Leu Phe Gln
      85              90              95
Tyr Leu Ser Phe Ser Phe Asp Phe Leu Ser Asp Phe Pro Leu Leu Leu
      100              105              110
Lys Ala Asp Ile Ser Asn Gln Val Thr Asn Ala Pro Cys Leu Pro Met

```

115	120	125
Ser Pro Glu Asp Phe Ser	Leu Ile Lys Met Tyr Tyr	His Phe Ile Tyr
130	135	140
His Arg Tyr Ser Asp Ala	Glu Cys Pro Ser Glu Val	Ile Lys Gly Met
145	150	155
Leu Phe Ser Leu Val Leu	Glu Val Cys Arg Met Tyr	Ser Gly Arg Asn
165	170	175
Ile Ser Val Glu Met Ser	Arg Gln Asp Lys Leu Val	Asp Gly Phe Phe
180	185	190
Ser Leu Leu His Lys Tyr	Cys Thr Gln Glu Arg Met	Ala Ala Phe Tyr
195	200	205
Ala Ser Arg Leu Cys Ile	Ser Asp Lys Tyr Leu Met	Arg Ser Ile Lys
210	215	220
Lys Gln Thr Gly Gln Thr	Phe His Tyr Trp Met Ala	Asp Phe Ile Leu
225	230	235
Arg Glu Ala Lys Leu Met	Leu Arg Ser Thr Asp Leu	Ser Val Thr Glu
245	250	255
Ile Ala Asp Lys Leu Ser	Phe Pro Asn Ser Ser Ser	Phe Ala Arg Phe
260	265	270
Phe Arg Lys Tyr Thr Gly	Phe Ser Pro Val Gln Phe	Arg Asn Glu Ala
275	280	285

<210> 8541

<211> 323

<212> PRT

<213> B.fragilis

<400> 8541

Lys Thr Val Ser Leu His	Pro Glu Lys Met Asn Ile	Ile Ile Met Asn Ile
1	5	10
Asn Ser Lys Ala Lys Gly	Phe Val Cys Gly Ala Val	Ala Ala Ala Thr
20	25	30
Tyr Gly Met Asn Pro Leu	Phe Thr Leu Pro Leu Tyr	Lys Glu Gly Met
35	40	45
Ser Val Asp Ser Val Leu	Phe Tyr Arg Tyr Gly Phe	Ala Val Leu Ile
50	55	60
Leu Gly Ile Leu Met Lys	Val Gln Gly Gln Ser Phe	Ala Leu Lys Lys
65	70	75
Asn Glu Val Leu Pro Leu	Ile Val Gly Gly Leu Leu	Phe Ser Ala Ser
85	90	95
Ser Leu Leu Leu Phe Leu	Ser Tyr Lys His Met Asp	Ala Gly Ile Ala
100	105	110
Ser Thr Ile Leu Phe Val	Tyr Pro Val Met Val Ala	Leu Ile Met Phe
115	120	125
Leu Phe Phe His Glu Lys	Val Ser Leu Leu Thr Val	Phe Cys Ile Leu
130	135	140
Leu Ala Leu Ser Gly Ile	Gly Leu Leu Tyr Lys Gly	Glu Gly Gly Glu
145	150	155
Thr Leu Ser Leu Val Gly	Met Leu Leu Val Ile Leu	Ser Ser Leu Ser
165	170	175
Tyr Ala Val Tyr Ile Val	Gly Val Asn His Ser Thr	Leu Lys Leu Met
180	185	190
Ser Thr Ala Lys Leu Thr	Phe Tyr Ala Leu Leu Phe	Gly Leu Ser Ile
195	200	205
Tyr Ile Val Arg Leu Asn	Phe Cys Ser Asp Leu Gln	Ala Val Pro Ser
210	215	220
Leu Pro Ala Trp Gly Asn	Ile Leu Ala Met Ala Phe	Leu Pro Thr Val
225	230	235
Ile Ser Leu Val Cys Thr	Ala Val Ser Ile His Thr	Ile Gly Ser Thr

			245					250				255			
Ser	Thr	Ala	Ile	Leu	Gly	Ala	Leu	Glu	Pro	Val	Thr	Ala	Leu	Phe	Phe
			260					265					270		
Gly	Val	Met	Ile	Phe	Gly	Glu	Arg	Leu	Thr	Pro	Arg	Leu	Met	Leu	Gly
		275					280					285			
Ile	Leu	Met	Ile	Leu	Val	Ala	Val	Thr	Phe	Ile	Val	Val	Gly	Lys	Pro
	290					295					300				
Leu	Met	Thr	Phe	Leu	Lys	Glu	Glu	Val	Ala	Gly	Gly	Met	Lys	Arg	Lys
305					310					315					320
Leu	Thr	Arg													

<210> 8542

<211> 269

<212> PRT

<213> B.fragilis

<400> 8542

Ser	Met	Gln	Ser	Phe	Arg	Val	Ile	Lys	Pro	Thr	Ala	Ala	Leu	Val	Pro
1			5					10					15		
Tyr	Val	Arg	His	Tyr	Trp	Val	Leu	Ser	Asp	Asp	Ala	Leu	Ala	Pro	Val
		20						25				30			
Ser	Glu	Arg	Thr	Leu	Pro	Val	Gly	Cys	Val	Gln	Met	Val	Phe	His	Arg
	35						40					45			
Gly	Arg	Gln	Leu	Phe	Ser	Leu	Thr	Glu	Gly	Arg	Leu	Gln	Pro	Ser	Ser
	50					55					60				
Phe	Ile	Ser	Gly	Gln	Ala	Phe	Gly	Tyr	Ser	Asp	Val	Glu	Ser	Thr	Gly
65				70						75					80
Met	Leu	Glu	Met	Ile	Val	Val	Val	Phe	Gln	Pro	Phe	Ala	Ala	Lys	Ala
				85					90					95	
Phe	Leu	His	Met	Pro	Val	Ser	Glu	Phe	Arg	Gly	Met	Asn	Val	Asn	Thr
			100					105					110		
Glu	Glu	Thr	Gly	Asp	Pro	Leu	Leu	Val	Asp	Leu	Gly	Arg	Arg	Ile	Ala
	115					120						125			
Asp	Met	Pro	Asp	Arg	Val	Ala	Cys	Ile	Arg	Leu	Ile	Glu	Glu	Phe	Leu
	130					135					140				
Leu	Ser	Arg	Leu	Tyr	Ala	Phe	Pro	Glu	Tyr	Asn	Leu	Lys	Arg	Val	Ser
145				150						155					160
Thr	Val	Trp	Glu	Ala	Val	Asn	Leu	His	Pro	His	Ile	Arg	Thr	Ala	Gln
				165					170					175	
Leu	Ala	Asp	Val	Ala	Cys	Leu	Ser	Asn	Lys	Gln	Phe	Gly	Arg	Val	Phe
		180						185					190		
Ala	Glu	Tyr	Val	Gly	Ala	Thr	Pro	Lys	Glu	Phe	Leu	Arg	Ile	Val	Arg
	195						200					205			
Ile	Gln	Arg	Ala	Leu	Tyr	Thr	Leu	Gln	Cys	Gln	Pro	Gly	Ile	Ser	Phe
	210					215						220			
Ala	Gln	Leu	Ala	Tyr	Glu	Cys	Gly	Phe	Phe	Asp	Gln	Ser	His	Met	Ile
225				230						235					240
Lys	Glu	Phe	Lys	Leu	Phe	Ser	Gly	Tyr	Thr	Pro	Ala	Glu	Tyr	Leu	Ala
			245						250					255	
Val	Cys	Ala	Pro	Tyr	Ser	Asp	Tyr	Phe	Ser	Val	Glu	Glu			
			260					265							

<210> 8543

<211> 165

<212> PRT

<213> B.fragilis

<400> 8543

Glu Ile Arg Ser Met Lys Gln Gln Glu Thr Asn Pro Asp Ser Leu Ile
 1 5 10 15
 Glu Asn Tyr Leu Pro Ala Asp Tyr Tyr Asp Ser Phe Ser Lys Glu Leu
 20 25 30
 His Asn Lys Asn Ala Ile Ser Thr Asp Glu Phe Ala Asp Ile Val Phe
 35 40 45
 Asn Gln Leu Pro Ser Trp Ile Ile Arg Leu Leu Lys Val Arg Asn Cys
 50 55 60
 Ile Val Lys Pro Phe Gly Leu Asn Thr Asn Arg Arg Ile Thr Asp Met
 65 70 75 80
 Glu Cys Glu Arg Asn Gln His Glu Ile Ile Phe Gly Met Ser Asp Lys
 85 90 95
 His Leu Thr Phe Tyr Val Ser Leu Trp Cys Lys Val Ser Glu Ala Asn
 100 105 110
 Ser Gln Thr Leu Arg Ile Thr Thr Ile Val Lys Tyr His Asn Arg Leu
 115 120 125
 Gly Lys Leu Tyr Phe Phe Val Val Arg Pro Phe His Lys Val Ile Ile
 130 135 140
 Arg Ser Leu Leu Glu Arg Val Glu Lys Arg Tyr Lys Leu Ile Ser Leu
 145 150 155 160
 Glu Arg Glu Ala Ser
 165

<210> 8544

<211> 291

<212> PRT

<213> B.fragilis

<400> 8544

Lys Ile Asp Pro Asn Ser Phe Ser Tyr Leu Cys Val Leu Trp Arg His
 1 5 10 15
 Lys Ser Asp Asn Tyr Lys Ala Ala Asn Asp Arg Asn Thr Glu Lys Gln
 20 25 30
 Lys Ser Ala Tyr Arg Met Asn Thr Pro Leu Gln Pro Tyr Arg Ile Gly
 35 40 45
 Asn Ser Thr Leu Leu Ser Asn Arg Lys Thr Thr Ala Phe Leu Cys Ser
 50 55 60
 Arg Gln Val Pro Glu Asn Lys Ile Pro Pro Ile Tyr Asn Trp Ile Asn
 65 70 75 80
 Gln Leu Ser Pro Glu Lys Asp Cys Ile Leu Cys Gly Asn His Ser Arg
 85 90 95
 Met Glu Gln Glu Val Phe Asn Ile Leu Leu Glu Lys Lys Ile Pro Val
 100 105 110
 Ile Leu Ala Leu Ala Glu Gly Met Lys Lys Glu Trp Asp Asn Lys Val
 115 120 125
 Lys Leu Ala Leu Glu Glu Asn Arg Met Leu Ile Val Thr Thr Cys Asp
 130 135 140
 Asp Lys Ile His Arg Ile Asn His Gln Ser Ala Tyr Asp Arg Asn Glu
 145 150 155 160
 Thr Ile Leu Ser Leu Ala Asp Asp Ile Ile Ile Gly Tyr Cys Thr Pro
 165 170 175
 Gly Gly Asn Ile Asp Arg Gln Thr Lys Gly Lys Thr Asn Ile Thr Tyr
 180 185 190
 Leu Gln Lys Ser Asp Tyr Leu Ser Thr Glu Leu Ile Phe Thr Asp Lys
 195 200 205
 Val Ala Asp Ser Asp Val Met Ile Tyr Arg Thr Ser Thr Lys Lys Gly
 210 215 220
 Lys Ile Phe Leu Asp Ile Lys Gln Glu Ser Ser Gly Gln Glu Tyr Leu
 225 230 235 240

Ala Phe Lys Ala Tyr Thr Asn Phe Val Asp Val Val Pro Gln Lys Ser
 355 360 365
 Arg Leu Arg Leu Ser Leu Asn Val Ala Phe Ala Asp Ile Leu Asp Pro
 370 375 380
 Lys Gly Leu Cys Lys Asp Val Ser Asn Leu Gly Arg Trp Gly Asn Gly
 385 390 395 400
 Asp Val Glu Val Gly Ile Ser Asn Met Asn Glu Leu Asp Asp Ile Met
 405 410 415
 Glu Leu Ile Gln Gln Ala Phe Asp Lys Gln Met Glu Ala Asn
 420 425 430

<210> 8546

<211> 283

<212> PRT

<213> B.fragilis

<400> 8546

Ile Leu Ser Pro Met Ile Glu Ala Pro Glu Ala Arg Leu Leu Cys Glu
 1 5 10 15
 Gln Leu Asn Lys Thr Val Cys Gly Lys Arg Ile Thr Asp Val Phe Ala
 20 25 30
 Gln Tyr Thr Pro His Lys Phe Ala Trp Phe Tyr Gly Lys Pro Glu Glu
 35 40 45
 Cys Ala Glu Arg Leu Val Gly Lys Thr Ile Asp Arg Ala Cys Pro Gln
 50 55 60
 Gly Gly Met Val Glu Leu Thr Ala Gly Asp Thr Met Leu Val Leu Thr
 65 70 75 80
 Asp Gly Val Asn Leu Arg Tyr Phe Glu Pro Gly Ala Lys Leu Pro Ser
 85 90 95
 Lys His Gln Leu Leu Val Ala Phe Asp Asp Glu Ser Cys Leu Leu Ala
 100 105 110
 Ser Val Arg Met Tyr Gly Ala Leu Leu Cys Phe Thr Gln Gly His Phe
 115 120 125
 Asp Ala Pro Leu Ala Ala Tyr Tyr Glu Thr Ala Arg Thr Lys Pro Gln
 130 135 140
 Val Met Thr Asp Ala Phe Asp Lys Glu Tyr Phe Leu Gly Leu Val Asn
 145 150 155 160
 Ala Pro Glu Ala Gln Lys Lys Pro Ala Lys Ala Phe Leu Ala Thr Glu
 165 170 175
 Gln Thr Ile Pro Gly Leu Gly Asn Gly Val Leu Gln Asp Ile Leu Tyr
 180 185 190
 His Ala His Ile His Pro Lys Thr Lys Ile Asp Lys Leu Gly Ala Lys
 195 200 205
 Glu Lys Glu Lys Met Tyr Glu Gln Val Lys Glu Thr Leu Gln Asp Ile
 210 215 220
 Tyr His Leu Gly Gly Arg Ser Thr Glu Thr Asp Leu Phe Gly Val Pro
 225 230 235 240
 Gly Gln Tyr Val Ala Ser Leu Ser Lys Asp Thr Ala Gly His Val Cys
 245 250 255
 Pro Lys Cys Gly Glu Thr Ile Val Lys Glu Asn Tyr Leu Gly Gly Ser
 260 265 270
 Ile Tyr Tyr Cys Arg Gly Cys Gln Val Met Lys
 275 280

<210> 8547

<211> 338

<212> PRT

<213> B.fragilis

<400> 8547

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Ile Ser Ser Pro Arg Val Lys Thr Phe Ser Trp Glu Leu Asp Leu Trp
1          5          10          15
Gly Asn Leu Arg Trp Ala Arg Ser Ala Ser Ile Ala Glu Tyr Leu Gln
          20          25          30
Ser Val Glu Ala Gln Arg Ala Leu Arg Met Thr Ile Ile Ala Glu Val
          35          40          45
Ala Gln Ala Tyr Tyr Glu Leu Val Ala Leu Asp Thr Glu Leu Asp Ile
          50          55          60
Val Arg Gln Thr Leu Lys Ala Arg Glu Glu Gly Met Arg Leu Ala Arg
65          70          75          80
Ile Arg Phe Glu Gly Gly Leu Thr Ser Glu Thr Ser Tyr Arg Gln Ser
          85          90          95
Gln Val Glu Leu Ala Arg Thr Ala Thr Leu Val Pro Asp Leu Glu Arg
          100          105          110
Lys Ile Ser Leu Lys Glu Asn Asp Ile Ala Phe Leu Ala Gly Glu Tyr
          115          120          125
Pro Asn Lys Ile Thr Arg Ser Arg Leu Leu Gln Glu Phe Asn Phe Pro
          130          135          140
Gln Glu Leu Pro Val Gly Leu Pro Ser Gly Leu Leu Glu Arg Arg Pro
145          150          155          160
Asp Ile Arg Gln Ala Glu Gln Lys Leu Ile Ala Ala Asn Ala Arg Val
          165          170          175
Gly Val Ala Tyr Thr Asn Met Phe Pro Arg Ile Ser Leu Thr Gly Arg
          180          185          190
Val Gly Ser Glu Ser Thr Ala Leu Ser Glu Leu Leu Lys Ser Pro Tyr
          195          200          205
Ser Ile Met Glu Gly Ala Leu Leu Thr Pro Ile Phe Gly Trp Gly Lys
          210          215          220
Asn Arg Ala Ala Leu Lys Ala Lys Lys Ala Ala Tyr Glu Ala Glu Val
225          230          235          240
His Ser Tyr Glu Lys Ala Val Leu Thr Ala Phe Lys Glu Thr Arg Asn
          245          250          255
Ser Ile Val Asn Phe Asn Lys Ile Lys Glu Val Tyr Asp Leu Arg Ala
          260          265          270
Lys Leu Glu Arg Ser Ala Lys Ser Tyr Val Asp Leu Ala Gln Leu Gln
          275          280          285
Tyr Ile Asn Gly Val Thr Asn Tyr Leu Asp Val Leu Asp Ala Gln Arg
          290          295          300
Gly Tyr Phe Asp Ala Gln Ile Gly Leu Ser Asn Ala Ile Arg Asp Glu
305          310          315          320
Leu Ile Ala Val Val Gln Val Tyr Lys Ala Leu Gly Gly Gly Trp Gln
          325          330          335
Val Gln

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<210> 8548

<211> 560

<212> PRT

<213> B.fragilis

<400> 8548

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Val Arg Ile Thr Asn Thr Phe Lys Tyr Lys Ile Lys Lys Met Thr Lys
1          5          10          15
Ser Ala Leu Gln Ile Ala Arg Ala Ala Tyr Gln Pro Lys Leu Pro Lys
          20          25          30
Ala Leu Lys Gly Ser Val Lys Ala Val Glu Gly Ala Ala Thr Gln Ser
          35          40          45
Val Ala Asp Gln Glu Ala Ile Gln Lys Leu Phe Pro Asn Thr Tyr Gly

```

50	55	60
Met Pro Leu Ile Lys Phe Glu Glu Gly Glu Ala Ile Gln Leu Pro Ala		
65	70	75
Met Asn Val Gly Val Ile Leu Ser Gly Gly Gln Ala Pro Gly Gly His		80
	85	90
Asn Val Ile Ser Gly Leu Phe Asp Gly Ile Lys Thr Leu Asn Lys Asp		95
	100	105
Asn Lys Leu Tyr Gly Phe Ile Leu Gly Pro Gly Gly Leu Val Asp His		110
	115	120
Asn Tyr Met Glu Leu Thr Ala Asp Ile Ile Asp Glu Tyr Arg Asn Thr		125
	130	135
Gly Gly Phe Asp Ile Ile Gly Ser Gly Arg Thr Lys Leu Glu Thr Pro		140
145	150	155
Glu Gln Phe Glu Lys Gly Leu Glu Ile Ile Asn Lys Leu Gly Ile Lys		160
	165	170
Ala Leu Val Ile Ile Gly Gly Asp Asp Ser Asn Thr Asn Ala Cys Val		175
	180	185
Leu Ala Glu Tyr Tyr Ala Ala Lys Asn Ala Gly Val Gln Val Ile Gly		190
	195	200
Cys Pro Lys Thr Ile Asp Gly Asp Leu Lys Asn Glu Met Ile Glu Thr		205
	210	215
Ser Phe Gly Phe Asp Thr Ala Cys Lys Val Tyr Ser Glu Val Ile Gly		220
225	230	235
Asn Ile Gln Arg Asp Cys Asn Ser Ala Arg Lys Tyr Trp His Phe Ile		240
	245	250
Lys Leu Met Gly Arg Ser Ala Ser His Ile Ala Leu Glu Cys Ala Leu		255
	260	265
Gln Val Gln Pro Asn Val Cys Ile Ile Ser Glu Glu Val Glu Ala Lys		270
	275	280
Asp Met Ser Leu Asp Asp Val Val Thr Tyr Ile Ala Lys Ile Val Ala		285
	290	295
Asp Arg Ala Ala Gln Gly Asn Asn Phe Gly Thr Val Leu Ile Pro Glu		300
305	310	315
Gly Leu Val Glu Phe Ile Pro Ala Met Lys Arg Leu Ile Ala Glu Leu		320
	325	330
Asn Asp Phe Leu Ala Ala Asn Ala Val Glu Phe Ala Asn Ile Lys Arg		335
	340	345
Ser Arg Gln Arg Glu Tyr Ile Ile Ser Lys Leu Ser Lys Glu Asn Ala		350
	355	360
Glu Ile Tyr Ala Ser Leu Pro Glu Gly Val Ala Arg Gln Leu Ser Leu		365
	370	375
Asp Arg Asp Pro His Gly Asn Val Gln Val Ser Leu Ile Glu Thr Glu		380
385	390	395
Lys Leu Leu Ser Glu Met Val Gly Thr Lys Leu Ala Gln Trp Lys Glu		400
	405	410
Glu Gly Lys Tyr Val Gly Lys Phe Ala Ala Gln His His Phe Phe Gly		415
	420	425
Tyr Glu Gly Arg Cys Ala Ala Pro Ser Asn Tyr Asp Ala Asp Tyr Cys		430
	435	440
Tyr Ser Leu Gly Tyr Thr Ala Ser Met Leu Ile Ala Asn Gly Lys Thr		445
	450	455
Gly Tyr Met Ser Ser Val Arg Asn Thr Thr Ala Pro Ala Ala Glu Trp		460
465	470	475
Ile Ala Gly Gly Val Pro Ile Thr Met Met Asn Met Glu Arg Arg		480
	485	490
His Gly Glu Met Lys Pro Val Ile Gln Lys Ala Leu Val Lys Leu Asp		495
	500	505
Gly Lys Pro Phe Leu Thr Phe Ala Ala Lys Arg Asp Gln Trp Ala Leu		510
	515	520
		525

Asn	Thr	Asp	Tyr	Val	Tyr	Pro	Gly	Pro	Ile	Gln	Tyr	Phe	Gly	Pro	Thr
530						535					540				
Glu	Val	Cys	Asp	Gln	Pro	Thr	Lys	Thr	Leu	Gln	Leu	Glu	Gln	Ala	Lys
545					550					555					560

<210> 8549

<211> 968

<212> PRT

<213> B.fragilis

<400> 8549

Lys	Gly	Asn	Thr	Ser	Glu	Val	Phe	Tyr	Glu	Asn	Lys	Ile	Cys	Ile	Ser
1				5					10					15	
Phe	Val	Leu	Phe	Ile	Leu	Cys	Leu	Ile	Tyr	Pro	Asn	Asn	Met	Lys	Lys
			20					25					30		
His	Leu	Ile	Leu	Met	Ile	Ser	Ala	Ala	Ile	Ile	Pro	Leu	Leu	Leu	Tyr
		35					40					45			
Ala	Cys	Ser	Ala	Glu	Glu	Glu	Arg	Ala	Leu	Thr	Ser	Thr	Thr	Leu	Glu
	50					55					60				
Val	Ala	Gln	Ser	Ala	Ile	Asp	Phe	Lys	Ser	Asp	Ala	Gly	Thr	Arg	Asp
65					70					75					80
Ile	Ala	Ile	Val	Thr	Asn	Ala	Asp	His	Trp	Thr	Ala	Arg	Ser	Asp	Lys
				85					90					95	
Asp	Trp	Cys	Ser	Val	Ala	Val	Asn	Glu	Ser	Thr	Leu	Thr	Val	Asn	Val
			100					105					110		
Ser	Gly	Tyr	Asp	Gly	Lys	Glu	Thr	Arg	Glu	Ala	Val	Ile	Lys	Val	Thr
		115					120					125			
Ala	Asp	Gly	Leu	Ala	Glu	Thr	Val	Asn	Val	Arg	Gln	Leu	Gly	Ser	Glu
	130					135					140				
Pro	Ala	Ile	Leu	Ile	Ser	Gln	Gln	Ile	Phe	Thr	Val	Glu	Ala	Ser	Gly
145					150					155					160
Ser	Asp	Ile	Ala	Phe	Asp	Val	Thr	Thr	Asn	Val	Ser	Val	Thr	Ile	Thr
				165					170					175	
Leu	Pro	Glu	Trp	Ile	Lys	Glu	Lys	Pro	Ala	Gly	Thr	Arg	Ala	Ser	Glu
			180					185					190		
Met	Val	Thr	Thr	Thr	His	Asn	Tyr	Ile	Val	Thr	Ala	Asn	Pro	Glu	Asp
	195						200					205			
Ser	Glu	Arg	Thr	Gly	Asn	Ile	Thr	Val	Lys	Glu	Val	Gly	Gly	Glu	Leu
	210					215					220				
Glu	Ala	Leu	Val	Ser	Val	Thr	Gln	Lys	Gly	Leu	Gly	Glu	Tyr	Glu	Ser
225					230					235					240
Gly	Asn	Leu	Glu	Gly	Ile	Lys	Asp	Asp	Ile	Lys	Val	Pro	Val	Glu	Ser
				245					250					255	
Gly	Glu	Ala	Ser	Ser	Phe	Gln	Gly	Gly	Ser	Asn	Ile	Asp	Lys	Ser	Phe
			260				265						270		
Asp	Gly	Asp	Met	Ser	Thr	Ile	Tyr	His	Ser	Asn	Trp	Asn	Asn	Ala	Gly
	275						280					285			
Asp	His	Tyr	Phe	Pro	Ile	Thr	Leu	Thr	Tyr	Asn	Phe	Ala	Ala	Gly	Ser
	290					295					300				
Asp	Met	Asp	Tyr	Leu	Ile	Tyr	Tyr	Pro	Arg	Thr	Ser	Gly	Pro	Asn	Gly
305					310					315					320
Asn	Phe	Lys	Glu	Val	Glu	Ile	Arg	Val	Lys	Ser	Asn	Ala	Asn	Thr	Arg
				325					330					335	
Gly	Thr	Asp	Glu	Trp	Asn	Thr	Val	Met	Thr	Lys	Asn	Phe	Gly	Gly	Thr
			340					345					350		
Asn	Ala	Ala	Val	Arg	Val	Asn	Phe	Pro	Lys	Ala	Gln	Ile	Gly	Val	Thr
		355					360					365			
Ser	Val	Gln	Phe	Ile	Val	Lys	Ser	Gly	Ser	Gly	Asp	Gly	Gln	Gly	Phe
	370					375					380				

Ala	Ala	Cys	Ala	Glu	Met	Glu	Phe	Tyr	Lys	Lys	Asn	Pro	Asp	Ala	Phe
385					390					395					400
Asp	Pro	Leu	Thr	Leu	Phe	Thr	Asp	Gly	Thr	Cys	Ser	Glu	Leu	Lys	Pro
				405					410					415	
Gly	Leu	Thr	Asp	Glu	Glu	Ile	Glu	Asn	Cys	Pro	Tyr	Ser	Phe	Tyr	Lys
			420					425					430		
Asn	Ile	Ala	Tyr	Tyr	Met	Lys	Gln	Gly	Lys	Tyr	Pro	Ala	Glu	Phe	Arg
		435					440					445			
Ile	Gln	Glu	Tyr	Lys	Ala	Trp	Pro	His	Pro	Asp	Ala	Gln	Ser	Glu	Thr
	450					455					460				
His	Lys	Thr	Ser	Pro	Tyr	Ser	Leu	Arg	Asp	Asn	Pro	Thr	Gly	Ile	Ser
465					470					475					480
Val	Lys	Asp	Gly	Glu	Gln	Leu	Met	Ile	Phe	Val	Gly	Asp	Thr	His	Gly
			485						490					495	
Gln	Thr	Val	Ser	Ala	Val	Ile	Gln	Asn	Leu	Asp	Val	Pro	Gly	Gly	Asp
			500					505					510		
Gly	Phe	Gly	Gly	Thr	Ser	Tyr	Pro	Leu	Ser	Glu	Gly	Ala	Asn	Lys	Ile
	515						520					525			
Thr	Ala	Arg	Asn	Lys	Gly	Leu	Met	Tyr	Ile	Leu	Tyr	His	Thr	Pro	Asp
	530					535					540				
Tyr	Glu	Thr	Ala	Gln	Pro	Val	Lys	Ile	His	Ile	Ala	Ser	Gly	Gln	Val
545					550					555					560
Asn	Gly	Tyr	Phe	Asp	Val	Ala	Lys	His	Gln	Ala	Ser	Asp	Trp	Asn	Lys
			565						570					575	
Leu	Leu	Ser	Asn	Ala	Val	Asp	Lys	Tyr	Phe	Asp	Val	Val	Gly	His	Tyr
			580					585					590		
Ala	His	Leu	Thr	Phe	Pro	Thr	Glu	Arg	Phe	Arg	Thr	His	Thr	Pro	Asp
	595						600					605			
Gly	Lys	Ala	Leu	Ile	Asp	Ala	Tyr	Asp	Gln	Ile	Val	Asn	Ser	Glu	Met
	610					615					620				
Glu	Leu	Met	Gly	Leu	Tyr	Lys	Tyr	Asn	Lys	Leu	Phe	Lys	Asn	Arg	Met
625					630					635					640
Tyr	Leu	His	Val	Met	Tyr	Thr	Ser	Tyr	Met	Tyr	Ala	Thr	Ser	Tyr	His
			645						650					655	
Thr	Ala	Tyr	Asn	Asp	Gly	Thr	Leu	Ala	Glu	Leu	Cys	Asn	Val	Asp	Lys
			660					665					670		
Leu	Lys	Thr	Ser	Ala	Cys	Trp	Gly	Pro	Ala	His	Glu	Ile	Gly	His	Cys
	675						680					685			
Asn	Gln	Thr	Arg	Pro	Gly	Leu	Lys	Trp	Leu	Gly	Thr	Thr	Glu	Val	Thr
	690					695					700				
Asn	Asn	Ile	Met	Ser	Glu	Tyr	Ile	Gln	Thr	Thr	Ile	Phe	Gly	Gln	Pro
705					710					715					720
Ser	Arg	Leu	Gln	Thr	Glu	Asp	Met	Gly	Asp	Gly	Ser	Arg	Asn	Arg	Tyr
			725						730					735	
Ser	Lys	Ala	Trp	Thr	Gln	Ile	Ile	Ala	Ala	Gly	Ala	Pro	His	Gly	Asn
			740					745					750		
Phe	Gly	Ser	Asp	Ser	Asp	Val	Phe	Cys	Lys	Leu	Val	Pro	Phe	Trp	Gln
	755						760					765			
Leu	Glu	Leu	Tyr	Phe	Gly	Lys	Val	Leu	Gly	Arg	Thr	Pro	Leu	Gln	Gln
	770					775					780				
Ser	Asp	Lys	Gly	Gly	Phe	Tyr	Pro	Asp	Val	Tyr	Glu	Tyr	Ile	Arg	Thr
785					790					795					800
His	Asp	Asn	Leu	Arg	Thr	Ala	Gly	Glu	Gln	Gln	Thr	Glu	Phe	Val	Tyr
			805						810					815	
Ile	Cys	Ser	Leu	Ile	Ala	Lys	Ala	Asn	Leu	Leu	Asp	Phe	Phe	Thr	Lys
			820					825					830		
Trp	Gly	Phe	Leu	Thr	Pro	Val	Asp	Ile	Thr	Val	Asp	Asp	Tyr	Gly	Thr
	835						840					845			
Gly	Lys	Leu	Thr	Val	Thr	Gln	Ala	Arg	Ile	Asp	Glu	Ile	Arg	Ser	Arg

850		855		860
Val Glu Ala Leu Gly Tyr	Pro Lys Pro Asp	Val Ala Leu Glu Tyr Ile		
865	870	875		880
Thr Asp Asn Ser	Val Glu Leu Tyr Lys Asp Lys	Pro Gly Ile Val Ala		
	885	890		895
Gly Thr Ala Thr Arg Ser Gly Ser Thr Phe Thr Met Thr Asn Trp Lys				
	900	905		910
Asn Val Ala Ala Tyr Glu Val Val Asp Glu Thr Gly Lys Lys Val Cys				
	915	920		925
Ile Ser Asp Gly Leu Leu Ala Pro Ser Gly Thr Ala Thr Phe Thr Met				
	930	935		940
Lys Thr Ala Trp Lys Asp Gly Phe Lys Val Tyr Ala Val Ser Ala Thr				
945	950	955		960
Gly Ala Arg Thr Ala Val Thr Phe				
	965			

<210> 8550

<211> 176

<212> PRT

<213> B.fragilis

<400> 8550

Thr Ile Lys Thr Ile Tyr Ser Glu Leu Thr Leu Leu Thr Gly Lys Gln		
1	5	10
Tyr Thr Ile Met Asn Leu Leu Ile Ile Ser Asn Ala Asp Ser Cys Arg		
	20	25
Ser Arg Ile Ala Gln Ala Leu Leu Ser Ser Phe Gly Lys Gly Met Lys		
	35	40
Val Tyr Ser Ala Gly Thr Met Pro Ala Ala Glu Ile His Pro Leu Val		
	50	55
Leu Lys Leu Ile Lys Glu Thr Gly Ile Glu Pro Asn Thr Gln Pro Pro		
65	70	75
His Ser Ile Arg Glu Tyr Thr Asn Glu Asn Trp Asp His Ile Ile Val		
	85	90
Leu Ser Gly Thr Ala Asp Asp Ile Arg Asn Leu Phe Arg Lys Glu Val		
	100	105
Lys His Trp Tyr His Leu Pro Phe Glu Asp Leu Phe Ser Thr Ala Ala		
	115	120
Pro Ser Glu Ala Glu Leu Trp Asp Arg Leu Ile Arg Leu Lys Glu Asp		
	130	135
Ile Gln Arg Lys Met Tyr Glu Leu Tyr Arg Asp Asp Leu Arg Glu Gln		
145	150	155
Leu Leu Pro Arg Cys Ser Cys Gly Ala Asn Asp Phe Cys Arg Cys Glu		
	165	170
		175

<210> 8551

<211> 62

<212> PRT

<213> B.fragilis

<400> 8551

Lys Arg Leu Thr Asp Ser Ala Glu Gln Ala Lys Arg Val Arg Ser Ala		
1	5	10
Met Glu Leu Gln Lys Gln Gly Cys Lys Leu Arg Ala Leu Arg Leu Leu		
	20	25
Cys Gly Ile Pro Val Glu Asn Lys Ile Ile Ile Phe Phe His Asn Ser		
	35	40
Glu Lys Asn Thr Lys Phe Ala Thr Leu Leu Ser Ser Asn Tyr		
	50	55
		60

<210> 8552
 <211> 395
 <212> PRT
 <213> B.fragilis

<400> 8552

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Pro Phe Tyr Leu Ser Glu Ser Ile Asp Ser Leu Thr Asn Ala Phe Phe
1      5      10      15
Glu Thr Met Ser Gly Phe Thr Thr Thr Gly Ala Thr Ile Leu Asp Asp
      20      25      30
Ile Glu Ser Leu Ser His Gly Met Leu Phe Trp Arg Ser Leu Thr Gln
      35      40      45
Trp Ile Gly Gly Leu Gly Ile Val Phe Phe Thr Ile Ala Val Leu Pro
      50      55      60
Val Phe Thr Ser Gly Gly Val Gln Leu Phe Ser Ala Glu Ser Thr Gly
65      70      75      80
Val Thr His Asp Arg Thr His Pro Lys Ile Asn Val Met Ala Lys Trp
      85      90      95
Leu Trp Thr Val Tyr Leu Ile Leu Thr Leu Ala Glu Thr Ile Leu Leu
      100      105      110
Met Leu Gly Gly Met Ser Leu Phe Asp Ala Val Cys Gln Ser Phe Ala
      115      120      125
Thr Thr Ala Thr Gly Gly Tyr Ser Thr Lys Gln Ala Ser Ile Ser Tyr
      130      135      140
Trp Asn Ser Pro Phe Ile Glu Tyr Val Val Ala Ile Phe Met Leu Leu
145      150      155      160
Ser Gly Val Asn Phe Ala Leu Phe Leu Met Cys Leu Arg Gly Lys Val
      165      170      175
Ser Arg Leu Leu Arg Asp Glu Glu Leu Arg Trp Phe Leu Gly Ser Val
      180      185      190
Ala Ile Leu Thr Phe Leu Ile Thr Phe Ala Leu Val Phe Gln Asn His
      195      200      205
Tyr Asp Trp Glu Thr Ala Phe Arg Lys Ser Leu Phe Gln Val Ala Thr
      210      215      220
Ala His Thr Ser Cys Gly Phe Ala Thr Asp Asp Tyr Asn Leu Trp Pro
225      230      235      240
Ala Phe Thr Trp Leu Leu Leu Ile Ala Met Leu Ser Gly Gly Cys
      245      250      255
Thr Gly Ser Thr Ser Gly Gly Ile Lys Asn Met Arg Leu Leu Ile Ile
      260      265      270
Ala Arg Ser Ile Arg Asn Glu Phe Lys His Leu Leu His Pro Asn Ala
      275      280      285
Val Leu Pro Val Arg Val Asn Lys Gln Ser Val Ser Pro Ser Ile Val
      290      295      300
Ser Thr Val Gly Met Phe Phe Ala Phe Tyr Leu Ile Ile Val Ile Leu
305      310      315      320
Gly Trp Ala Val Leu Leu Phe Leu Gly Val Gly Phe Ser Glu Ser Ile
      325      330      335
Gly Thr Val Ile Ser Ser Ile Gly Asn Val Gly Pro Gly Leu Gly Ser
      340      345      350
Cys Gly Pro Ala Tyr Ser Trp Asn Gly Leu Pro Asp Ala Ala Lys Trp
      355      360      365
Val Leu Ser Phe Leu Met Leu Ile Gly Arg Leu Glu Leu Phe Ser Val
      370      375      380
Leu Leu Leu Phe Tyr Pro Gly Phe Trp Lys Ser
385      390      395

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<210> 8553

<211> 250
 <212> PRT
 <213> B.fragilis

<400> 8553

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Leu Leu Tyr Phe Leu Cys Asp Ile Ala Leu Val Pro Leu Glu Leu Trp
1          5          10          15
Tyr Ile Ala Ala Ser Val Ala Leu Val Leu Ile Val Gly Gly Leu Trp
          20          25          30
Met His Leu Asn Glu Gly Ser Thr Pro Met Asp Lys Tyr Ile Glu Ile
          35          40          45
Thr Ala Gln Lys Ser Arg Met Tyr Leu Leu Pro Asp Ser Ser Lys Val
          50          55          60
Trp Met Gln Pro Gly Ser Ser Ile Arg Phe Ala Glu Asp Phe Lys Lys
65          70          75          80
His Arg Asn Val Trp Leu Lys Gly Asn Ser Leu Phe Glu Val His Lys
          85          90          95
Asn Met Gly Arg Lys Phe Arg Val Tyr Ile Asp Lys Ala Phe Ile Glu
          100         105         110
Val Lys Gly Thr Cys Phe Leu Ile Lys Gln Asn Asn Pro Ser Ala Asn
          115         120         125
Glu Ile Thr Leu Phe Asn Gly Ser Ile Glu Phe Asn Val Glu Ser Thr
          130         135         140
Gln His Lys Ile Glu Met Lys Pro Leu Gln Glu Leu Val Tyr Asn Pro
145          150         155         160
Ala Asp Ala Gly Thr Gln Leu Arg Gln Ile Glu Asn Ile Glu Trp Gln
          165         170         175
Asn Gly Arg Tyr Asn Phe Thr Gln Phe Asn Leu Glu His Leu Thr Arg
          180         185         190
Ile Ile Asn Gln Met Tyr Gly Ser Arg Ile Ile Ile Ser Asp Lys Val
          195         200         205
Asn Lys Asn Cys Ala Phe Thr Gly Ser Ile Arg Tyr Asp Glu Ser Leu
          210         215         220
Glu Asp Val Ile Asp Lys Ile Cys Phe Ser Leu Asn Leu Arg Lys Lys
225          230         235         240
Glu Ile Asn His Glu Ile Ile Ile Tyr Asn
          245         250

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<210> 8554
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 8554

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Ser Met Lys Ala Ser Ser Asn Asn Leu Leu Ser Ile Ile Lys Gly Pro
1          5          10          15
Arg Gln Phe Val Ile Pro Ile Tyr Gln Arg Thr Tyr Ser Trp Gln Leu
          20          25          30
Val Gln Cys Asn Gln Leu Leu Asn Asp Ile Leu Arg Ile Ser Asn Asp
          35          40          45
Ser Ala Val Gln Gly His Phe Ile Gly Ser Ile Val Tyr Phe Gln Glu
          50          55          60
Ser Ile His Thr Val Ser Asp Val Pro Lys Leu Leu Val Ile Asp Gly
65          70          75          80
Gln Gln Arg Leu Thr Val Ser Leu Leu Ile Ala Ala Ile Ala Asp
          85          90          95
Phe Ile Lys Glu Asn Ala Val Glu Ile Asp Thr Ser Phe Thr Lys Leu
          100         105         110
Gln Asn Tyr Tyr Leu Ile Asn Pro Glu Glu Asp Asn Glu Leu Arg Tyr

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      115              120              125
Lys Leu Leu Leu Thr Arg Arg Asp Lys Asp Thr Tyr Ile Asn Leu Leu
  130              135              140
Lys Gly Ile Pro Arg Ser Glu Gly Met Ser Gln Arg Ile Ile Glu Asn
 145              150              155              160
Tyr Asp Phe Phe Lys Ser Lys Ile Asn Lys Glu Asn Val Val Ala Ile
      165              170              175
Tyr Ser Gly Val Gln Arg Leu Phe Val Val Asp Val Ala Leu Glu Lys
      180              185              190
Glu Lys Asp Asn Pro Gln Leu Ile Phe Glu Ser Met Asn Ser Thr Gly
      195              200              205
Leu Asp Leu Ser Gln Ala Asp Leu Ile Arg Asn Tyr Val Leu Met Gly
      210              215              220
Gln Glu Val His Leu Gln Thr Ser Leu Tyr Glu Ser Tyr Trp Tyr Pro
 225              230              235              240
Met Glu Gln Gly Tyr Gly Ser Glu Tyr Ala Ala Leu Phe Asn Ser Phe
      245              250              255
Met Arg Asp Tyr Leu Ser Val Lys Thr Gly Thr Tyr His Ser Ser Tyr
      260              265              270
Arg Tyr Gly Val Arg Cys Phe Gln Gly Leu Cys Asp Arg Gly Lys Ser
      275              280              285
Ser Arg Tyr Tyr Gln Arg Ser Ser Gln Arg His Leu Tyr Leu Phe Arg
      290              295              300
Ile Leu Arg Gln His Gly Ser Ser Gln Arg Ala Gly
 305              310              315

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<210> 8555

<211> 431

<212> PRT

<213> B.fragilis

<400> 8555

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1              5              10              15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20              25              30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
      35              40              45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
      50              55              60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
      65              70              75              80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
      85              90              95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
      100              105              110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
      115              120              125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
      130              135              140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
      145              150              155              160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
      165              170              175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
      180              185              190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
      195              200              205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys

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      210                      215                      220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225                      230                      235                      240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
      245                      250                      255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
      260                      265                      270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
      275                      280                      285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
      290                      295                      300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305                      310                      315                      320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
      325                      330                      335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
      340                      345                      350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
      355                      360                      365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
      370                      375                      380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
385                      390                      395                      400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
      405                      410                      415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
      420                      425                      430

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<210> 8556
 <211> 134
 <212> PRT
 <213> B.fragilis

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<400> 8556
Leu Pro Ala Tyr Ser Ile His Leu Ile Asn Ile Lys Asn Met Glu Lys
1                      5                      10                      15
Phe Ile Ala Phe Phe Glu Ile Pro Ala Ala Asp Phe His Arg Ala Val
      20                      25                      30
Gly Phe Tyr Glu Thr Val Leu Asp Ile Lys Leu Ala Val Ser Glu Tyr
      35                      40                      45
Glu Glu Glu Lys Met Ala Cys Phe Met Glu Gln Gly Glu Ala Val Gly
      50                      55                      60
Ala Val Ser Trp Ala Pro Asp Phe Leu Pro Ser Glu Arg Gly Thr Leu
65                      70                      75                      80
Ile His Phe Tyr Cys Glu Glu Ile Gly Lys Ser Leu Glu Arg Val Leu
      85                      90                      95
Gln Lys Gly Gly Lys Val Ile Thr Pro Glu Thr Glu Ile Asp Ala Glu
      100                      105                      110
Gly Arg Gly His Phe Ala Val Phe Ala Asp Ser Glu Gly Asn His Ile
      115                      120                      125
Gly Leu Tyr Ser Asp Lys
      130

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<210> 8557
 <211> 256
 <212> PRT
 <213> B.fragilis

<400> 8557

```

Asn Arg Lys Tyr Ile Val Val Leu Ala Lys Arg Ile Ile Pro Cys Leu
1      5      10      15
Asp Ile Lys Asp Gly Gln Thr Val Lys Gly Thr Asn Phe Val Asn Leu
20     25     30
Arg Gln Ala Gly Asp Pro Val Glu Leu Gly Arg Ala Tyr Ser Glu Gln
35     40     45
Gly Ala Asp Glu Leu Val Phe Leu Asp Ile Thr Ala Ser His Glu Gly
50     55     60
Arg Lys Thr Phe Ala Glu Leu Val Arg Arg Ile Ala Ala Asn Ile Ser
65     70     75     80
Ile Pro Phe Thr Val Gly Gly Gly Ile Asn Glu Leu Ser Asp Val Asp
85     90     95
Arg Leu Leu Asn Ala Gly Ala Asp Lys Ile Ser Ile Asn Ser Ser Ala
100    105    110
Ile Arg His Pro Gln Leu Ile Asp Asp Ile Ala Lys His Phe Gly Ser
115    120    125
Gln Val Cys Val Leu Ala Val Asp Ala Lys Gln Thr Glu Asn Gly Trp
130    135    140
Lys Cys Tyr Leu Asn Gly Gly Arg Ile Glu Thr Asp Lys Glu Leu Thr
145    150    155    160
Ala Trp Thr Lys Glu Ala Gln Glu Arg Gly Ala Gly Glu Val Leu Phe
165    170    175
Thr Ser Met Asn His Asp Gly Val Lys Thr Gly Tyr Ala Asn Glu Ala
180    185    190
Leu Ala Glu Leu Ala Ser Gln Leu Ser Ile Pro Val Ile Ala Ser Gly
195    200    205
Gly Ala Gly Arg Met Glu His Phe Arg Asp Ala Phe Thr Leu Gly Lys
210    215    220
Ala Asp Ala Ala Leu Ala Ala Ser Val Phe His Phe Gly Glu Ile Lys
225    230    235    240
Ile Pro Glu Leu Lys Ser Tyr Leu Cys Gly Gln Gly Ile Thr Val Arg
245    250    255

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<210> 8558

<211> 186

<212> PRT

<213> B.fragilis

<400> 8558

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Leu Leu Lys Gln Met Gln Glu Lys Glu Ile Val Arg Lys Leu Lys His
1      5      10      15
Gly Asp Gln Glu Ala Phe Ala Phe Leu Tyr Asn His Tyr Trp Lys Gln
20     25     30
Val Tyr Asn Phe Thr Arg Leu Tyr Phe Thr Ala Ser Met Asp Ile Glu
35     40     45
Glu Ile Val Gln Glu Val Phe Val Lys Val Trp Glu Ser His His Phe
50     55     60
Leu Asp Glu Asn Lys Ser Phe Glu Gly Tyr Leu Phe Ile Ile Thr Arg
65     70     75     80
Asn Val Ile Phe Asn His Ser Arg Arg Tyr Tyr Lys Glu Thr Ala Leu
85     90     95
Lys Ile Thr Ala Ile Gln Ala Val Glu Glu Ser Tyr Asp Met Glu Gly
100    105    110
Glu Leu Asp Ala Ala Asp Leu Lys Tyr Ile Asp Glu Leu Val Met
115    120    125
Gln Leu Pro Pro Arg Gln Arg Glu Val Phe Arg Met Ser Arg Glu Leu
130    135    140
His Met Ser Asn Arg Glu Ile Ala Glu His Phe Ser Ile Thr Glu Lys
145    150    155    160

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Ala Ile Glu Arg His Ile Asn Leu Ala Leu Lys Phe Leu Lys Lys Asn
 165 170 175
 Leu Asn Leu Phe Met Leu Phe Met Ala Ala
 180 185

<210> 8559
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 8559
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 8560
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 8560
 Asn Glu Phe Lys Thr Ile Thr Val Met Ile Lys Gln Thr Ala Glu Ile
 1 5 10 15
 Phe Glu Ile Leu Ser Lys Gly Gly Phe Ile Ser Ser Asp Ser Thr Asn
 20 25 30
 Pro Asn Ile Arg Gln Leu Tyr Thr Val Ile Glu Asp Asn Gln Ser Glu
 35 40 45
 Leu Tyr Asp Phe Phe Ala Ala Ile Asn Phe Val Leu Glu Ser Gly Asn
 50 55 60
 Glu Tyr Tyr Tyr Phe Ser Arg Arg Glu Asn Lys Val Asp Leu Glu Arg
 65 70 75 80
 Lys Leu Glu Ile Ala Val Arg Trp Ile Asp Val Leu Asp Phe Ile Lys
 85 90 95
 Thr Tyr Asp Ala Ala Phe Ser Ser Gly Phe Arg Phe Gln Pro Ala Asp
 100 105 110
 Met Val Val Lys Val Gly Thr Asp Leu Glu Leu Lys Glu Lys Leu Thr
 115 120 125
 Gly Leu Lys Lys Leu Thr Gly Arg Glu Lys His Glu Glu Met Ile Asp
 130 135 140
 Lys Ile Val Asn Asp Leu Lys Arg Asp Gly Phe Ile Glu Leu Glu Asn
 145 150 155 160
 Glu Ile Thr Ser Thr Tyr Lys Val Val Ala Ala Phe Gly Tyr Leu Glu
 165 170 175
 Glu Leu Val Ala Cys Ile Asn Ile Pro Glu Glu Ile Gln Asn Glu Ile
 180 185 190
 Pro Glu

<210> 8561
 <211> 205

<212> PRT

<213> B.fragilis

<400> 8561

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Tyr Asn Tyr Lys Asn Lys Arg Ile Met Lys Gln Glu Val Leu Phe Ile
1      5      10      15
Ile Leu Asn Glu Tyr Ala Asp Trp Glu Ser Ala Phe Val Ala Ala Ser
      20      25      30
Leu His Ser Gly Leu Met Pro Gly Ser Glu Ile Lys Tyr Ile Val Lys
      35      40      45
Thr Val Ala Pro Thr Leu Asp Ala Val Cys Ser Leu Gly Gly Phe Arg
      50      55      60
Thr Leu Pro Asp Tyr Ser Phe Asp Asn Leu Pro Ser Asp Tyr Thr Ala
65      70      75      80
Leu Val Leu Ile Gly Gly Met Gln Trp Gln Ser Ala Glu Ala Glu Arg
      85      90      95
Val Phe Pro Ile Val Gln Asp Ala Phe Glu Lys Gly Lys Val Ile Gly
      100     105     110
Gly Ile Cys Asn Ala Ala Ser Phe Leu Cys Ala His Gly Phe Leu Asn
      115     120     125
Lys Val Lys His Thr Gly Asn Thr Leu Ala Val Leu Lys Gln Trp Gly
      130     135     140
Gly Glu Arg Tyr Thr Asn Glu Asp Gly Tyr Leu Glu Lys Gln Ala Val
145     150     155     160
Gly Asp Lys Asn Ile Val Thr Ala Asn Gly Thr Gly Tyr Leu Glu Phe
      165     170     175
Thr Arg Glu Leu Leu Leu Ala Leu Lys Ala Asp Thr Gln Glu Lys Ile
      180     185     190
Glu Ala Phe Tyr Asp Phe Ser Lys Asn Gly Leu Val Arg
      195     200     205

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<210> 8562

<211> 1126

<212> PRT

<213> B.fragilis

<400> 8562

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Ser Met Asn Lys Phe Leu Phe Ser Cys Gln Lys Arg Cys Leu Lys Tyr
1      5      10      15
Ile Val Met Ala Leu Leu Leu Tyr Pro Leu Ser Ala Leu Ala Ala Gln
      20      25      30
Gly Gln Ile Val Val Lys Gly Gln Ser Leu Thr Ile Pro Gln Ala Ile
      35      40      45
Arg Leu Ile Glu Lys Ser Ser Gln Tyr Thr Phe Phe Tyr Asn Ala Asn
      50      55      60
Asp Leu Lys Asn Thr Thr Leu Lys Ser Ile Asp Cys Lys Gly Ser Ile
65      70      75      80
Asp Asp Val Leu Asn Glu Val Phe Lys Gly Ser Asn Ile Ser Tyr Val
      85      90      95
Ile Lys Gly Asn Glu Val Ile Leu Lys Val Glu Lys Thr Glu Ser Thr
      100     105     110
Gln Gln Lys Lys Ala Lys Ile Ile Gly Ile Val Thr Asp Ser Lys Thr
      115     120     125
Gly Glu Pro Ile Ile Gly Ala Thr Val Gln Leu Leu Gly Thr Thr Thr
130     135     140
Gly Val Ile Thr Asp Val Asp Gly Lys Phe Glu Leu Ala Ala Phe Pro
145     150     155     160
Lys Asn Glu Ile Gln Ile Ser Tyr Ile Gly Tyr Val Thr Lys Lys Val
      165     170     175

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Lys Val Gly Ser Gln Lys Val Met Ser Ile Thr Leu Ala Glu Asp Ala
 180 185 190
 Gln Gln Leu Asp Glu Val Val Val Thr Ala Phe Gly Thr Gly Gln Lys
 195 200 205
 Lys Glu Thr Ile Thr Gly Ser Ile Gln Ser Val Arg Pro Ser Asp Leu
 210 215 220
 Leu Val Pro Ser Ala Asn Leu Ser Ser Ser Phe Ala Gly Arg Leu Ser
 225 230 235 240
 Gly Val Ile Ala Tyr Gln Arg Ser Gly Glu Pro Gly Gln Asn Ser Ala
 245 250 255
 Asp Phe Phe Ile Arg Gly Val Ala Thr Met Asn Gly Ala Thr Ser Pro
 260 265 270
 Leu Ile Ile Leu Asp Gly Val Glu Val Ser Lys Ala Asp Leu Asn Ser
 275 280 285
 Leu Asp Pro Glu Val Ile Glu Ser Phe Ser Val Leu Lys Asp Ala Thr
 290 295 300
 Ala Ser Ala Met Tyr Gly Thr Arg Gly Ala Asn Gly Val Leu Ile Val
 305 310 315 320
 Lys Thr Lys Ser Gly Ser Asp Leu Asp Arg Pro Ile Ile Gly Val Arg
 325 330 335
 Leu Glu Gly Tyr Val Asn Thr Pro Thr Lys Lys Pro Glu Ile Val Asp
 340 345 350
 Gly Pro Thr Tyr Met Arg Leu Tyr Asn Glu Ala Val Thr Asn Gln Gly
 355 360 365
 Thr Gly Ala Val Leu Tyr Ser Asp Glu Lys Ile Asn Gly Thr Ile His
 370 375 380
 Asn Leu Asn Pro Tyr Ile Tyr Pro Asn Val Asp Trp Tyr Lys Glu Val
 385 390 395 400
 Phe Lys Asp Ala Thr Phe Asn Gln Lys Ala Asn Phe Asn Val Arg Gly
 405 410 415
 Gly Thr Ser Lys Ile Thr Tyr Phe Met Asn Val Asn Met Asn His Glu
 420 425 430
 Thr Gly Met Leu Lys Asp Arg Ser Ser Asp Phe Phe Ser Tyr Lys Asn
 435 440 445
 Asn Ile Asp Tyr Met Lys Tyr Ala Phe Gln Asn Asn Val Asp Phe His
 450 455 460
 Leu Ser Lys Ser Ser Thr Ile Ser Leu His Leu Asn Val Gln Leu Asn
 465 470 475 480
 Asp Met His Gly Pro Leu Thr Thr Lys Asp Gly Asn Gly Val Gly Asp
 485 490 495
 Ile Phe Ser Ala Ile Met Gly Thr Asn Pro Val Asp Phe Pro Val Met
 500 505 510
 Phe Pro Gln Gly Ser Asn Thr Trp Tyr His Trp Gly Gly Ile Leu Ala
 515 520 525
 Gly Asn Tyr Gln Pro Leu Asn Pro Val Ala Leu Ser Ser Ala Gly Tyr
 530 535 540
 Lys Asp Thr Phe Glu Ser Thr Val Val Ala Asn Val Asn Trp Asp Gln
 545 550 555 560
 Lys Leu Asp Phe Ile Thr Lys Gly Leu Ser Phe Arg Ala Leu Val Ser
 565 570 575
 Phe Lys Asn Trp Ser Tyr Asn Gln Lys Phe Arg Leu Gln Gly Tyr Asn
 580 585 590
 Ser Tyr Gln Leu Ser Asp Tyr Lys Gln Asn Glu Asp Gly Ser Tyr Asp
 595 600 605
 Phe Thr Asn Thr Pro Ile Gly Glu Pro Ser Asn His Thr Met Asp Ala
 610 615 620
 Phe Phe Gly Thr Asn Gly Asp Arg Arg Phe Tyr Ile Gln Gly Tyr Leu
 625 630 635 640
 Asn Tyr Glu Arg Ser Phe Gly Ser His Asn Val Ser Gly Met Leu Leu

										645					650					655									
Tyr	Asn	Gln	Asp	Asp	Tyr	Asn	Thr	Asn	Val	Asn	Ser	Ser	Leu	Ile	Ala														
															660					665					670				
Ser	Leu	Pro	Lys	Arg	Lys	Met	Gly	Val	Ala	Ala	Arg	Leu	Ser	Tyr	Asp														
															675					680					685				
Tyr	Asp	His	Arg	Tyr	Met	Leu	Glu	Val	Asn	Ala	Gly	Tyr	Asn	Gly	Ser														
															690					695					700				
Glu	Ser	Phe	Ala	Lys	Gly	His	Arg	Trp	Gly	Leu	Phe	Pro	Ser	Ile	Ser														
															705					710					715				
Leu	Gly	Trp	Asn	Ile	Ser	Glu	Glu	Lys	Phe	Trp	Lys	Pro	Ile	Lys	Pro														
															725					730					735				
Val	Ile	Ser	Asn	Phe	Lys	Val	Arg	Gly	Ser	Tyr	Gly	Leu	Val	Gly	Asn														
															740					745					750				
Asp	Gln	Ile	Gly	Ser	Asp	Arg	Phe	Ala	Tyr	Leu	Ala	Ile	Val	Asn	Leu														
															755					760					765				
Thr	Glu	Ser	Pro	Ser	Tyr	Thr	Thr	Gly	Tyr	Gly	Gly	Ser	Thr	Thr	Ser														
															770					775					780				
Leu	Ser	Gly	Pro	Thr	Tyr	Asn	Arg	Phe	Gln	Asn	Asn	Glu	Leu	Thr	Trp														
															785					790					795				
Glu	Val	Gly	Asn	Lys	Leu	Asn	Val	Gly	Val	Asp	Leu	Gln	Leu	Phe	Asn														
															805					810					815				
Ser	Leu	Asn	Ile	Thr	Val	Asp	Gly	Phe	Arg	Glu	Ile	Arg	Asp	Asn	Ile														
															820					825					830				
Phe	Gln	Gln	Lys	Asn	Ser	Ile	Pro	Asn	Tyr	Leu	Gly	Thr	Ala	Ser	Thr														
															835					840					845				
Lys	Ile	Tyr	Gly	Asn	Phe	Ala	Lys	Val	Lys	Asn	Thr	Gly	Phe	Asp	Leu														
															850					855					860				
Ala	Leu	Asp	Tyr	Gly	Lys	Gln	Leu	Asn	Arg	Asn	Phe	Ser	Ile	Gln	Met														
															865					870					875				
Lys	Gly	Thr	Phe	Thr	Tyr	Ala	His	Asn	Glu	Val	Leu	Lys	Tyr	Asp	Glu														
															885					890					895				
Ala	Ala	Gly	Leu	Arg	Pro	Ala	Leu	Ser	Gln	Val	Gly	Lys	Ser	Leu	Asn														
															900					905					910				
Ser	Ile	Trp	Gly	Tyr	Val	Ala	Asp	Gly	Leu	Tyr	Ile	Asp	Glu	Ala	Asp														
															915					920					925				
Ile	Ala	Asn	Asn	Pro	Gln	Ser	Thr	Ile	Gly	Asn	Ile	Ala	Ile	Ala	Pro														
															930					935					940				
Gly	Asp	Val	Lys	Tyr	Val	Asp	Gln	Pro	Asp	Ala	Ser	Gly	Asn	Tyr	Asp														
															945					950					955				
Gly	Lys	Ile	Thr	Ser	Asp	Asp	Arg	Val	Val	Leu	Gly	Tyr	Pro	Thr	Ile														
															965					970					975				
Pro	Glu	Ile	Ile	Tyr	Gly	Phe	Gly	Pro	Ser	Ile	Thr	Trp	Lys	Asn	Trp														
															980					985					990				
Asp	Phe	Ser	Phe	Phe	Phe	Gln	Gly	Gln	Ala	Arg	Val	Ser	Phe	Met	Met														
															995					1000					1005				
Ser	Gly	Phe	Glu	Pro	Phe	Gly	Thr	Gln	Ser	Lys	Asn	Asn	Val	Leu	Lys														
															1010					1015					1020				
Trp	Ile	Ser	Asp	Asp	His	Trp	Ser	Lys	Asp	Asn	Gln	Asn	Pro	Asn	Ala														
															1025					1030					1035				
Arg	Tyr	Pro	Arg	Leu	Thr	Gln	Tyr	Asn	Asn	Asn	Asn	Asn	Thr	Ala	Ser														
															1045					1050					1055				
Ser	Ser	Tyr	Trp	Ala	Ala	Asn	Ala	Ser	Phe	Leu	Lys	Leu	Gln	Asn	Ala														
															1060					1065					1070				
Glu	Asn	Arg	Tyr	Arg	Phe	Lys	Trp	Ala	Arg	Ile	Tyr	Val	Asn	Gly	Ser														
															1075					1080					1085				
Asn	Leu	Leu	Thr	Phe	Ser	Pro	Phe	Lys	Leu	Trp	Asp	Pro	Glu	Met	Gly														
															1090					1095					1100				
Gly	Gly	Ala	Gly	Met	Lys	Tyr	Pro	Thr	Gln	Arg	Thr	Tyr	Asn	Val	Gly														
															1105					1110					1115				
																									1120				

Ile Gln Leu Thr Phe Lys
1125

<210> 8563
<211> 102
<212> PRT
<213> B.fragilis

<400> 8563
Gln Arg Leu Lys Leu Ser Lys Asn Arg Ile Asp Gln Glu Lys Arg Val
1 5 10 15
Val Glu Leu Met Ile Arg Leu Tyr Cys Arg Lys Lys Glu Lys Asn Val
20 25 30
Thr Leu Cys Pro Arg Cys Glu Glu Leu Leu His Tyr Ala His Ala Arg
35 40 45
Leu Asp His Cys Pro Phe Gly Glu Lys Lys Lys Ala Cys Lys Gln Cys
50 55 60
Ser Ile His Cys Tyr Lys Pro Ala Met Arg Glu Gln Met Arg Arg Val
65 70 75 80
Met Arg Phe Ser Gly Pro Arg Met Leu Ile Tyr Ala Pro Trp Glu Ala
85 90 95
Ile Lys His Leu Leu Gly
100

<210> 8564
<211> 89
<212> PRT
<213> B.fragilis

<400> 8564
His Lys Ile Asn Leu Asn Ile Ile Ile Lys Met Asn Lys Ser Asn Lys
1 5 10 15
Glu Thr Asn Leu Ile Lys Lys Leu Leu Ala Asp Gln Leu Asp Lys Lys
20 25 30
Glu Arg Lys Lys Leu Tyr Tyr Ser Asn Leu Ile Glu Lys Gln Met Arg
35 40 45
Lys Gln Trp Lys Glu Asn Lys Asn Thr Pro Val Glu Asn Glu Ile Gly
50 55 60
Asn Lys Ile Trp Asp Lys Ile Glu Asn Gln Cys Ile Lys Val His Lys
65 70 75 80
Arg Ile Val Pro Leu Glu Leu Ile Gln
85

<210> 8565
<211> 96
<212> PRT
<213> B.fragilis

<400> 8565
Pro Ile Lys Asn Arg Lys Arg Met Glu Gln Lys Phe Cys Gln Ser Cys
1 5 10 15
Gly Met Pro Leu Asn Pro Glu Val Leu Gly Thr Glu Lys Asp Gly Ser
20 25 30
Lys Asn Glu Glu Tyr Cys Thr Tyr Cys Tyr Ala Asp Gly His Phe Thr
35 40 45
Val Glu Cys Thr Met Asp Glu Met Ile Asn Gln Cys Ala Gln Phe Val
50 55 60
Asp Glu Phe Asn Lys Gly Ser Glu Val Lys Met Thr Lys Glu Glu Ala
65 70 75 80

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Ile Ala Asn Met Lys Gln Phe Phe Pro Met Leu Lys Arg Trp Lys Gln
 85 90 95

<210> 8566

<211> 287

<212> PRT

<213> B.fragilis

<400> 8566

Lys Ser Met Lys Ser Ser Arg Asn Thr Ser Thr Ser Gly Lys Pro Ala
 1 5 10 15
 Ser Gly Arg Arg Thr Pro Ala Arg Lys Thr Lys Ala Lys Lys Lys Thr
 20 25 30
 Thr Arg Thr Met Pro Val Trp Met Arg Asn Thr Leu Ala Leu Ile Val
 35 40 45
 Val Gly Val Phe Ser Leu Thr Phe Tyr Tyr Phe Val Ile Arg Pro Tyr
 50 55 60
 Ser Tyr Arg Trp Lys Glu Cys Tyr Gly Arg Lys Glu Tyr Gly Val Cys
 65 70 75 80
 Ile Pro Cys Gly Tyr Glu Val His Gly Ile Asp Ile Ser His Tyr Gln
 85 90 95
 Gly Asn Ile Asp Trp Lys Glu Leu Lys Gln Asn Arg Glu Thr Asp Phe
 100 105 110
 Pro Leu His Phe Ile Phe Met Lys Ala Thr Glu Gly Gly Asp His Gly
 115 120 125
 Asp Asp Thr Phe Lys Asp Asn Phe Glu Gln Ala Arg Arg Tyr Gly Phe
 130 135 140
 Ile Arg Gly Ala Tyr His Phe Phe Thr Pro Arg Thr Asp Ala Leu Lys
 145 150 155 160
 Gln Ala Asp Phe Phe Ile Arg Thr Val Lys Leu Asp Ser Gly Asp Leu
 165 170 175
 Pro Pro Val Leu Asp Val Glu Leu Thr Gly Lys Arg Pro Lys Lys Glu
 180 185 190
 Leu Gln Gln Asn Ile Lys Lys Trp Leu Asp Arg Val Glu Ala His Tyr
 195 200 205
 Gly Val Lys Pro Ile Leu Tyr Thr Ser Tyr Lys Phe Lys Thr Arg Tyr
 210 215 220
 Leu Asp Asp Ser Leu Phe Asn Ala Tyr Pro Tyr Trp Ile Ala His Tyr
 225 230 235 240
 Tyr Val Asp Ser Val Arg Tyr Glu Gly Lys Trp His Phe Trp Gln His
 245 250 255
 Thr Asp Ile Gly Ser Val Pro Gly Ile His His Asp Val Asp Leu Asn
 260 265 270
 Val Phe Asn Gly Ser Leu Glu Glu Leu Arg Lys Met Thr Met Arg
 275 280 285

<210> 8567

<211> 137

<212> PRT

<213> B.fragilis

<400> 8567

Tyr Thr Met Lys Ser Leu Asn Glu Arg Ala Ala Asp Leu Leu Gln Gly
 1 5 10 15
 Cys Glu Thr Val Ile Leu Ser Ser Val Asn Gln Glu Gly Tyr Pro Arg
 20 25 30
 Pro Val Pro Leu Ser Lys Ile Ala Ser Glu Gly Ile Ser Glu Ile Trp
 35 40 45
 Met Ala Thr Gly Glu His Ser Val Lys Thr Lys Asp Phe Arg Ser Asn

50		55		60											
Pro	Lys	Ala	Gly	Leu	Cys	Phe	Tyr	Glu	Gln	Gly	Asn	Ser	Val	Ala	Leu
65				70					75						80
Thr	Gly	Glu	Ile	Glu	Val	Val	Thr	Asp	Ala	Gly	Leu	Lys	Gln	Lys	Tyr
			85						90					95	
Trp	Gln	Asp	Trp	Phe	Ile	Ala	His	Phe	Pro	Lys	Gly	Pro	Thr	Asp	Pro
		100						105					110		
Glu	Tyr	Val	Leu	Leu	Lys	Phe	Arg	Ser	Glu	His	Ala	Thr	Phe	Trp	Ile
		115					120					125			
Asp	Gly	Gln	Phe	Val	His	Arg	Asn	Ile							
	130					135									

<210> 8568

<211> 302

<212> PRT

<213> B.fragilis

<400> 8568

Arg	Glu	Met	Lys	Met	Lys	Lys	Ile	Leu	Leu	Gly	Leu	Cys	Val	Ile	Leu
1			5						10					15	
Gly	Leu	Ile	Asn	Met	Ile	Gly	Cys	Ser	Ser	Asp	Glu	Lys	Tyr	Pro	Met
			20					25					30		
Pro	Thr	Ser	Ile	Asp	Gln	Asn	Ser	Leu	Ser	Ala	Glu	Ala	Lys	Ala	Gly
		35					40					45			
Ala	Ile	Lys	Leu	Lys	Trp	Thr	Val	Pro	Ala	Asp	Ser	Asn	Tyr	Tyr	Tyr
	50					55					60				
Val	Lys	Val	Thr	Tyr	Thr	Leu	Pro	Glu	Asp	Gly	Lys	Lys	Cys	Met	Arg
65					70					75					80
Leu	Ala	Ser	Val	Asn	Ser	Asp	Thr	Met	Leu	Val	Asp	Asn	Leu	Leu	His
				85				90						95	
Arg	Tyr	Gly	Asp	Ile	Asn	Phe	Thr	Leu	Gln	Pro	Cys	Asn	Arg	Ala	Gly
			100					105					110		
Glu	Ala	Ser	Gln	Ser	Cys	Ser	Ile	Met	Ala	Gln	Ala	Leu	Pro	Ala	Leu
		115					120					125			
Lys	Gln	Ile	Lys	Thr	Asp	Arg	Asn	Pro	Ile	Thr	Leu	Ser	Ala	Lys	Gln
	130					135					140				
Leu	Tyr	Thr	Asp	Asp	Gln	Glu	Ser	Ser	Glu	Gly	Pro	Ile	Ala	Asn	Leu
145				150					155						160
Val	Asp	Gly	Arg	Asn	Asp	Thr	Tyr	Phe	His	Met	Ser	Trp	Ser	Ser	Pro
			165					170						175	
Thr	Pro	Phe	Pro	His	Tyr	Ile	Val	Val	Asp	Leu	Gly	Glu	Glu	Asn	Ala
			180					185						190	
Leu	Ser	Thr	Phe	Leu	Phe	Ser	Tyr	Val	Cys	Arg	Asp	Asn	Asn	Asn	Lys
		195					200						205		
Asp	Asn	Pro	Lys	Glu	Met	Asp	Ile	Leu	Gly	Ser	Asn	Thr	Phe	Asp	Gly
	210					215						220			
Lys	Asn	Tyr	Asp	Glu	Ser	Gln	Thr	Thr	Leu	Leu	Ala	Ser	Leu	Ser	Asn
225					230					235					240
Leu	Pro	Asn	Thr	Lys	Ala	Ala	Ser	Tyr	Glu	Ser	Asp	Ile	Ile	Lys	Ala
			245						250					255	
Gly	Ala	Ser	Tyr	Arg	Tyr	Leu	Trp	Phe	Lys	Val	Lys	Ser	Ser	Thr	Ser
		260					265						270		
Gly	Ser	Asn	Trp	Ile	Ala	Leu	Ala	Glu	Leu	Gly	Leu	Ser	Lys	Val	Ile
	275					280						285			
Val	Lys	Thr	Tyr	Asp	Pro	Glu	Thr	Gly	Glu	Thr	Thr	Ile	Glu		
	290					295					300				

<210> 8569

<211> 360

<212> PRT

<213> B.fragilis

<400> 8569

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Lys Glu Ser Asp Ser Tyr Met Met Thr Leu Asn Asp Phe Glu Asn Tyr
1      5      10      15
Val Pro Cys Lys Ile Trp Ala Arg Gly Glu Glu Tyr Tyr Glu Cys Asp
      20      25      30
Ala Val Lys Asp Leu Glu Glu Thr Glu Pro Gly Glu Trp Ile Ala Thr
      35      40      45
Val Glu Gly Thr Glu Asp Tyr Glu Val Glu Ile Ser Leu Glu Gly Lys
      50      55      60
Lys Ile Ile His Trp Ser Cys Asp Cys Pro Tyr Glu Gly Asp Ile Cys
      65      70      75      80
Lys His Val Val Ala Thr Val Leu Ala Ile Arg Asn Asn Arg Ser Gly
      85      90      95
Gln Lys Arg Phe Leu Ser Ala Arg Glu Ala Lys Leu Met Glu Lys Gln
      100     105     110
Gln Ala Thr Leu Lys Asp Lys Lys Val Glu Asp Ile Leu Ala Phe Val
      115     120     125
Pro Ser Asp Gln Leu Ser Asp Phe Val Leu Glu Tyr Ala Ser Lys His
      130     135     140
Thr Glu Cys Lys Gln Ala Leu Leu Glu Lys Phe Leu Pro Lys Pro Gln
      145     150     155     160
Ala Asn Gly Lys Ser Pro Lys Asn Tyr Gly Asn Asp Ile Arg Lys Cys
      165     170     175
Phe Asn Asp Ser Tyr Val Glu Thr Lys Gly Arg Tyr Gly Gly Tyr Tyr
      180     185     190
Glu Pro Thr Met Asp Trp Asn Lys Val Gly Cys Glu Leu Asn Lys Tyr
      195     200     205
Leu Lys Lys Ala Lys Leu Leu Val Glu Gln His Cys Phe Glu Asp Ala
      210     215     220
Ala Ala Ile Ala Thr Gly Ile Leu Arg Ala Ile Gly Glu Asn Tyr Ile
      225     230     235     240
Glu Glu Asp Leu Val Tyr His Asn Glu Phe Glu Ala Asn Phe Tyr Cys
      245     250     255
Glu Cys Ser Gly Glu Leu Leu Leu Glu Ile Ile Tyr Arg Pro Glu Ile
      260     265     270
Thr Gly Ser Gln Lys Ile Met Ile Leu Asn Glu Val Arg Gln Ile Glu
      275     280     285
Lys Leu Asp Thr Tyr Arg Glu Tyr Asp Val Tyr Asp Ile Asp Leu Leu
      290     295     300
Leu Ser Gln Ile Thr Ile Ala Thr Gln Thr Gln Glu Glu Ala Leu Thr
      305     310     315     320
Tyr Ile Asn Gln Leu Ile Glu Glu Arg Lys Ser Ser Trp Glu Leu Tyr
      325     330     335
Lys Leu Ile Glu Lys Lys Ile Asn Ile Ser Leu Ile Pro Gln His Tyr
      340     345     350
Asn Leu Thr Leu Phe Ile Ser Ser
      355     360

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<210> 8570

<211> 88

<212> PRT

<213> B.fragilis

<400> 8570

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Lys Met Glu Glu Tyr Glu Val Ile His Arg Pro Glu Arg Asn Arg Phe
1      5      10      15

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Glu Leu Glu Lys Asn Gly Met Thr Ala Phe Val Glu Tyr Glu Val Glu
 20 25 30
 Asp Gly Ala Leu Asp Ile Met His Thr Ile Val Pro Pro Pro Leu Glu
 35 40 45
 Gly Lys Gly Ile Ala Ala Ala Leu Val Glu Ala Thr Tyr Lys Tyr Ala
 50 55 60
 Ser Ala Gln Gly Leu Lys Pro Lys Ala Thr Cys Ser Tyr Ala Val Ala
 65 70 75 80
 Trp Leu Lys Arg His Pro Ala Glu
 85

<210> 8571

<211> 73

<212> PRT

<213> B.fragilis

<400> 8571

Lys Val Arg Glu Asn Thr Pro Thr Thr Ile Ser Ala Arg Val Leu Arg
 1 5 10 15
 Ile Gln Thr Gly Met Val Arg Val Val Phe Phe Phe Ala Phe Val Phe
 20 25 30
 Arg Ala Gly Val Arg Arg Pro Glu Ala Gly Leu Pro Glu Val Glu Val
 35 40 45
 Phe Arg Glu Asp Phe Ile Asp Phe Tyr Ser Tyr Leu Glu Phe Asp Ser
 50 55 60
 Pro Gln Ile Thr Arg Ile Phe Thr Asp
 65 70

<210> 8572

<211> 234

<212> PRT

<213> B.fragilis

<400> 8572

Arg Leu Met Asp Glu Thr Leu Ile His Tyr Thr Asp Val Glu Ile His
 1 5 10 15
 Gln Gln Glu Leu Cys Val Leu Ser Glu Val Asn Leu Gln Leu His Lys
 20 25 30
 Gly Glu Phe Val Tyr Leu Val Gly Lys Val Gly Ser Gly Lys Thr Ser
 35 40 45
 Leu Leu Lys Thr Leu Tyr Gly Glu Leu Asp Val Thr Ala Gly Glu Ala
 50 55 60
 Glu Val Leu Gly Tyr Arg Met Thr Ser Ile Lys Arg Lys His Ile Pro
 65 70 75 80
 Gln Leu Arg Arg Lys Leu Gly Ile Val Phe Gln Asp Phe Gln Leu Leu
 85 90 95
 Thr Asp Arg Thr Val Asn Asp Asn Leu Glu Phe Val Leu Arg Ala Thr
 100 105 110
 Gly Trp Lys Asn Lys Gln Glu Ile Lys Glu Arg Ile Ala Glu Val Leu
 115 120 125
 Asn Leu Val Gly Met Glu Asn Lys Gly Tyr Lys Leu Pro Asn Glu Leu
 130 135 140
 Ser Gly Gly Glu Gln Gln Arg Ile Val Ile Ala Arg Ala Met Leu Asn
 145 150 155 160
 Ser Pro Glu Ile Ile Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp Val
 165 170 175
 Glu Thr Gly Lys Ala Ile Val Glu Leu Leu His Asn Ile Cys Gln Thr
 180 185 190
 Gly Ser Leu Val Val Met Thr Thr His Asn Leu Gln Leu Val Ala Glu

195 200 205
 Tyr Pro Gly Gln Val Tyr Arg Cys Ala Glu His Arg Ile Val Asn Val
 210 215 220
 Thr Asp Glu Phe Val Lys Lys Glu Asn Asn
 225 230

<210> 8573
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8573
 Arg Ile Ala Glu Glu Leu Met Glu Ile Leu Ser Ala Pro Ala Leu Ser
 1 5 10 15
 Arg Arg Ser Thr Ser Leu Asn Ser Leu Ile Pro Pro Pro Thr Val Asn
 20 25 30
 Gly Ile Leu Ile Leu Ala Ala Ile Arg Arg Thr Ser Ser Ala Lys Val
 35 40 45
 Leu Arg Pro Ser Trp Leu Ala Val Met Ser Arg Lys Thr Asn Ser Ser
 50 55 60
 Ala Pro Cys Ser Leu
 65

<210> 8574
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 8574
 Leu Phe Thr Cys Thr Phe Ser Phe Arg Phe Gly Thr Ile Leu Ala Ile
 1 5 10 15
 Cys Leu Ser Gln Lys Lys Ser Cys Val Met Glu Glu Tyr Leu Ser Ala
 20 25 30
 Asp Ile Tyr Val Ser Lys Arg Asn Asn Ser Leu Ile Asn Gly Lys Met
 35 40 45
 Ile Gly Arg Val Leu Gly Ile Leu Leu Phe Ile Glu Ala Gly Met Phe
 50 55 60
 Val Leu Cys Ser Gly Ile Ser Val Val Tyr Gly Glu Ser Asp Tyr Lys
 65 70 75 80
 Tyr Phe Leu Tyr Thr Ala Gly Ile Asn Leu Leu Ser Gly Ala Leu Leu
 85 90 95
 Val Phe Tyr Gly Arg Gly Ala Glu Asn Arg Leu Ser Arg Arg Asp Gly
 100 105 110
 Tyr Cys Ile Glu Thr Leu Ser Trp Val Phe Phe Thr Leu Phe Gly Met
 115 120 125

<210> 8575
 <211> 257
 <212> PRT
 <213> B.fragilis

<400> 8575
 Lys Trp Thr Cys Glu Ile Ala Thr Tyr Ser Ser Ser Ile Arg Asp Asn
 1 5 10 15
 Met Lys Lys Gly Phe Thr Ile Leu Leu Phe Leu Phe Ser Leu Ala Glu
 20 25 30
 Val Tyr Ala Gln Thr Glu Phe Thr Thr Cys Leu Phe Asp Ser Ser Arg
 35 40 45
 Asn Arg Ile Val Pro Val Ala Ile Tyr Gln Pro Arg Lys Glu Thr Pro

50 55 60
 Lys Thr Arg Val Ile Ile Phe Asn His Gly Tyr Asp Gly Asn Lys Asn
 65 70 75 80
 Asp Lys Ser Asn Arg Ser Tyr Ser Tyr Leu Thr Arg Phe Leu Ala Glu
 85 90 95
 Lys Gly Tyr Tyr Val Ile Ser Ile Gln His Glu Leu Ser Asp Asp Pro
 100 105 110
 Leu Leu Ala Met Glu Gly Asn Phe Met Glu Thr Arg Met Pro Asn Trp
 115 120 125
 Lys Arg Gly Glu Glu Asn Ile Leu Phe Thr Ile Arg Glu Phe Lys Lys
 130 135 140
 Leu Lys Pro Asn Leu Gln Trp Glu Lys Leu Cys Val Ile Gly His Ser
 145 150 155 160
 Asn Gly Gly Asp Ile Thr Met Leu Thr Ala Thr Asp His Pro Glu Leu
 165 170 175
 Ile Met Lys Ala Ile Ser Met Asp His Arg Arg Met Ile Ile Pro Arg
 180 185 190
 Thr Gln Lys Pro Arg Ile Tyr Thr Leu Arg Gly Cys Asp Tyr Asp Ala
 195 200 205
 Asp Pro Asp Val Val Pro Thr Ser Glu Glu Gln Lys Lys Phe Arg Ile
 210 215 220
 Glu Val Val Arg Leu Asp Gly Val Thr His Ser Asn Met Gly Glu Asn
 225 230 235 240
 Gly Ser Ala Glu Gln His Asp Leu Ile Asn Arg His Ile Tyr Ile Leu
 245 250 255
 Lys

<210> 8576
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8576
 Ser Ile Pro Arg Ile Gly Trp Ala Thr Arg Ser Gln Ser Arg Ser His
 1 5 10 15
 Ile Thr Asp Thr Gly Asp His Arg Thr Asp Gly Leu Gly Lys Ala Asp
 20 25 30
 Thr Gln Glu Gln Glu Asn Cys Pro Thr Lys Asn Asp Asp Lys Ile
 35 40 45
 Lys Ser Lys Lys His Thr His Ser Arg His Asn Arg Arg
 50 55 60

<210> 8577
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 8577
 Val Lys Leu Arg Ala Leu Ile Leu Arg Tyr Lys Glu Ser Val Leu Ile
 1 5 10 15
 Arg Val Ile Arg Gly Glu Pro Lys Asn Gly Ser Phe Ser Glu Gln Ala
 20 25 30
 Ser Ile Arg Thr Val Tyr Ser Ala Gly Cys Arg Phe Ser His Ala Thr
 35 40 45
 Ala Tyr Glu His Val Ala Leu Gly Phe Asn Pro Cys Ala Glu Ala Tyr
 50 55 60
 Leu
 65

<210> 8578
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 8578

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Ser Met Tyr Arg Glu Tyr Gln Pro Cys Gly Leu Leu Ala Pro Tyr Val
1          5          10          15
Asp Lys Ile Trp Glu Phe Lys Gly Ser Pro Glu Tyr Gly Met Arg Ile
20          25          30
Asn Val Leu Pro Asp Gly Cys Thr Asp Leu Ile Phe Ala Leu Gly Gly
35          40          45
Ile Thr Gln Pro Val Gly Asn Glu Gly Arg Ile Met Pro Ser Cys Arg
50          55          60
Ser Phe Phe Val Gly Pro Met Lys Arg Tyr Ser Glu Leu Val Ala Tyr
65          70          75          80
Thr Glu Thr Val His Met Val Gly Ile Arg Phe His Pro Cys Gly Leu
85          90          95
Phe Arg Phe Met Asp Leu Pro Val Gln Glu Leu Gly Gly Gln Arg Ile
100         105         110
Ser Ser Ala Asp Leu Gly Ile Lys Leu Phe Asp Asp Ser Phe Thr Glu
115         120         125
Arg Leu Tyr Glu Leu Pro Asp Leu Arg Ser Arg Ile Gln Cys Ile Glu
130         135         140
Thr Val Leu Val Arg Ser Met His Lys His Asp Val Val Asp Lys Gln
145         150         155         160
Ile Val Phe Ala Val Asn His Ile His Leu Tyr His Gly Gln Arg Glu
165         170         175
Ile Arg Leu Leu Ala Glu Asp Thr Cys Leu Cys Gln Arg His Leu Glu
180         185         190
Arg Arg Phe Lys Leu Phe Thr Gly Phe Thr Pro Lys Glu Tyr Ser Arg
195         200         205
Ile Val Lys Phe Arg Gln Ala Ile Asp Leu Leu Lys Asn Thr Thr Glu
210         215         220
Ala Asn Asn Leu Leu Ser Val Ala Val Asn Ala Gly Tyr Tyr Asp Val
225         230         235         240
Ser His Phe Leu Lys Glu Val Lys Thr Leu Ser Gly Gly Thr Ala Glu
245         250         255
Ser Phe Leu Ser Pro Thr Leu Pro Gln Glu Gly Leu Leu Thr Tyr Ile
260         265         270
Glu Lys

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<210> 8579
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 8579

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Ile Glu Asn Arg Gln Met Ile Glu Leu Ile Pro Ala Ile Asp Ile Ile
1          5          10          15
Asp Gly Lys Cys Val Arg Leu Ser Gln Gly Asp Tyr Gly Ser Lys Lys
20          25          30
Val Tyr Asn Glu Asn Pro Val Glu Val Ala Lys Glu Phe Glu Ala Asn
35          40          45
Gly Ile Arg Arg Leu His Val Val Asp Leu Asp Gly Ala Ala Ser His
50          55          60
His Val Val Asn Tyr Arg Thr Leu Asp Leu Ile Ala Ser Arg Thr Ser

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65		70		75		80									
Leu	Ile	Ile	Asp	Phe	Gly	Gly	Gly	Leu	Lys	Ser	Asp	Glu	Asp	Leu	Ile
			85						90					95	
Ile	Ala	Phe	Glu	Asn	Gly	Ala	Gln	Met	Val	Thr	Gly	Gly	Ser	Ile	Ala
			100					105						110	
Val	Arg	Asn	Pro	Asp	Leu	Phe	Cys	Arg	Trp	Ile	Asp	Arg	Tyr	Gly	Ser
			115				120					125			
Gly	Lys	Ile	Ile	Leu	Gly	Ala	Asp	Val	Lys	Asp	Arg	Arg	Ile	Ala	Val
			130			135					140				
Asn	Gly	Trp	Lys	Asp	Glu	Ser	Thr	Cys	Glu	Leu	Phe	Pro	Phe	Leu	Lys
					150					155					160
Asp	Tyr	Thr	Gln	Lys	Gly	Ile	Glu	Lys	Val	Ile	Cys	Thr	Asp	Ile	Ser
				165					170					175	
Cys	Asp	Gly	Met	Leu	Ala	Gly	Pro	Ser	Leu	Asp	Leu	Tyr	Lys	Glu	Ile
			180					185					190		
Leu	Ala	Glu	His	Pro	Thr	Leu	Tyr	Leu	Ile	Ala	Ser	Gly	Gly	Val	Ser
			195				200					205			
Ser	Ile	Ala	Asp	Ile	Glu	Ala	Leu	His	Glu	Ala	Gly	Val	Pro	Ala	Val
		210				215					220				
Ile	Phe	Gly	Lys	Ala	Leu	Tyr	Glu	Gly	Arg	Ile	Thr	Leu	Lys	Glu	Leu
					230				235						240
Gln	Ala	Phe	Leu												

<210> 8580

<211> 60

<212> PRT

<213> B.fragilis

<400> 8580

Thr	Leu	Pro	Arg	Gly	Leu	Arg	Thr	Ala	Leu	Pro	Val	Gly	Lys	Ser	Asp
1				5					10					15	
Glu	Arg	Leu	Leu	Leu	Gly	Gly	Val	Ile	Ser	Asn	Cys	Phe	Asp	Ser	Ser
			20				25						30		
Asp	Arg	Leu	His	Ile	Leu	His	Ile	Ile	Asp	Leu	Ser	Lys	Asp	Lys	Arg
			35				40					45			
Phe	Tyr	Arg	Asn	Asn	Asp	Leu	Leu	Leu	Val	Thr	Ile				
	50					55					60				

<210> 8581

<211> 639

<212> PRT

<213> B.fragilis

<400> 8581

Tyr	Ile	Leu	Met	Lys	Ile	Ile	Tyr	Lys	Leu	Leu	Phe	Leu	Phe	Leu	Leu
1				5					10					15	
Thr	Ile	Gly	Tyr	Ser	Ser	Cys	Asp	Phe	Leu	Asp	Ile	Val	Pro	Asp	Glu
			20					25					30		
Ile	Thr	Thr	Glu	Ala	Asp	Ala	Phe	Lys	Asp	Arg	Asn	Ala	Ala	Lys	Asn
			35				40					45			
Phe	Val	Tyr	Ser	Cys	Tyr	Gly	Tyr	Leu	Pro	Gln	Ser	Asn	Val	Ala	Ser
			50			55				60					
Gly	Ser	Leu	Asp	Leu	Leu	Thr	Gly	Asp	Glu	Val	Ile	Thr	Ala	Phe	Glu
					70				75						80
His	Glu	Thr	Phe	Ala	Ser	Phe	Pro	Lys	Gly	Asn	Tyr	Thr	Ala	Ser	Ser
				85				90						95	
Pro	Val	Ile	Ser	Tyr	Trp	Asn	Thr	Phe	Phe	Gln	Gly	Leu	Arg	Gln	Cys
				100				105						110	

Tyr	Ile	Phe	Leu	Glu	Asn	Val	Asp	Lys	Val	Pro	Asp	Leu	Thr	Glu	Ser
		115					120					125			
Val	Lys	Thr	Asp	Tyr	Ile	Ala	Gln	Val	Lys	Phe	Leu	Ile	Ala	Tyr	Tyr
		130				135					140				
His	Tyr	Gln	Leu	Ala	Arg	Cys	Tyr	Gly	Pro	Ile	Ile	Leu	Ile	Lys	Glu
145					150					155					160
Leu	Pro	Asp	Val	Asn	Ala	Ser	Gln	Ala	Glu	Tyr	Leu	Pro	Arg	Thr	Ser
				165					170					175	
Tyr	Asp	Glu	Cys	Val	Asp	Trp	Ile	Cys	Asn	Leu	Leu	Asp	Glu	Ala	Ala
			180					185					190		
Ser	Ser	Leu	Pro	Ala	Ile	Arg	Thr	Asn	Lys	Glu	Asp	Tyr	Gly	Leu	Ala
		195					200					205			
Thr	Ser	Val	Gly	Ala	Lys	Ala	Val	Lys	Ala	Lys	Met	Leu	Leu	Tyr	Ala
		210				215					220				
Ala	Ser	Pro	Leu	Phe	Asn	Gly	Asn	Ser	Ser	Phe	Tyr	Ser	Asn	Phe	Thr
225					230					235					240
Asp	Lys	Ser	Gly	Ser	Gln	Leu	Met	Pro	Leu	Thr	Tyr	Asp	Pro	Asn	Lys
				245					250					255	
Trp	Val	Lys	Ala	Lys	Thr	Ala	Ile	Lys	Glu	Ala	Ile	Asp	Leu	Ala	Glu
			260					265					270		
Gln	Asn	Gly	His	Ala	Leu	Tyr	Val	Lys	Gln	Asp	Tyr	Lys	Ile	Gly	Asn
		275					280					285			
Glu	Asp	Ala	Asn	Pro	Tyr	Pro	Ala	Ala	Gly	Pro	Val	Arg	Cys	Leu	Arg
		290				295					300				
Thr	Ser	Leu	Val	Asp	Trp	Asp	Ser	Arg	Asn	Pro	Glu	Val	Leu	Leu	Ala
305					310					315					320
Glu	Thr	Arg	Ser	Glu	Gly	Ser	Tyr	Gly	Ile	Gln	Asn	Lys	Ser	Leu	Pro
				325					330					335	
Phe	Val	Thr	Asp	Gly	Trp	Ala	Trp	Asn	Gly	Val	Gly	Pro	Thr	Trp	Thr
			340					345					350		
Met	Leu	Asn	Arg	Phe	Tyr	Thr	Lys	Asn	Gly	Leu	Pro	Trp	Asp	Glu	Asp
		355					360					365			
Pro	Glu	Tyr	Lys	Asp	Lys	Asp	Lys	Leu	Lys	Ile	Val	Asn	Val	Asp	Ala
		370				375					380				
Ser	His	Ala	Asp	Glu	Ala	His	Glu	Gly	Ser	Lys	Thr	Leu	Leu	Phe	Asn
385					390					395					400
Leu	Asp	Arg	Glu	Pro	Arg	Phe	Tyr	Ala	Trp	Val	Ala	Phe	Gln	Gly	Gly
				405					410					415	
Tyr	Tyr	Glu	Val	Met	Asn	Gly	Ser	Thr	Asn	Pro	Ala	Tyr	Val	Met	Ser
			420					425					430		
Asn	Gly	Lys	Lys	Asp	Asn	Ser	Asp	Ser	Arg	Leu	Ile	Cys	Asp	Phe	Val
		435					440					445			
Leu	Gly	Gly	Asn	Cys	Ser	Arg	Gly	Thr	Ala	Thr	Val	Gln	Arg	Pro	Gly
		450				455					460				

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<210> 8582
<211> 395
<212> PRT
<213> B.fragilis
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<400>	8582														
Ser 1	Asn	Asn	Ile	Thr 5	Met	Thr	Lys	Arg	Ile 10	Gly	Asn	Ser	Arg	Leu 15	Tyr
Ile	Leu	Ile	Phe 20	Ile	Gly	Ile	Val	Ser 25	Ala	Phe	Gly	Pro	Phe 30	Val	Thr
Asp	Phe	Tyr	Leu 35	Pro	Ala	Leu	Pro	Val 40	Leu	Ser	Glu	Tyr 45	Phe	Asp	Thr
Thr	Ala 50	Ser	Leu	Val	Gln	Leu 55	Ser	Leu	Thr	Phe	Ser 60	Met	Val	Gly	Leu
Ala 65	Val	Gly	Gln	Leu 70	Ile	Gly	Pro	Leu	Ser 75	Asp	Lys	Tyr	Gly	Arg 80	
Lys	Leu	Pro	Leu 85	Met	Val	Ser	Leu	Val 90	Ile	Phe	Cys	Ile	Ser	Thr 95	Val
Gly	Cys	Leu	Tyr 100	Ser	Pro	Glu	Ile	His 105	Gly	Phe	Ile	Phe 110	Ala	Arg	Leu
Leu	Gln	Gly	Leu 115	Ser	Gly	Ala	Gly	Gly 120	Val	Val	Ile	Ser 125	Lys	Ser	Ile
Ala	Ile 130	Asp	Leu	Tyr	Gln	Gly 135	Lys	Glu	Leu	Thr	Arg 140	Phe	Phe	Ala	Met
Leu 145	Ser	Ser	Val	Gln	Gly	Leu 150	Ala	Pro	Val	Cys	Ala 155	Pro	Val	Leu	Gly 160
Gly	Ile	Leu	Leu 165	Gly	Ala	Met	Asp	Trp	Lys 170	Gly	Ile	Phe	Trp	Ile 175	Leu
Leu	Ala	Ile	Gly 180	Ile	Leu	Leu	Ile	Val 185	Ala	Leu	Ser	Ala 190	Phe	Lys	Glu
Ser	Leu 195	Glu	Ile	Lys	Lys	Arg	Gln	Lys 200	Gly	Asn	Val	Phe 205	Ser	Thr	Phe
Lys	Tyr 210	Tyr	Leu	Pro	Val	Leu 215	Arg	Asn	Arg	Gln	Phe 220	Met	Arg	Tyr	Val
Leu 225	Ile	Gln	Ala	Phe	Ala	Met 230	Gly	Val	Met	Phe	Thr 235	Tyr	Ile	Ala	Ala 240
Ser	Pro	Phe	Ile 245	Phe	Gln	Asn	His	Phe	Gly 250	Thr	Ser	Pro	Phe	Ala 255	Tyr
Ser	Leu	Cys	Phe 260	Gly	Val	Asn	Ala	Leu 265	Gly	Ile	Met	Leu	Gly	Ser 270	Leu
Ala	Val	Ser	Arg 275	Phe	Lys	Asp	Ala	Thr 280	Ala	Ala	Leu	Arg 285	Phe	Gly	Val
Ala	Gly 290	Phe	Thr	Thr	Met	Ser	Leu	Pro 295	Val	Ala	Ala 300	Ala	Leu	Ile	Phe
Ser 305	Pro	Ser	Val	Trp	Ile	Val	Glu	Gly	Thr	Leu	Phe 315	Phe	Leu	Leu	Ala 320
Phe	Leu	Gly	Leu 325	Ile	Leu	Pro	Gly	Ser	Thr	Thr	Leu 330	Ala	Leu	Asp 335	Met
Glu	Arg	Lys	Asn 340	Ser	Gly	Asn	Ala	Ser 345	Ala	Leu	Leu	Gly	Phe	Leu	Met
Phe	Val	Phe	Gly	Gly	Leu	Leu	Ser	Pro	Leu	Thr	Gly	Ile	Gly	Asn	Met

355 360 365
 Leu Tyr Ser Thr Gly Ile Ile Val Ala Cys Cys Val Gly Thr Trp
 370 375 380
 Phe Phe Thr Tyr Lys Ala Thr Ser Ser Ala Arg
 385 390 395

<210> 8583
 <211> 105
 <212> PRT
 <213> B.fragilis

<400> 8583
 Leu Lys Asn Met Tyr Leu Cys Arg Gln Ile Lys Lys Arg Gln Pro Leu
 1 5 10 15
 Glu Leu Leu Ile Leu Tyr Leu Val Ile Val Asn Thr Val Ser Phe Val
 20 25 30
 Met Tyr Gly Ile Asp Lys Arg Asn Ala Ser Arg Lys Arg Trp Arg Thr
 35 40 45
 Pro Glu Val His Leu Leu Gly Ile Ala Val Ala Gly Ser Leu Gly
 50 55 60
 Ala Trp Ala Gly Met Tyr Thr Phe Arg His Lys Thr Arg His Leu Lys
 65 70 75 80
 Phe Lys Tyr Gly Ile Pro Val Ile Gly Val Leu Gln Val Gly Met Ala
 85 90 95
 Ile Cys Leu Leu Leu Ser Glu Phe Thr
 100 105

<210> 8584
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 8584
 Ser Ile Ser Ile Ile Lys Ile His Arg Glu Asp Ile Trp Ile Ser Ile
 1 5 10 15
 Lys Tyr Leu Arg His Leu Ile Glu Leu Val Leu Ala Ser Lys Thr
 20 25 30
 Lys Asp Val Ser Phe Val Ile Arg Gln Lys Glu Glu Thr Gln Gly Asn
 35 40 45
 Thr Val Glu Ile Tyr Ser Ile Thr Leu Leu Lys Asp Ile His Thr Asn
 50 55 60
 Arg Thr Asp Tyr Ala Ile Leu Leu Asn Val Pro Asp Thr Val Ile Ala
 65 70 75 80
 Tyr

<210> 8585
 <211> 247
 <212> PRT
 <213> B.fragilis

<400> 8585
 Leu Arg Ile Leu Gly Ile Leu Arg Ser Leu Arg Arg Glu Glu Glu Val
 1 5 10 15
 Gln Ala Thr Ile Asp Thr Tyr Leu Tyr Leu Pro Glu Ile Arg Lys His
 20 25 30
 Glu Val Gln Arg Phe Ile Ala Asn Arg Gln Tyr Asp Ser Ala Ile Leu
 35 40 45
 Leu Leu Asp Glu Gly Ile Arg Ile Ala Gln Lys Asn Arg Tyr Leu Gly

50	55	60
Thr Ile Arg Asp Trp	Leu Glu Gln Lys Leu Ser	Ile Tyr Glu Glu Thr
65	70	75
Asn Gln Thr Val Asn	Ile Ile Asp Leu Cys	Gln Gln Leu Phe Ile Ser
85	90	95
Gly Asn Gly Asp Ile	Thr Tyr Tyr His Lys	Leu Lys Lys Leu Ile Ala
100	105	110
Thr Asn Glu Trp Lys	Lys Phe Leu Ser Gly	Leu Met Lys Gln Ile Thr
115	120	125
Phe Ser Gly His Gly	Tyr Ser Gly Gln Cys	Asn Lys Met Asp Ile Tyr
130	135	140
Val Glu Glu Lys Asp	Tyr Glu Asn Leu Leu	Lys Met Leu Ser Asp His
145	150	155
His Ser Ser Leu Asp	Met Leu Met His Tyr	Ser His His Leu Asp Asn
165	170	175
Asn Tyr Ser Thr Glu	Ile Met Gln Leu Phe	Thr Glu Gln Ile Asn Arg
180	185	190
Tyr Ala Glu Met Asn	Ile Gly Arg Asn His	Tyr Glu Tyr Ile Glu Gln
195	200	205
Val Leu Lys Glu Met	Lys Lys Leu Lys Asp	Gly Lys Lys Thr Val Glu
210	215	220
Asp Ile Val Lys Lys	Phe Arg Ile Ala Tyr	Lys Arg Arg Pro Ala Met
225	230	235
Met Glu Thr Leu Ser	Lys Phe	
245		

<210> 8586

<211> 206

<212> PRT

<213> B.fragilis

<400> 8586

Ile Arg Thr Met Asp	Leu Asp Phe Asp	Lys Met Asn Gly	Leu Val Pro
1	5	10	15
Ala Ile Ile Gln Asp	Asn Asp Thr Arg	Lys Val Leu Met	Leu Gly Phe
20	25	30	
Met Asn Lys Glu Ala	Tyr Glu Lys Thr	Val Glu Thr Gly	Lys Val Thr
35	40	45	
Phe Phe Ser Arg Thr	Lys Asn Arg Leu Trp	Thr Lys Gly Glu	Glu Ser
50	55	60	
Gly Asn Phe Leu Asn	Val Ser Ile Lys	Glu Asp Cys Asp	Lys Asp
65	70	75	80
Thr Leu Leu Ile Gln	Val Asn Pro Val	Gly Pro Val Cys	His Thr Gly
85	90	95	
Thr Asp Thr Cys Trp	Gly Glu Lys Asn	Glu Glu Pro Val	Met Phe Leu
100	105	110	
Lys Leu Leu Gln Asp	Phe Ile Asp Arg	Arg His Glu Glu	Met Pro Glu
115	120	125	
Lys Ser Tyr Thr Thr	Ser Leu Phe Gln	Ser Gly Ile Asn	Lys Ile Ala
130	135	140	
Gln Lys Val Gly Glu	Glu Ala Val Glu	Thr Val Ile Glu	Ala Thr Asn
145	150	155	160
Gly Thr Asp Asp Arg	Leu Ile Tyr Glu	Gly Ser Asp Leu	Ile Tyr His
165	170	175	
Leu Ile Val Leu Leu	Thr Ser Lys Gly	Tyr Arg Ile Glu	Asp Leu Ala
180	185	190	
Arg Glu Leu Gln Ile	Arg His Ser Asp	Ser Trp Thr Lys	His
195	200	205	

<210> 8588
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 8588
 Leu Asn Ile Ile Glu Thr Glu Leu Asn Asp Tyr Pro Gln Phe Lys Lys
 1 5 10 15
 Lys Val Ser Phe His Asp Lys Thr Thr Lys Leu Lys Lys Glu Leu Lys
 20 25 30
 Thr Leu Ile Lys Thr Trp Asp Lys Tyr Thr Lys Asp Leu Arg Ile Phe
 35 40 45
 Leu Phe Val Asp Asp Ile Asp Arg Tyr Ser Glu Lys Lys Ile Ile Gln
 50 55 60
 Ser Ile Asp Ser
 65

<210> 8589
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 8589
 Asn Ile Lys Met Lys Val Ala Val Ile Lys Tyr Asn Ala Gly Asn Ile
 1 5 10 15
 Arg Ser Val Asp Tyr Ala Leu Lys Arg Leu Gly Val Glu Ala Val Ile
 20 25 30
 Thr Ser Asp Lys Glu Val Leu Lys Ala Ala Asp Lys Val Ile Phe Pro
 35 40 45
 Gly Val Gly Glu Ala Glu Thr Thr Met Leu His Leu Lys Glu Ser Gly
 50 55 60
 Met Asp Arg Phe Ile Lys Glu Leu Arg Gln Pro Val Leu Gly Ile Cys
 65 70 75 80
 Leu Gly Met Gln Leu Met Cys Arg Phe Ser Glu Glu Gly Asn Val Asp
 85 90 95
 Cys Leu Gly Ile Phe Asp Thr Asp Val Lys Arg Phe Ala Pro Arg Lys
 100 105 110
 His Glu Glu Lys Val Pro His Met Gly Trp Asn Thr Ile Ser Cys Leu
 115 120 125
 Lys Ser Asp Leu Phe Lys Gly Phe Thr Arg Asp Glu Phe Val Tyr Phe
 130 135 140
 Val His Ser Tyr Tyr Val Pro Val Ser Glu Phe Thr Ala Ala Glu Thr
 145 150 155 160
 Asp Tyr Ile Arg Pro Phe Ser Ala Ala Leu His Lys Asp Asn Phe Tyr
 165 170 175
 Ala Thr Gln Phe His Pro Glu Lys Ser Gly Glu Ala Gly Glu Arg Ile
 180 185 190
 Ile Lys Asn Phe Leu Glu Leu
 195

<210> 8590
 <211> 390
 <212> PRT
 <213> B.fragilis

<400> 8590
 Leu Phe Lys Met Lys Thr Val Phe Pro Ile His Lys Phe Arg Glu Leu
 1 5 10 15
 Pro Thr Pro Phe Tyr Tyr Tyr Asp Thr Lys Val Leu Arg Asp Thr Leu

20					25					30					
Ala	Cys	Val	Asn	Arg	Glu	Val	Ala	Arg	Tyr	Asp	Asn	Phe	Ser	Val	His
35					40					45					
Tyr	Ala	Val	Lys	Ala	Asn	Ala	Asn	Pro	Lys	Val	Leu	Thr	Ile	Ile	Arg
50					55					60					
Glu	Ser	Gly	Leu	Gly	Ala	Asp	Cys	Val	Ser	Gly	Gly	Glu	Ile	Arg	Ala
65					70					75					
Ala	Ile	Lys	Ala	Gly	Phe	Pro	Ala	Gly	Lys	Ile	Val	Phe	Ala	Gly	Val
85					90					95					
Gly	Lys	Ala	Asp	Trp	Glu	Ile	Asp	Leu	Gly	Leu	Asp	Tyr	Asp	Ile	Phe
100					105					110					
Cys	Phe	Asn	Val	Glu	Ser	Val	Pro	Glu	Leu	Glu	Val	Ile	Asn	Glu	Leu
115					120					125					
Ala	Ala	Ala	Lys	Gly	Lys	Val	Ala	Asn	Val	Ala	Phe	Arg	Ile	Asn	Pro
130					135					140					
Asn	Val	Gly	Ala	His	Thr	His	Ala	Asn	Ile	Thr	Thr	Gly	Leu	Ala	Glu
145					150					155					
Asn	Lys	Phe	Gly	Ile	Ser	Met	His	Asp	Met	Asp	Lys	Val	Ile	Asp	Val
165					170					175					
Ala	Leu	Glu	Leu	Lys	His	Val	Lys	Phe	Ile	Gly	Leu	His	Phe	His	Ile
180					185					190					
Gly	Ser	Gln	Ile	Leu	Asp	Met	Gly	Asp	Phe	Ile	Ala	Leu	Cys	Asn	Arg
195					200					205					
Val	Asn	Glu	Leu	Gln	Asp	Lys	Leu	Glu	Ala	Arg	His	Ile	Leu	Val	Glu
210					215					220					
His	Ile	Asn	Val	Gly	Gly	Gly	Leu	Gly	Ile	Asp	Tyr	Asp	His	Pro	Asn
225					230					235					
Arg	Gln	Pro	Ile	Pro	Asp	Leu	Ala	Asp	Ile	Ser	Arg	Thr	Tyr	Asp	Glu
245					250					255					
Pro	Leu	Lys	Phe	Arg	Pro	His	Gln	Thr	Leu	His	Phe	Glu	Leu	Gly	Arg
260					265					270					
Ala	Ile	Thr	Gly	Gln	Cys	Gly	Ser	Leu	Ile	Ser	Lys	Val	Leu	Tyr	Val
275					280					285					
Lys	Gln	Gly	Thr	Asn	Lys	Gln	Phe	Ala	Ile	Leu	Asp	Ala	Gly	Met	Thr
290					295					300					
Asp	Leu	Ile	Arg	Pro	Ala	Leu	Tyr	Gln	Ala	His	His	Lys	Met	Glu	Asn
305					310					315					
Leu	Thr	Ser	Glu	Asp	Pro	Val	Val	Glu	Thr	Tyr	Asp	Val	Val	Gly	Pro
325					330					335					
Ile	Cys	Glu	Ser	Ser	Asp	Val	Phe	Gly	Lys	Ala	Val	Asp	Leu	Asn	Lys
340					345					350					
Val	Lys	Arg	Gly	Asp	Leu	Ile	Ala	Leu	Arg	Ser	Ala	Gly	Ala	Tyr	Gly
355					360					365					
Glu	Ile	Met	Ala	Ser	Gly	Tyr	Asn	Cys	Arg	Glu	Leu	Pro	Lys	Gly	Tyr
370					375					380					
Ile	Ser	Glu	Glu	Leu	Val										
385					390										

<210> 8591

<211> 377

<212> PRT

<213> B.fragilis

<400> 8591

Arg	Lys	Lys	Ile	Ile	Asn	Ile	His	Thr	Asn	Phe	Asn	Thr	Val	Thr	Lys
1			5					10					15		
Met	Lys	Val	Leu	Lys	Phe	Gly	Gly	Thr	Ser	Val	Gly	Ser	Ala	Gln	Arg
		20					25					30			
Met	Lys	Glu	Val	Ala	Lys	Leu	Ile	Thr	Asp	Gly	Glu	Arg	Lys	Ile	Val

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      35              40              45
Val Leu Ser Ala Met Ser Gly Thr Thr Asn Thr Leu Val Glu Ile Ser
  50              55              60
Asp Tyr Leu Tyr Lys Lys Asn Pro Glu Gly Ala Asn Glu Ile Ile Asn
  65              70              75              80
Lys Leu Glu Ala Lys Tyr Lys Gln His Val Asp Glu Leu Tyr Ala Thr
      85              90              95
Glu Glu Tyr Lys Gln Lys Gly Leu Glu Val Ile Lys Ser His Phe Asp
      100              105              110
Tyr Ile Arg Ser Tyr Thr Lys Asp Leu Phe Thr Leu Phe Glu Glu Lys
      115              120              125
Val Val Leu Ala Gln Gly Glu Leu Ile Ser Thr Ala Met Val Asn Tyr
      130              135              140
Tyr Leu Gln Glu Cys Gly Val Lys Ser Val Leu Leu Pro Ala Leu Glu
  145              150              155              160
Tyr Met Arg Thr Asp Lys Asn Ala Glu Pro Asp Pro Val Tyr Ile Lys
      165              170              175
Asp Lys Leu Gln Ala Gln Leu Asp Leu Tyr Pro Asp Ala Glu Ile Tyr
      180              185              190
Ile Thr Gln Gly Phe Ile Cys Arg Asn Ala Tyr Gly Glu Ile Asp Asn
      195              200              205
Leu Gln Arg Gly Gly Ser Asp Tyr Thr Ala Ser Leu Val Gly Ala Ala
      210              215              220
Ile His Ala Ser Glu Ile Gln Ile Trp Thr Asp Ile Asp Gly Met His
  225              230              235              240
Asn Asn Asp Pro Arg Ile Val Asp Lys Thr Ala Pro Val Arg Gln Leu
      245              250              255
His Phe Glu Glu Ala Ala Glu Leu Ala Tyr Phe Gly Ala Lys Ile Leu
      260              265              270
His Pro Thr Cys Ile Gln Pro Ala Lys Tyr Ala Asn Ile Pro Val Arg
      275              280              285
Leu Leu Asn Thr Met Asp Pro His Ala Pro Gly Thr Leu Ile Ser Asn
      290              295              300
Asp Thr Glu Lys Gly Lys Ile Lys Ala Val Ala Ala Lys Gly Asn Ile
  305              310              315              320
Thr Ala Ile Lys Ile Lys Ser Ser Arg Met Leu Leu Ala His Gly Phe
      325              330              335
Leu Arg Lys Val Phe Glu Ile Phe Glu Ser Tyr Gln Thr Ser Ile Asp
      340              345              350
Met Ile Cys Thr Ser Glu Val Glu Phe Pro Tyr Leu Ser Ile Thr Pro
      355              360              365
Ser Ile Ser Thr Arg Ser Trp Met Thr
      370              375

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<210> 8592

<211> 446

<212> PRT

<213> B.fragilis

<400> 8592

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Lys Lys Glu Ile Gln Met Asn Ile Ala Ile Ser Gly Ala Ser Gly Phe
  1              5              10              15
Ile Gly Lys His Leu Thr Glu Tyr Leu Thr Glu Val Gly His Arg Val
      20              25              30
Ile Pro Leu Gly Arg Pro Met Phe Arg Glu Gly Thr Ser Gly His Leu
      35              40              45
Ile Gln Ala Leu Ser His Cys Asp Val Ile Ile Asn Leu Ala Gly Ala
      50              55              60
Pro Ile Gly Lys Arg Trp Thr Pro Glu Tyr Lys Lys Glu Leu Tyr Asp

```

65 70 75 80
 Ser Arg Ile Lys Val Thr His Cys Ile Ile Arg Ala Met Asp Ala Val
 85 90 95
 Lys Thr Lys Pro Arg Leu Met Ile Ser Ala Ser Ala Val Gly Tyr Tyr
 100 105 110
 Pro Glu Glu Gly Thr Phe Asp Glu Tyr Thr Asn Thr Arg Gly Ser Gly
 115 120 125
 Phe Leu Ala Glu Leu Cys Tyr Ala Trp Glu Lys Glu Ala Arg Arg Cys
 130 135 140
 Pro Ser Gln Thr Arg Leu Val Ile Thr Arg Phe Gly Ile Val Leu Ser
 145 150 155 160
 Pro Asp Gly Gly Ala Met Glu Gln Met Leu Arg Pro Leu Arg Ile Thr
 165 170 175
 Arg Val Ala Gly Val Ile Gly Pro Gly Thr Gln Pro Phe Pro Trp Ile
 180 185 190
 Ala Ile Gln Asp Leu Cys Arg Ala Met Glu Phe Ile Ile Ser His Glu
 195 200 205
 Glu Ala Ser Gly Val Phe Asn Leu Val Thr Pro Gln Gln Val Ser Gln
 210 215 220
 Tyr Ala Phe Thr Gln Ala Met Ala Ala Arg Tyr His Ala Trp Met Lys
 225 230 235 240
 Ala Val Val Pro Arg Trp Phe Phe Arg Met Arg Tyr Gly Glu Ala Ala
 245 250 255
 Ser Phe Leu Ala Ser Gly Gln Asn Val Arg Pro Thr Arg Leu Leu Glu
 260 265 270
 Ala Gly Phe Arg Phe Ala Lys Pro Thr Ile Glu Asp Phe Phe Glu Gly
 275 280 285
 Thr Asp His Ala Ala Val Asp Arg Leu Asp Leu His Arg Tyr Met Gly
 290 295 300
 Thr Trp Tyr Glu Ile Ala Arg Phe Asp His Arg Phe Glu Arg Gly Leu
 305 310 315 320
 Ser Glu Val Thr Ala Thr Tyr Thr Leu Met Pro Asp Gly Thr Val Arg
 325 330 335
 Val Glu Asn Arg Gly Cys Lys His Lys Lys Pro Tyr Asp Val Cys Lys
 340 345 350
 Thr Ala Glu Gly Arg Ala Lys Ile Pro Asp Pro Ser Gln Pro Gly Lys
 355 360 365
 Leu Lys Val Ser Phe Phe Leu Ser Phe Tyr Ser Asp Tyr Tyr Val Leu
 370 375 380
 Glu Leu Asp Gln Asp Glu Tyr Asn Tyr Ala Leu Ile Gly Ser Ser Ser
 385 390 395 400
 Asp Lys Tyr Leu Trp Ile Leu Ser Arg Ala Pro Ile Leu Pro Glu Glu
 405 410 415
 Ile Lys Lys Lys Leu Leu Asp Ala Ala Thr Arg Arg Gly Tyr Asp Val
 420 425 430
 Lys Lys Leu Ile Trp Val Glu Gln Arg Glu Lys Lys Ile Met
 435 440 445

<210> 8593

<211> 320

<212> PRT

<213> B.fragilis

<400> 8593

Ser Gly Pro Ile Cys Arg Pro Glu Asp Ser Pro Tyr Leu Cys His Met
 1 5 10 15
 Ala Glu Arg Asn Glu Leu His Lys Arg Asn Arg His Asn Gly Gln Tyr
 20 25 30
 Asp Phe Ser Arg Leu Thr Glu Glu Tyr Pro Pro Leu Lys Lys Phe Ile

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      35              40              45
Val Leu Asn Ala Tyr Gly Thr Thr Ser Ile Asp Phe Phe Asn Pro Arg
      50              55              60
Ala Val Lys Ala Leu Asn Lys Ala Leu Leu Ile Ser Tyr Tyr Gly Ile
      65              70              75              80
Arg Tyr Trp Asp Ile Pro Lys Asn Tyr Leu Cys Pro Pro Ile Pro Gly
      85              90              95
Arg Ala Asp Tyr Ile His Tyr Ile Ala Asp Leu Ile Gln Pro Asp Ile
      100              105              110
Ser Asp Glu Ser Thr Gly Leu Lys Thr Ala Val Pro Asn Thr Arg Gln
      115              120              125
Tyr Arg Cys Leu Asp Ile Gly Val Gly Ala Asn Cys Ile Tyr Pro Ile
      130              135              140
Ile Gly Gln Thr Glu Tyr Gly Trp Thr Phe Val Gly Ser Asp Ile Asp
      145              150              155              160
Pro Val Ser Ile Asp Asn Ala Arg Lys Ile Val Thr Cys Asn Pro Ala
      165              170              175
Leu Ala His Lys Ile Glu Leu Arg Leu Gln Gln Asp Ser Arg Lys Ile
      180              185              190
Phe Glu Gly Ile Ile Ala Pro Asn Glu Tyr Phe Asp Val Thr Leu Cys
      195              200              205
Asn Pro Pro Phe His Ser Ser Lys Glu Glu Ala Glu Asp Gly Thr Leu
      210              215              220
Arg Lys Leu Ser Ser Leu Lys Gly Gln Lys Val Thr Lys Ala Arg Leu
      225              230              235              240
Asn Phe Gly Gly Asn Ala Asn Glu Leu Trp Cys Glu Gly Gly Glu Leu
      245              250              255
Arg Phe Leu Leu Thr Met Ile Glu Glu Ser Arg Asn Tyr Arg Lys Asn
      260              265              270
Cys Gly Trp Phe Thr Ser Leu Val Ser Lys Glu Lys Asn Leu Gly Lys
      275              280              285
Leu Thr Ala Lys Leu Lys Ser Thr Asp Ile Ala Glu His Arg Ile Ile
      290              295              300
Glu Met His Gln Gly Thr Lys Thr Ser Arg Ile Leu Ala Trp Arg Phe
      305              310              315              320

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<210> 8594

<211> 303

<212> PRT

<213> B.fragilis

<400> 8594

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Gln Asp Arg Ile Thr Ala Leu Ser Val Lys Pro Ala Thr Phe Val Pro
1              5              10              15
Glu Pro Asn Gly Thr Lys Thr Met Lys Ser Asp Thr Glu Glu Lys Tyr
      20              25              30
Leu Gln Gln Val Asn Arg Val Ile Asp Tyr Ile Asn Ser His Leu Asn
      35              40              45
Glu Pro Leu Arg Val Glu Thr Leu Ala Arg Glu Val Cys Leu Ser Glu
      50              55              60
Tyr His Phe His Arg Ile Met Arg Ala Tyr Leu His Glu Pro Leu Ala
      65              70              75              80
Thr Tyr Ile Ala Arg Gln Arg Val Glu Arg Ala Val Met Tyr Leu Gln
      85              90              95
Met Lys Asn Ile Arg Leu Ala Gln Val Ala Glu Met Val Gly Tyr Glu
      100              105              110
Thr Pro Gln Ser Leu Ser Lys Ala Phe Lys Gln Phe Phe Gly Ile Ser
      115              120              125
Pro Thr Ala Tyr Arg Lys Arg Arg Ala Glu Arg Tyr Glu Glu Phe Ser

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      130              135              140
Thr Leu Lys Lys Glu Ser Leu Lys Pro Glu Ile Leu Thr Glu Pro Glu
145              150              155              160
Leu Lys Leu Val Tyr Ile Arg Ile Ile Gly Arg Tyr Gly Glu Glu Glu
      165              170              175
Pro Tyr Ile Glu Ala Trp Arg Lys Leu Arg Asp Phe Leu Gln Ile Asn
      180              185              190
Gly Leu Leu Thr Pro Ser Thr Arg Trp Ile Gly Ile Ser Phe Asp Asp
      195              200              205
Pro Thr Val Thr Lys Thr Glu Gln Cys Arg Phe Tyr Ala Cys Ala Thr
      210              215              220
Val Glu His Asp Val Ser Pro Gln Gly Ala Phe Gly Met Lys Thr Ile
225              230              235              240
Pro Gln Gly Arg Tyr Ala Val Tyr Thr Leu Arg Gly Ser Tyr Ser Gly
      245              250              255
Leu Gln Glu Met Tyr Asp Arg Ile Tyr Ser His Pro Leu Pro Thr Ala
      260              265              270
Phe Arg Asp Ala Thr Ser Phe Glu Glu Tyr Leu Asn Cys Glu Pro Asp
      275              280              285
Met Glu Glu Lys Asp Tyr Val Thr Arg Ile Tyr Ile Pro Ile Glu
      290              295              300

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<210> 8595

<211> 256

<212> PRT

<213> B.fragilis

<400> 8595

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Arg Pro Leu Val Pro Ser Leu Asn Asp Tyr Arg Ile Gly Tyr Ser Leu
1      5      10      15
Phe Pro Glu Ile Ile Asp Leu Ser Asn Tyr Lys Trp Val Val Phe Tyr
      20      25      30
Ser Gln Glu Leu Val Gly Ser Ile Gly Lys Arg Trp Phe Ser Cys Ser
      35      40      45
Ile Glu Val Tyr Cys Cys Leu Phe Cys Arg Val Gly Gly Glu Tyr Ser
      50      55      60
Phe Tyr Lys Leu Ile Phe Val Phe Gln Tyr Phe Gly His Leu Arg Leu
65      70      75      80
Tyr Ser Cys Arg Ile Tyr Val Ser Thr Thr His Lys Gly Lys Lys Lys
      85      90      95
Asn Trp Asp Leu Ser Phe Ile Ala Phe His Phe Leu Phe Leu Leu Leu
      100      105      110
Phe Leu His Pro Leu Ser Ser Lys Pro Asn Thr Ala Val Ile Met Lys
      115      120      125
Ser Ile Glu Val Val Ala Ala Val Ile Arg Ser Gly Gly Lys Tyr Leu
      130      135      140
Cys Val Gln Arg Gly Arg Thr Lys Phe Ser Tyr Thr Ser Phe Arg Tyr
145      150      155      160
Glu Phe Pro Gly Gly Lys Val Glu Lys Gly Glu Ser Leu Gln Glu Ala
      165      170      175
Leu Gln Arg Glu Ile Met Glu Glu Met Asp Tyr Thr Ile Glu Val Gly
      180      185      190
Glu Lys Leu Leu Thr Val His His Ile Tyr Pro Asp Phe Glu Ile Thr
      195      200      205
Met His Ala Phe Leu Cys His Pro Ile Gly Glu Gln Tyr Val Leu Lys
      210      215      220
Glu His Ile Ala Ala Gln Trp Leu Phe Pro Gly Glu Met Val Thr Leu
225      230      235      240
Asp Trp Ala Glu Ala Asp Lys Pro Val Val Lys Lys Ile Ser Glu Gln

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245

250

255

<210> 8596
 <211> 319
 <212> PRT
 <213> B.fragilis

<400> 8596

Ala	Ile	Cys	Phe	Thr	Leu	Pro	Val	Ser	Leu	Ser	Trp	Leu	Ala	Val	Leu
1				5					10					15	
Gly	His	Gly	Ser	Leu	Leu	Ile	Lys	Gln	Pro	His	Pro	Pro	Ala	Ser	Arg
			20					25					30		
Leu	Leu	Gln	Asp	Lys	Ile	Trp	Lys	Ile	Gln	Leu	Ile	His	Phe	Pro	His
			35				40					45			
Ser	Val	Pro	Cys	Leu	Ile	Phe	Ile	Ser	Tyr	Leu	Cys	Leu	Lys	Pro	Leu
	50					55					60				
Asp	Met	Asn	Ser	Asp	Met	Lys	Arg	Ala	Ile	Ile	Ile	Gly	Ala	Thr	Ser
65					70					75					80
Gly	Ile	Gly	Arg	Glu	Val	Ala	Lys	Gln	Leu	Leu	Leu	Gln	Gly	Trp	Arg
				85				90						95	
Leu	Gly	Ile	Ala	Gly	Arg	Arg	Leu	Pro	Ala	Leu	Glu	Ala	Leu	Gln	Ser
			100					105						110	
Ser	Ala	Pro	Asp	Leu	Ile	Glu	Ile	Ala	Val	Leu	Asp	Val	Thr	Gln	Pro
		115					120					125			
Asp	Ala	Thr	Pro	Lys	Leu	Asn	Asn	Leu	Ile	Arg	Arg	Val	Gly	Gly	Met
		130				135					140				
Asp	Leu	Phe	Leu	Leu	Ser	Ser	Gly	Ile	Gly	Tyr	Gln	Asn	Met	Glu	Leu
145					150					155					160
Asn	Pro	Asp	Ile	Glu	Leu	Asp	Thr	Ala	Arg	Thr	Asn	Val	Glu	Gly	Phe
				165					170					175	
Met	Arg	Met	Ala	Asp	Thr	Ala	Phe	His	His	Phe	Arg	Glu	His	Gly	Gly
			180					185					190		
Gly	Gln	Leu	Ala	Val	Ile	Ser	Ser	Ile	Ala	Gly	Thr	Lys	Gly	Leu	Gly
		195					200					205			
Val	Ala	Pro	Ala	Tyr	Ser	Ala	Thr	Lys	Arg	Phe	Gln	Asn	Thr	Tyr	Ile
		210				215					220				
Asp	Ala	Leu	Glu	Gln	Leu	Ala	Gly	Met	Gln	Lys	Leu	Asn	Ile	Arg	Phe
225					230					235					240
Thr	Asp	Met	Arg	Pro	Gly	Phe	Val	Ser	Thr	Asp	Leu	Leu	Asn	Asp	Gly
				245					250					255	
Lys	His	Tyr	Pro	Leu	Leu	Met	Arg	Pro	Glu	Lys	Val	Ala	Lys	Arg	Ile
			260					265						270	
Val	Arg	Ala	Leu	Asn	Arg	Gln	Pro	Thr	Gly	Ser	Gly	Asp	Arg	Leu	Ala
		275					280					285			
Leu	Cys	His	Tyr	Arg	Leu	Phe	Met	Val	Asn	Asp	Ser	Ala	Pro	Asp	Met
		290				295					300				
Glu	Thr	Ile	Thr	His	Thr	Asp	Arg	Thr	Glu	Thr	Asp	Arg	Lys	Lys	
305					310					315					

<210> 8597
 <211> 572
 <212> PRT
 <213> B.fragilis

<400> 8597

Ile	Ser	Leu	Phe	Tyr	Met	Lys	Arg	Leu	Ser	Thr	Leu	Cys	Leu	Leu	Ala
1				5					10					15	
Ala	Gly	Phe	Phe	Ile	Pro	Gly	Gln	Ala	His	Gln	Ala	Arg	Pro	Thr	Val
			20					25					30		

Leu Asp Ser Val Tyr Ala Pro Leu Lys Val Ala Thr Pro Pro Ser Asp
 35 40 45
 Ala Tyr Ile Gly Leu Ser Leu Asp Asn Gly Glu Ile Arg His Tyr
 50 55 60
 Asn Tyr Gly Glu Gln Ala Val Ala Gly Thr Val Tyr Leu Ser Ser Thr
 65 70 75 80
 Asp His Gly Leu Thr Trp Lys Arg Val Asn Arg Pro Lys Glu Met Pro
 85 90 95
 Phe Ala Asp Cys Gln Ser Pro Val Ser Lys Glu Tyr Ile Arg Leu Val
 100 105 110
 Asp Met Gly Ala Met Gly Val Tyr Cys Ile Arg Thr Ser Gly Gly Leu
 115 120 125
 Thr Gly Gly Arg Thr Leu Thr Lys Val Ala Asp Arg Asn Ser Ile Met
 130 135 140
 Ile Lys Pro Pro Val Phe Ile Arg Asn Gly Lys Arg Ile Val Val Ala
 145 150 155 160
 Ala His Gly Gly Val Thr Pro Lys Gly Cys Tyr Thr Tyr Phe Ser Asp
 165 170 175
 Asp Asp Gly Leu Thr Trp Lys Cys Ser Asn Thr Val Thr Ser Pro Asp
 180 185 190
 His Gln Gly Gly Phe His Lys Gly Ile Arg Trp Asn His Gly Ala
 195 200 205
 Val Glu Pro Thr Val Val Glu Leu Lys Asp Gly Thr Leu Trp Met Leu
 210 215 220
 Met Arg Thr Ser Gln Asp Phe His Tyr Gln Ala Phe Ser Lys Asp Gly
 225 230 235 240
 Gly Gln Thr Trp Gly Glu Ser Glu Pro Ser Pro Phe Tyr Gly Thr Ile
 245 250 255
 Thr Met Pro Thr Leu Gly Arg Leu Ala Asp Gly Arg Leu Leu Leu Phe
 260 265 270
 Trp Cys Asn Thr Thr Pro Leu Pro Glu Lys Glu Gly Thr Asp Gly Val
 275 280 285
 Trp Asp Asp Val Phe Thr Asn Arg Asp Val Thr His Val Ala Val Ser
 290 295 300
 Asp Asp Asp Gly Lys Thr Trp Lys Gly Phe Arg Glu Leu Tyr Met Asn
 305 310 315 320
 Pro Met Arg Asn Asp Ile Asp Tyr Ala Val His Gly Gly Gly Ile Asp
 325 330 335
 Arg Gly Val His Gln Ala Gln Phe Val Glu Val Ala Pro Gly Lys Val
 340 345 350
 Leu Ala Ser Ile Gly Gln His Pro Leu His Arg Ala Met Met Met Phe
 355 360 365
 Asp Val Asn Trp Leu Tyr Glu Lys Ser Arg Phe Asn Asp Phe Thr Asp
 370 375 380
 Ser Leu Ser Gln Trp Ser Thr Phe Asn Tyr Met Asn Gly Ile Lys Gly
 385 390 395 400
 His Cys Ala Tyr Asn Arg Ile Gln Gly Cys Met Leu Glu Pro His Pro
 405 410 415
 Arg Lys Glu Gly Arg Gln Val Leu His Leu Thr Tyr Arg Pro Asp Ala
 420 425 430
 Ser Leu Val Ala Asp Thr Arg Gly Ala Val Trp Asn Phe Pro Ala Met
 435 440 445
 Lys Lys Gly Thr Phe Thr Val Ser Leu Arg Ile Pro Glu Gly Ser His
 450 455 460
 Ser Val Ser Leu Leu Leu Asn Asp Arg Trp Met Asn Pro Ser Asp Thr
 465 470 475 480
 Val Ala Arg Tyr Gln Ser Met Tyr Glu Leu Pro Leu Thr Arg Lys Gln
 485 490 495
 Leu Gly Val Lys Asp Asp Arg Trp His Glu Val Ser Leu Glu Trp Asp

500	505	510
Leu Leu Gln Lys His Pro Gln Ala Arg Val Arg Val Asp Gly Arg Leu		
515	520	525
Arg Pro Leu Arg Leu Pro Leu Lys Asn Lys Ser Gln Asn Gly Ile Ser		
530	535	540
Tyr Val His Phe Ile Ala Pro Pro Ala Glu Ala Asn Pro Gly Val Tyr		
545	550	555
Leu Glu Trp Val Arg Ala Glu Ala Asp Gly Ala Ile		
565	570	

<210> 8598

<211> 1242

<212> PRT

<213> B.fragilis

<400> 8598

Trp Arg Leu Ser Ala Ile Trp Lys Ser Trp Ser Leu Ala Leu Thr Tyr		
1	5	10
Gln Lys Arg Tyr Arg Met Arg Tyr Leu Asn Lys Ile Ile Phe Ile Asn		
20	25	30
Ser Ala Arg Ile Gln Tyr Ala Glu Ile Gln Ile Asp Gly Asn Val His		
35	40	45
Phe Ile Gly Thr Gln Gly Val Gly Lys Ser Thr Ala Leu Arg Ala Leu		
50	55	60
Leu Phe Phe Tyr Asn Ala Asp Lys Thr Lys Leu Gly Ile Ser Lys Glu		
65	70	75
Lys Lys Ser Phe Asp Glu Tyr Tyr Phe Pro Tyr Val Asn Ser Tyr Ile		
85	90	95
Ile Tyr Glu Val Val Val Asp Asp Ala Ser Tyr Cys Val Leu Ala Phe		
100	105	110
Arg Ser Gln Gly Arg Val Cys Phe Arg Phe Leu Gly Thr Gly Tyr Lys		
115	120	125
Lys Glu Tyr Phe Ile Ser Pro Glu Gly Lys Ala Tyr Glu Glu Trp Asp		
130	135	140
Gln Ile Arg Asp Ala Leu Gly Ser Phe Val Tyr Lys Ser Arg Arg Ile		
145	150	155
Glu Thr Tyr Glu Glu Tyr Arg Asp Ile Ile Phe Gly Asn Gly Arg Gly		
165	170	175
Leu Pro Pro Glu Phe Arg Lys Phe Ala Ile Thr Glu Ser Arg Gln Tyr		
180	185	190
Gln Asn Ile Pro Arg Thr Ile Gln Asn Val Phe Leu Asn Ser Lys Leu		
195	200	205
Asp Ala Glu Phe Ile Lys Gln Thr Ile Ile Met Ser Leu Asn Glu Glu		
210	215	220
Asp Val Arg Ile Asp Leu Gly Gln Tyr Ala His His Leu Arg Arg Phe		
225	230	235
Asp Glu Glu Val Thr Asp Ile Ser Lys Trp Phe Arg Lys Asn Lys Asn		
245	250	255
Gly Glu Val Thr Val Arg Arg Gln Ala Asp Arg Val Ile Glu Leu Tyr		
260	265	270
Arg Glu Met His Tyr Leu Glu Gln Gln Ala Arg Thr Leu Ala Gly Glu		
275	280	285
Leu Asn Tyr Ala Phe Arg Thr Ala Arg Glu Val Leu Pro Ser Leu Gln		
290	295	300
Lys Gln Lys Glu Glu Leu Lys Glu Val Ala Lys Glu Lys Arg Gln		
305	310	315
Leu Glu Glu Leu Ser Gly Lys Phe Gln Ser Glu Arg Asp Arg Leu Leu		
325	330	335
Gly Val Val Lys Val Gln Asn Glu Asn Leu Lys Thr Ala Arg Glu Arg		

Gln Glu Leu Val Phe Ile Asp Gln His Arg Arg Leu Val Tyr Asp Tyr
 820 825 830
 Glu Lys Asp Lys Arg Glu Phe Phe Asp Arg Met Asp Glu Phe Arg Asn
 835 840 845
 Glu Lys Gln Leu Ala Glu Lys Glu Leu Glu Gly Glu Lys Glu Lys Phe
 850 855 860
 Arg Leu Lys Glu Glu Glu Leu Asn Leu Lys Met Thr Gly Leu Asn Lys
 865 870 875 880
 Gln Leu Ala Glu Thr Asn Thr Arg Leu Lys His Leu Asp Glu Asp Ile
 885 890 895
 Arg Glu Thr Glu Asn Phe Lys Thr Leu Asn Ile Cys Pro Pro Val Leu
 900 905 910
 Gln Thr Gly Val Glu Thr Glu Asn Ala Lys Arg Cys Lys Lys Val Ile
 915 920 925
 Glu Glu Leu Thr Gln Asn His Tyr Arg Gln Ile Glu Gln Glu Lys Asp
 930 935 940
 Phe Arg Glu Ala Val Gly Arg Phe Ser Gly Asn Phe Ser Glu Gln Asn
 945 950 955 960
 Thr Phe Asn Phe Arg Thr Arg Leu Thr Lys Arg Glu Glu Phe Met Thr
 965 970 975
 Phe Ala Ala Asp Leu Lys Glu Phe Ile Asp Asn Asp Lys Ile Ile Asp
 980 985 990
 Phe Glu Arg Arg Ser Asn Glu Ala Tyr Thr Asp Leu Ile His Arg Ile
 995 1000 1005
 Gly Lys Glu Thr Thr Asp Met Leu Ser Lys Glu Gly Leu Ile Arg Lys
 1010 1015 1020
 Thr Ile Ser Asp Ile Asn Ser Asp Phe Val Glu Arg Asn Phe Ala Gly
 1025 1030 1035 1040
 Val Ile Lys Ser Ile Ala Leu Gln Ile Val Pro Ser Gly Asn Arg Ile
 1045 1050 1055
 Met Gln His Phe Val Thr Ile Lys Glu Phe Cys Asp Arg Asn Gln Pro
 1060 1065 1070
 Gly Ala Pro Gly Met Phe Ser Leu Phe Gly Gln Glu Asp Phe Val Glu
 1075 1080 1085
 Arg Asn Arg Gln Ala Val Ser Leu Leu Gln Ser Leu Val Lys Glu Leu
 1090 1095 1100
 Ala Leu Asn Lys Glu Lys Glu Leu Thr Leu Ser Asp Thr Phe Glu Leu
 1105 1110 1115 1120
 Gln Phe Arg Ile Val Glu Asn Asp Asn Asp Ser Gly Trp Val Glu Lys
 1125 1130 1135
 Leu Ala Asn Val Gly Ser Asp Gly Thr Asp Ile Leu Val Lys Ala Met
 1140 1145 1150
 Ile Asn Ile Met Leu Leu Asn Val Phe Lys Glu Lys Ala Ser His Gln
 1155 1160 1165
 Phe Asn Asp Phe Lys Leu His Cys Met Met Asp Glu Ile Gly Lys Leu
 1170 1175 1180
 His Pro Asn Asn Ile Lys Gly Ile Leu Asp Phe Ala Asn Asn Arg Asn
 1185 1190 1195 1200
 Ile Ile Leu Val Asn Ser Ser Pro Thr Ser Tyr Arg Ala Ser Asp Tyr
 1205 1210 1215
 Lys Tyr Thr Tyr Ile Leu Asn Lys Asp Lys Arg Asn Ile Thr Ser Val
 1220 1225 1230
 Thr Arg Leu Ile Lys Gln Glu Val Arg Glu
 1235 1240

<210> 8599

<211> 68

<212> PRT

<213> B.fragilis

<400> 8599

Gly Arg Val Ser Val Ser Val Asp Asn Thr Lys His Leu Asn Glu Ile
 1 5 10 15
 Leu Asp Asp Leu Lys Lys Tyr Gly Thr Val Thr Val Asp Lys Asp Met
 20 25 30
 Cys Ile Ile Cys Val Val Gly Asp Leu Glu Trp Glu Asn Val Gly Phe
 35 40 45
 Glu Ala Lys Ala Leu Asp Ala Met Arg Asp Ile Thr Val Arg Met Ile
 50 55 60
 Ser Phe Gly Gly
 65

<210> 8600

<211> 111

<212> PRT

<213> B.fragilis

<400> 8600

Thr Ser Ser Pro Thr Ser Leu Lys Lys Glu Val Ser Met Glu Ile Arg
 1 5 10 15
 Ile Gln Ser Ile His Phe Asp Ala Thr Glu Gln Leu Gln Ala Phe Ile
 20 25 30
 Gln Lys Lys Val Ser Lys Leu Glu Lys Tyr Tyr Glu Asp Ile Lys Lys
 35 40 45
 Val Glu Val Ser Leu Lys Val Val Lys Pro Glu Ala Ala Glu Asn Lys
 50 55 60
 Glu Ala Gly Ile Thr Val Leu Val Pro Asn Asn Asp Phe His Ala Ser
 65 70 75 80
 Lys Ile Cys Asp Thr Phe Glu Glu Ala Val Asp Leu Cys Val Glu Ala
 85 90 95
 Leu Glu Lys Gln Leu Val Lys Tyr Lys Glu Lys Gln Arg Asn Lys
 100 105 110

<210> 8601

<211> 174

<212> PRT

<213> B.fragilis

<400> 8601

Asn Arg Val Thr Met Arg Lys Glu Asp Lys Asn Thr Ile Ile Glu Gln
 1 5 10 15
 Ile Ala Ala Thr Val Gln Glu Tyr Gly His Phe Tyr Leu Val Asp Thr
 20 25 30
 Thr Ala Met Asn Ala Ala Ala Thr Ser Glu Leu Arg Arg Ala Cys Phe
 35 40 45
 Lys Ala Asp Ile Lys Leu Met Val Val Lys Asn Thr Leu Leu His Lys
 50 55 60
 Ala Leu Glu Ser Ile Glu Gly Asp Phe Ser Pro Leu Tyr Asp Ser Leu
 65 70 75 80
 Lys Gly Thr Thr Ala Val Met Phe Cys Asn Val Ala Asn Ala Pro Ala
 85 90 95
 Lys Leu Ile Lys Asp Lys Ser Lys Asp Gly Ile Pro Gly Leu Lys Ala
 100 105 110
 Ala Tyr Ala Glu Glu Ser Phe Tyr Val Gly Ala Asp Gln Leu Asp Ala
 115 120 125
 Leu Val Ala Ile Lys Ser Lys Asn Glu Val Ile Ala Asp Ile Val Ala
 130 135 140
 Leu Leu Gln Ser Pro Ala Lys Asn Val Ile Ser Ala Leu Gln Ser Gly

145 150 155 160
 Gly Asn Thr Leu His Gly Val Leu Lys Thr Leu Gly Glu Arg
 165 170

<210> 8602
 <211> 196
 <212> PRT
 <213> B.fragilis

<400> 8602
 Leu Ser Pro Tyr Trp Leu Gln Asn Ser Tyr Leu Cys Lys Ser Ala Ala
 1 5 10 15
 Glu Phe Glu Ile Ser Ile Lys Gln Gln Ser Met Ala Leu Ile Lys Ser
 20 25 30
 Val Arg Gly Phe Thr Pro Glu Phe Gly Glu Asn Cys Phe Leu Ala Asp
 35 40 45
 Asn Ala Thr Ile Ile Gly Asp Val Lys Met Gly Gln Asn Cys Ser Ile
 50 55 60
 Trp Phe Asn Thr Val Leu Arg Gly Asp Val Asn Ser Ile Arg Met Gly
 65 70 75 80
 Asp Gly Val Asn Ile Gln Asp Gly Ser Val Leu His Thr Leu Tyr Glu
 85 90 95
 Lys Ser Thr Ile Glu Ile Gly Asn Tyr Val Ser Val Gly His Asn Val
 100 105 110
 Thr Ile His Gly Ala Thr Val Lys Asp Tyr Ala Leu Ile Gly Met Gly
 115 120 125
 Ser Thr Leu Leu Asp His Ala Val Ile Gly Glu Gly Ala Ile Val Ala
 130 135 140
 Ala Gly Ser Leu Val Leu Ser Asn Thr Ile Ile Glu Pro Gly Ser Ile
 145 150 155 160
 Trp Gly Gly Val Pro Ala Lys Phe Ile Lys Lys Val Asp Pro Glu Gln
 165 170 175
 Ala Lys Glu Leu Asn Gln Lys Ile Ala His Asn Tyr Leu Met Tyr Ser
 180 185 190
 Asp Trp Tyr Lys
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<210> 8603
 <211> 593
 <212> PRT
 <213> B.fragilis

<400> 8603
 Cys Met Lys Gln Ser Ile Ser Glu Arg Ile His Ala Leu Arg Met Trp
 1 5 10 15
 Phe Lys Pro Asn Ile Gln Ala Phe Ile Ile Pro Ser Thr Asp Pro His
 20 25 30
 Leu Ser Glu Tyr Val Ala Pro His Trp Lys Ser Arg Glu Trp Ile Ser
 35 40 45
 Gly Phe Thr Gly Ser Ala Gly Thr Val Val Ile Thr Glu Lys Lys Ala
 50 55 60
 Gly Leu Trp Thr Asp Ser Arg Tyr Phe Leu Gln Ala Ala Glu Gln Leu
 65 70 75 80
 Gln Gly Ser Gly Ile Asp Leu Tyr Lys Glu Met Leu Pro Glu Thr Pro
 85 90 95
 Ser Ile Thr Lys Phe Leu Ser Asp Glu Leu Gln Pro Gly Glu Ser Val
 100 105 110
 Gly Ile Asp Gly Lys Met Phe Ser Val Glu Gln Val Glu Ser Met Gln
 115 120 125

Ala Glu Leu Ser Ala Lys Asn Ile Gln Ile Val Phe Cys Pro Asp Pro
 130 135 140
 Met Asp Glu Leu Trp Glu Asn Arg Pro Pro Met Pro Glu Ser Pro Ala
 145 150 155 160
 Phe Val Tyr Asp Ile Lys Tyr Ala Gly Lys Ser Cys Ser Glu Lys Ile
 165 170 175
 Ala Ala Ile Arg Thr Glu Leu Lys Lys Lys Ser Ala Glu Ser Val Met
 180 185 190
 Leu Ser Ala Leu Asp Glu Ile Ala Trp Thr Leu Asn Leu Arg Gly Asn
 195 200 205
 Asp Val His Cys Asn Pro Val Val Val Ser Tyr Leu Leu Ile Thr Glu
 210 215 220
 Lys Lys Ala Val Leu Phe Ile Ala Pro Glu Lys Val Thr Glu Glu Val
 225 230 235 240
 Arg Asn Tyr Leu Glu Lys Gln Gln Ile Glu Ile Gln Asn Tyr Ser Asp
 245 250 255
 Thr Glu Ile Tyr Leu Ser Asp Leu Asn Ser Ser Ser Ile Leu Met Asn
 260 265 270
 Pro Ala Lys Thr Asn Tyr Ser Val Phe Ser Ser Val Asn Pro Gln Cys
 275 280 285
 Arg Ile Ile Arg Gly Glu Ala Pro Val Ala Leu Leu Lys Ala Ile Arg
 290 295 300
 Asn Glu Gln Glu Ile Lys Gly Ile His Ala Ala Met Gln Arg Asp Gly
 305 310 315 320
 Val Ala Leu Val Lys Phe Leu Arg Trp Leu Glu Ser Ala Val Pro Ser
 325 330 335
 Gly Thr Glu Thr Glu Leu Ser Ile Asp Arg Lys Leu His Ala Phe Arg
 340 345 350
 Ala Thr Gln Asp Leu Tyr Val Gly Glu Ser Phe Asp Thr Ile Ala Gly
 355 360 365
 Tyr Lys Glu His Gly Ala Ile Val His Tyr Ser Ala Thr Glu Glu Ser
 370 375 380
 Asn Ala Thr Leu His Pro Lys Gly Phe Leu Leu Leu Asp Ser Gly Ala
 385 390 395 400
 Gln Tyr Leu Asp Gly Thr Thr Asp Ile Thr Arg Thr Ile Ala Leu Gly
 405 410 415
 Glu Leu Thr Thr Glu Glu Lys Thr Asp Tyr Thr Leu Val Leu Lys Gly
 420 425 430
 His Ile Ala Leu Ala Met Ala Val Phe Pro Ser Gly Thr Arg Gly Ala
 435 440 445
 Gln Leu Asp Val Leu Ala Arg Met Pro Leu Trp Ser His Lys Met Asn
 450 455 460
 Phe Leu His Gly Thr Gly His Gly Val Gly His Phe Leu Ser Val His
 465 470 475 480
 Glu Gly Pro Gln Ser Ile Arg Met Asn Glu Asn Pro Ile Val Leu Gln
 485 490 495
 Pro Gly Met Val Thr Ser Asn Glu Pro Gly Val Tyr Lys Gly Gly Ser
 500 505 510
 His Gly Ile Arg Thr Glu Asn Leu Thr Leu Val Cys Ser Ala Gly Glu
 515 520 525
 Gly Leu Phe Gly Glu Tyr Leu Lys Phe Glu Thr Ile Thr Leu Cys Pro
 530 535 540
 Ile Cys Lys Lys Gly Ile Ile Lys Glu Leu Leu Thr Ala Asp Glu Val
 545 550 555 560
 Asp Trp Leu Asn Asn Tyr His Gln Gln Val Tyr Glu Lys Leu Ser Pro
 565 570 575
 Lys Leu Asn Glu Glu Lys Ala Trp Leu Lys Glu Ala Thr Ala Val
 580 585 590
 Ile

<210> 8604
 <211> 399
 <212> PRT
 <213> B.fragilis

<400> 8604

Ile	Thr	Ser	Lys	Ala	Met	Ala	Lys	Glu	Lys	Phe	Glu	Arg	Thr	Lys	Pro
1				5					10					15	
His	Val	Asn	Ile	Gly	Thr	Ile	Gly	His	Val	Asp	His	Gly	Lys	Thr	Thr
		20					25						30		
Leu	Thr	Ala	Ala	Ile	Thr	Thr	Val	Leu	Ala	Lys	Lys	Gly	Leu	Ser	Glu
		35					40					45			
Leu	Arg	Ser	Phe	Asp	Ser	Ile	Asp	Asn	Ala	Pro	Glu	Glu	Lys	Glu	Arg
	50					55				60					
Gly	Ile	Thr	Ile	Asn	Thr	Ser	His	Val	Glu	Tyr	Glu	Thr	Ala	Asn	Arg
65				70					75					80	
His	Tyr	Ala	His	Val	Asp	Cys	Pro	Gly	His	Ala	Asp	Tyr	Val	Lys	Asn
				85					90					95	
Met	Val	Thr	Gly	Ala	Ala	Gln	Met	Asp	Gly	Ala	Ile	Ile	Val	Val	Ala
			100					105						110	
Ala	Thr	Asp	Gly	Pro	Met	Pro	Gln	Thr	Arg	Glu	His	Ile	Leu	Leu	Ala
		115					120					125			
Arg	Gln	Val	Asn	Val	Pro	Lys	Leu	Val	Val	Phe	Met	Asn	Lys	Cys	Asp
	130					135					140				
Met	Val	Glu	Asp	Ala	Glu	Met	Leu	Glu	Leu	Val	Glu	Met	Glu	Met	Arg
145					150					155					160
Glu	Leu	Leu	Ser	Phe	Tyr	Asp	Phe	Asp	Gly	Asp	Asn	Thr	Pro	Ile	Ile
				165					170					175	
Gln	Gly	Ser	Ala	Leu	Gly	Ala	Leu	Asn	Gly	Val	Glu	Lys	Trp	Glu	Asp
			180					185						190	
Lys	Val	Met	Glu	Leu	Met	Glu	Ala	Val	Asp	Thr	Trp	Ile	Pro	Leu	Pro
		195					200					205			
Pro	Arg	Asp	Val	Asp	Lys	Pro	Phe	Leu	Met	Pro	Val	Glu	Asp	Val	Phe
	210					215					220				
Ser	Ile	Thr	Gly	Arg	Gly	Thr	Val	Ala	Thr	Gly	Arg	Ile	Glu	Thr	Gly
225					230					235					240
Val	Ile	His	Val	Gly	Asp	Glu	Ile	Glu	Ile	Leu	Gly	Leu	Gly	Glu	Asp
				245					250					255	
Lys	Lys	Ser	Val	Val	Thr	Gly	Val	Glu	Met	Phe	Arg	Lys	Leu	Leu	Asp
		260						265					270		
Gln	Gly	Glu	Ala	Gly	Asp	Asn	Val	Gly	Leu	Leu	Leu	Arg	Gly	Val	Asp
		275					280					285			
Lys	Asn	Glu	Ile	Lys	Arg	Gly	Met	Val	Leu	Cys	Lys	Pro	Gly	Gln	Ile
	290					295					300				
Lys	Pro	His	Ser	Lys	Phe	Lys	Ala	Glu	Val	Tyr	Ile	Leu	Lys	Lys	Glu
305					310					315					320
Glu	Gly	Gly	Arg	His	Thr	Pro	Phe	His	Asn	Lys	Tyr	Arg	Pro	Gln	Phe
				325					330					335	
Tyr	Leu	Arg	Thr	Met	Asp	Cys	Thr	Gly	Glu	Ile	Thr	Leu	Pro	Glu	Gly
			340					345					350		
Thr	Glu	Met	Val	Met	Pro	Gly	Asp	Asn	Val	Thr	Ile	Thr	Val	Glu	Leu
		355				360						365			
Ile	Tyr	Pro	Val	Ala	Leu	Asn	Ile	Gly	Leu	Arg	Phe	Ala	Ile	Arg	Glu
	370					375					380				
Gly	Gly	Arg	Thr	Val	Gly	Ala	Gly	Gln	Ile	Thr	Glu	Ile	Ile	Asp	
385					390					395					

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<210> 8605
 <211> 151
 <212> PRT
 <213> B.fragilis

<400> 8605

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Ile Asn Lys Lys Met Ala Lys Glu Val Ala Gly Leu Ile Lys Leu Gln
1          5          10          15
Ile Lys Gly Gly Ala Ala Asn Pro Ser Pro Pro Val Gly Pro Ala Leu
          20          25          30
Gly Ser Lys Gly Ile Asn Ile Met Glu Phe Cys Lys Gln Phe Asn Ala
          35          40          45
Arg Thr Gln Asp Lys Ala Gly Lys Ile Leu Pro Val Ile Ile Thr Tyr
          50          55          60
Tyr Ala Asp Lys Ser Phe Asp Phe Val Ile Lys Thr Pro Pro Val Ala
65          70          75          80
Ile Gln Leu Leu Glu Val Ala Lys Val Lys Ser Gly Ser Ala Glu Pro
          85          90          95
Asn Arg Lys Lys Val Ala Glu Ile Thr Trp Glu Gln Val Arg Thr Ile
          100          105          110
Ala Gln Asp Lys Met Val Asp Leu Asn Cys Phe Thr Val Glu Ala Ala
          115          120          125
Met Arg Met Val Ala Gly Thr Ala Arg Ser Met Gly Ile Ala Val Lys
          130          135          140
Gly Glu Phe Pro Val Asn Asn
          145          150

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<210> 8606
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 8606

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Ser Arg Ser Leu Arg Asn Ile Ser Thr Pro Val Thr Thr Asp Phe Leu
1          5          10          15
Ser Ser Pro Lys Pro Arg Ile Ser Ile Ser Ser Pro Thr Trp Ile Thr
          20          25          30
Pro Val Ser Ile Arg Pro Val Ala Thr Val Pro Arg Pro Val Ile Glu
          35          40          45
Asn Thr Ser Ser Thr Gly Ile Lys Lys Gly Leu Ser Thr Ser Arg Gly
          50          55          60
Gly Ser Gly Ile Gln Val Ser Thr Ala Ser Ile Ser Ser Ile Thr Leu
65          70          75          80
Ser Ser His Phe Ser Thr Pro Phe Asn Ala Pro Arg Ala Glu Pro
          85          90          95

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<210> 8607
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 8607

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Asn Tyr Arg Leu Lys Pro Asn Ile Asn Gln Phe Pro Val Val Ile Ser
1          5          10          15
Gly Thr Asp Tyr Val Gln Thr Gly Val Ala Gln Leu Val Glu His Arg
          20          25          30
Ser Pro Lys Pro Gly Val Gly Ser Ser Ser Leu Ser Ser Arg Ala Asn
          35          40          45
Ile Tyr Glu Met Lys Lys Val Val Ala Tyr Ile Lys Glu Ser Tyr Asp

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50		55		60											
Glu	Leu	Val	His	Lys	Val	Ser	Trp	Pro	Thr	Tyr	Ser	Glu	Leu	Thr	Asn
65				70						75					80
Ser	Ala	Val	Val	Val	Leu	Tyr	Ala	Ser	Leu	Leu	Ile	Ala	Leu	Val	Val
			85						90					95	
Phe	Ala	Met	Asp	Phe	Cys	Phe	Gln	Asn	Phe	Met	Glu	Lys	Ile	Ile	Tyr
			100					105					110		
Pro	His														

<210> 8608
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8608
Asn Lys Ala Arg Trp Ser Ile Arg Val His Gln Ser Gly Ile Val His
1 5 10 15
Thr Ser Ile Gly Lys Val Ser Phe Thr Ala Glu Gln Ile Arg Asp Asn
20 25 30
Ala Lys Glu Phe Ile Ser Thr Leu Asn Lys Leu Lys Pro Thr Ala Ala
35 40 45
Lys Gly Thr Tyr Ile Lys Ser Ile Tyr Leu Ser Ser Thr Met Ser Ala
50 55 60
Gly Ile Lys Ile Asp Pro Lys Ser Val Glu Glu Ile
65 70 75

<210> 8609
 <211> 410
 <212> PRT
 <213> B.fragilis

<400> 8609
Gly Ser Gly Gly Met Phe Tyr Asp Leu Ala Ile Gly Ile Tyr Asp Leu
1 5 10 15
Leu Val His Leu Ala Ala Pro Phe Ser Arg Lys Pro Arg Lys Met Met
20 25 30
Lys Gly His Trp Val Val Tyr Asp Leu Leu Arg Gln Gln Val Glu Lys
35 40 45
Asp Glu Arg Tyr Ile Trp Phe His Ala Ala Ser Leu Gly Glu Phe Glu
50 55 60
Gln Gly Arg Pro Leu Ile Glu Ser Ile Arg Glu Arg Tyr Pro Asp Tyr
65 70 75 80
Lys Ile Leu Gln Thr Phe Phe Ser Pro Ser Gly Tyr Glu Val Arg Lys
85 90 95
Asn Tyr Arg Gly Ala Asp Ile Val Cys Tyr Leu Pro Phe Asp Lys Pro
100 105 110
Arg Asn Val Lys Lys Phe Leu Asp Ile Val Asn Pro Cys Met Ala Phe
115 120 125
Phe Ile Lys Tyr Glu Phe Trp Lys Asn Tyr Leu Asp Glu Leu His Lys
130 135 140
Arg Arg Ile Pro Val Tyr Ser Val Ser Ser Ile Phe Arg Lys Asp Gln
145 150 155 160
Ile Phe Phe Lys Trp Tyr Gly Gly Thr Tyr Arg Asn Val Leu Lys Asp
165 170 175
Phe Asp His Leu Phe Val Gln Asn Glu Ala Ser Lys Arg Phe Leu Ala
180 185 190
Lys Ile Gly Ile Thr Arg Val Thr Val Val Gly Asp Thr Arg Phe Asp
195 200 205

Arg Val Leu Gln Ile Arg Glu Gln Ala Lys Glu Leu Pro Leu Val Glu
 210 215 220
 Gln Phe Lys Asn Gly Ala Phe Thr Phe Val Ala Gly Ser Ser Trp Gly
 225 230 235 240
 Pro Asp Glu Asp Leu Phe Ile Glu Tyr Phe Asn Ser His Pro Glu Met
 245 250 255
 Lys Leu Ile Ile Ala Pro His Val Ile Asp Glu Asn His Leu Val Glu
 260 265 270
 Ile Ile Gly Lys Leu Lys Arg Pro Ser Val Arg Tyr Thr Arg Ala Asp
 275 280 285
 Glu Lys Asn Val Arg Lys Ala Asp Cys Leu Ile Ile Asp Cys Phe Gly
 290 295 300
 Leu Leu Ser Ser Ile Tyr Arg Tyr Gly Glu Ile Ala Tyr Ile Gly Gly
 305 310 315 320
 Gly Phe Gly Val Gly Ile His Asn Thr Leu Glu Ala Ala Val Tyr Gly
 325 330 335
 Ile Pro Val Ile Phe Gly Pro Lys Tyr Gln Lys Phe Met Glu Ala Met
 340 345 350
 Gln Leu Ile Glu Ala Gly Gly Ala Tyr Ser Ile Lys Asp Tyr Asn Glu
 355 360 365
 Leu Lys Ile Leu Leu Asp Arg Leu Leu Thr Asp Glu Ala Phe Leu Lys
 370 375 380
 Lys Thr Gly Thr Asn Ala Gly Asn Tyr Val Ile Gly Asn Ser Gly Ala
 385 390 395 400
 Thr Glu Lys Val Leu His Met Ile Asn Phe
 405 410

<210> 8610

<211> 308

<212> PRT

<213> B.fragilis

<400> 8610

Ile Leu Phe Ile His Ser Leu Gln Asn Tyr Arg Cys Ser Asp Ile Met
 1 5 10 15
 Leu Thr Asp Ser Phe Leu Asp Tyr Leu Arg Tyr Glu Arg Asn Tyr Ser
 20 25 30
 Glu Lys Thr Val Leu Ala Tyr Gly Glu Asp Ile Ser Gln Leu Arg Glu
 35 40 45
 Phe Ala Gln Glu Arg Met Glu Lys Phe Asp Pro Ala Glu Val Lys Pro
 50 55 60
 Glu Leu Val Arg Glu Trp Ile Val Ser Leu Met Asp Gln Gly Tyr Thr
 65 70 75 80
 Ser Thr Ser Val Asn Arg Lys Leu Ser Ser Leu Arg Ser Phe Tyr Lys
 85 90 95
 Tyr Leu Leu Arg Gln Gly Glu Val Ser Val Asp Pro Leu Arg Lys Ile
 100 105 110
 Thr Gly Pro Lys Asn Lys Lys Pro Leu Pro Ser Phe Leu Lys Glu Ser
 115 120 125
 Glu Met Asn Lys Leu Leu Asp Asp Thr Asp Phe Gly Glu Gly Phe Lys
 130 135 140
 Gly Cys Arg Asp Arg Leu Ile Ile Glu Met Phe Tyr Ala Thr Gly Met
 145 150 155 160
 Arg Leu Ser Glu Leu Ile Gly Leu Asp Asp Lys Asp Val Asp Phe Ser
 165 170 175
 Ala Ser Leu Leu Lys Val Thr Gly Lys Arg Asn Lys Gln Arg Leu Ile
 180 185 190
 Pro Phe Gly Asp Glu Leu Lys Glu Thr Met Leu Glu Tyr Val Asp Ile
 195 200 205

Arg Asn Glu Met Ile Ser Gly Arg Ser Asp Ala Phe Phe Val Arg Glu
 210 215 220
 Asn Gly Glu Arg Leu Tyr Lys Asn Leu Val Tyr Asn Leu Val Lys Arg
 225 230 235 240
 Asn Leu Ser Lys Val Val Thr Leu Lys Lys Arg Ser Pro His Val Leu
 245 250 255
 Arg His Thr Phe Ala Thr Thr Met Leu Asn Asn Asp Ala Glu Leu Gly
 260 265 270
 Ala Val Lys Glu Leu Leu Gly His Ser Ser Leu Ala Thr Thr Glu Ile
 275 280 285
 Tyr Thr His Thr Thr Phe Glu Glu Leu Lys Lys Val Tyr Lys Gln Ala
 290 295 300
 His Pro Arg Ala
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<210> 8611

<211> 190

<212> PRT

<213> B.fragilis

<400> 8611

Phe Ile His Ile Lys Lys Arg Gly Ile Thr Met Ser Glu Ile Glu Lys
 1 5 10 15
 Lys Trp Tyr Val Leu Arg Ala Ile Ser Gly Lys Glu Ala Lys Val Lys
 20 25 30
 Glu Tyr Leu Glu Ala Asp Ile Lys Asn Ser Asp Leu Gly Glu Tyr Val
 35 40 45
 Ser Gln Val Leu Ile Pro Thr Glu Lys Val Tyr Gln Val Arg Asn Gly
 50 55 60
 Lys Lys Ile Val Lys Glu Arg Ser Tyr Leu Pro Gly Tyr Val Leu Val
 65 70 75 80
 Glu Ala Ala Leu Val Gly Glu Val Ser His His Leu Arg Asn Thr Pro
 85 90 95
 Asn Val Ile Gly Phe Leu Gly Gly Ser Asp Lys Pro Val Pro Leu Arg
 100 105 110
 Gln Ser Glu Val Asn Arg Ile Leu Gly Thr Val Asp Glu Leu Gln Glu
 115 120 125
 Thr Gly Glu Asp Leu Asn Val Pro Tyr Ile Val Gly Glu Thr Val Lys
 130 135 140
 Val Thr Phe Gly Pro Phe Ser Gly Phe Ser Gly Ile Ile Glu Glu Val
 145 150 155 160
 Asn Ser Glu Lys Lys Lys Leu Lys Val Met Val Lys Ile Phe Gly Arg
 165 170 175
 Lys Thr Pro Leu Glu Leu Gly Phe Met Gln Val Glu Lys Glu
 180 185 190

<210> 8612

<211> 180

<212> PRT

<213> B.fragilis

<400> 8612

Thr Ser Ile Val Met Gly Lys Leu Thr Lys Asn Gln Lys Leu Ala Ala
 1 5 10 15
 Gly Lys Ile Glu Ala Gly Lys Ala Tyr Ser Leu Lys Glu Ala Ala Ser
 20 25 30
 Leu Val Lys Glu Ile Thr Phe Thr Lys Phe Asp Ala Ser Leu Asp Ile
 35 40 45
 Asp Val Arg Leu Gly Val Asp Pro Arg Lys Ala Asn Gln Met Val Arg

50		55		60
Gly Val Val Ser Leu Pro His Gly Thr Gly Lys Gln Val Arg Val Leu				
65		70		75
Val Leu Cys Thr Pro Asp Ala Glu Ala Ala Lys Glu Ala Gly Ala				
	85		90	
Asp Tyr Val Gly Leu Asp Glu Tyr Ile Glu Lys Ile Lys Gly Gly Trp				
	100		105	
Thr Asp Ile Asp Val Ile Ile Thr Met Pro Ser Ile Met Gly Lys Ile				
	115		120	
Gly Ala Leu Gly Arg Val Leu Gly Pro Arg Gly Leu Met Pro Asn Pro				
	130		135	
Lys Ser Gly Thr Val Thr Met Asp Val Ala Lys Ala Val Arg Glu Val				
	145		150	
Lys Gln Gly Lys Met Val Tyr Gln Ser Ala Ser Lys Arg Tyr Cys Ser				
	165		170	
Tyr Phe Asn Trp				
	180			

<210> 8613
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 8613
Ile Lys Lys Val Cys Val Ile Leu Arg Arg Asn Leu Thr Ala Glu Ile
1 5 10 15
Leu Asn His Asn Ile Phe Asn Asn Asn Lys Met Ile Val Val Pro Val
20 25 30
Lys Glu Gly Glu Asn Ile Glu Lys Ala Leu Lys Lys Phe Lys Arg Lys
35 40 45
Phe Glu Lys Thr Gly Ile Val Lys Glu Leu Arg Ser Arg Gln Gln Phe
50 55 60
Asp Lys Pro Ser Val Thr Lys Arg Leu Lys Lys Glu Arg Ala Val Tyr
65 70 75 80
Val Gln Lys Leu Gln Gln Val Glu Asp
85

<210> 8614
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8614
His Ile Leu Phe Ser Lys Leu Asn Ile Lys Ile Ile Gln Lys Met Ala
1 5 10 15
Asp Leu Lys Ala Phe Ala Glu Gln Leu Val Asn Leu Thr Val Lys Glu
20 25 30
Val Asn Glu Leu Ala Thr Ile Leu Lys Glu Glu Tyr Gly Ile Glu Pro
35 40 45
Ala Ala Ala Ala Val Ala Val Ala Ala Gly Pro Ala Ala Gly Ala Ala
50 55 60
Ala Ala Glu Glu Lys Ser Phe Asp Val Val Leu Lys Ser Ala Gly
65 70 75 80
Ala Ala Lys Leu Gln Val Val Lys Ala Val Lys Glu Ala Cys Gly Leu
85 90 95
Gly Leu Lys Glu Ala Lys Asp Met Val Asp Gly Ala Pro Ser Val Val
100 105 110
Lys Glu Gly Leu Ala Lys Asp Glu Ala Glu Ser Leu Lys Lys Thr Leu
115 120 125

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Glu Glu Ala Gly Ala Glu Val Glu Leu Lys
130 135

<210> 8615

<211> 957

<212> PRT

<213> B.fragilis

<400> 8615

Gln	Met	Ser	Ser	Asn	Thr	Val	Asn	Gln	Arg	Val	Asn	Phe	Ala	Ser	Thr	1	5	10	15
Lys	Asn	Pro	Leu	Glu	Tyr	Pro	Asp	Phe	Leu	Glu	Val	Gln	Leu	Lys	Ser	20	25	30	
Phe	Gln	Asp	Phe	Leu	Gln	Leu	Asp	Thr	Pro	Pro	Glu	Lys	Arg	Lys	Lys	35	40	45	
Glu	Gly	Leu	Tyr	Lys	Val	Phe	Ala	Glu	Asn	Phe	Pro	Ile	Ala	Asp	Thr	50	55	60	
Arg	Asn	Asn	Phe	Val	Leu	Glu	Phe	Leu	Asp	Tyr	Tyr	Ile	Asp	Pro	Pro	65	70	75	80
Arg	Tyr	Thr	Ile	Asp	Asp	Cys	Ile	Glu	Arg	Gly	Leu	Thr	Tyr	Ser	Val	85	90	95	
Pro	Leu	Lys	Ala	Lys	Leu	Lys	Leu	Tyr	Cys	Thr	Asp	Pro	Asp	His	Glu	100	105	110	
Asp	Phe	Asp	Thr	Val	Ile	Gln	Asp	Val	Phe	Leu	Gly	Pro	Ile	Pro	Tyr	115	120	125	
Met	Thr	Asp	Lys	Ala	Thr	Phe	Val	Ile	Asn	Gly	Ala	Glu	Arg	Val	Val	130	135	140	
Val	Ser	Gln	Leu	His	Arg	Ser	Pro	Gly	Val	Phe	Phe	Gly	Gln	Ser	Val	145	150	155	160
His	Ala	Asn	Gly	Thr	Lys	Leu	Tyr	Ser	Ala	Arg	Ile	Ile	Pro	Phe	Lys	165	170	175	
Gly	Ser	Trp	Ile	Glu	Phe	Ala	Thr	Asp	Ile	Asn	Asn	Val	Met	Tyr	Ala	180	185	190	
Tyr	Ile	Asp	Arg	Lys	Lys	Lys	Leu	Pro	Val	Thr	Thr	Leu	Leu	Arg	Ala	195	200	205	
Ile	Gly	Phe	Glu	Asn	Asp	Lys	Asp	Ile	Leu	Glu	Ile	Phe	Asn	Leu	Ala	210	215	220	
Glu	Asp	Val	Lys	Val	Asn	Lys	Thr	Asn	Leu	Lys	Lys	Val	Val	Gly	Arg	225	230	235	240
Lys	Leu	Ala	Ala	Arg	Val	Leu	Lys	Thr	Trp	Ile	Glu	Asp	Phe	Val	Asp	245	250	255	
Glu	Asp	Thr	Gly	Glu	Val	Val	Ser	Ile	Glu	Arg	Asn	Glu	Val	Ile	Ile	260	265	270	
Asp	Arg	Glu	Thr	Val	Ile	Glu	Pro	Glu	His	Ile	Asp	Glu	Ile	Ile	Asp	275	280	285	
Ser	Gly	Val	Gln	Asn	Ile	Leu	Ile	His	Lys	Glu	Glu	Pro	Asn	Gln	Ser	290	295	300	
Asp	Tyr	Ser	Ile	Ile	Tyr	Asn	Thr	Leu	Gln	Lys	Asp	Pro	Ser	Asn	Ser	305	310	315	320
Glu	Lys	Glu	Ala	Val	Leu	Tyr	Ile	Tyr	Arg	Gln	Leu	Arg	Asn	Ala	Asp	325	330	335	
Pro	Ala	Asp	Asp	Ala	Ser	Ala	Arg	Glu	Val	Ile	Asn	Asn	Leu	Phe	Phe	340	345	350	
Ser	Glu	Lys	Arg	Tyr	Asp	Leu	Gly	Asp	Val	Gly	Arg	Tyr	Arg	Ile	Asn	355	360	365	
Lys	Lys	Leu	Asn	Leu	Thr	Thr	Asp	Met	Asp	Val	Arg	Val	Leu	Thr	Lys	370	375	380	
Glu	Asp	Ile	Ile	Glu	Ile	Ile	Lys	Tyr	Leu	Ile	Glu	Leu	Ile	Asn	Ser	385	390	395	400

4735
 130 135
 8615
 957
 PRT
 B.fragilis
 8615
 1 5 10 15
 20 25 30
 35 40 45
 50 55 60
 65 70 75 80
 85 90 95
 100 105 110
 115 120 125
 130 135 140
 145 150 155 160
 165 170 175
 180 185 190
 195 200 205
 210 215 220
 225 230 235 240
 245 250 255
 260 265 270
 275 280 285
 290 295 300
 305 310 315 320
 325 330 335
 340 345 350
 355 360 365
 370 375 380
 385 390 395 400

Lys Ala Asp Val Asp Asp Ile Asp His Leu Ser Asn Arg Arg Val Arg
 405 410 415
 Thr Val Gly Glu Gln Leu Ser Asn Gln Phe Ala Val Gly Leu Ala Arg
 420 425 430
 Met Ser Arg Thr Ile Arg Glu Arg Met Asn Val Arg Asp Asn Glu Val
 435 440 445
 Phe Thr Pro Ile Asp Leu Ile Asn Ala Lys Thr Ile Ser Ser Val Ile
 450 455 460
 Asn Ser Phe Phe Gly Thr Asn Ala Leu Ser Gln Phe Met Asp Gln Thr
 465 470 475 480
 Asn Pro Leu Ala Glu Ile Thr His Lys Arg Arg Met Ser Ala Leu Gly
 485 490 495
 Pro Gly Gly Leu Ser Arg Glu Arg Ala Gly Phe Glu Val Arg Asp Val
 500 505 510
 His Tyr Thr His Tyr Gly Arg Leu Cys Pro Ile Glu Thr Pro Glu Gly
 515 520 525
 Pro Asn Ile Gly Leu Ile Ser Ser Leu Cys Val Phe Ala Lys Ile Asn
 530 535 540
 Asp Leu Gly Phe Ile Glu Thr Pro Tyr Arg Lys Val Asp Asn Gly Lys
 545 550 555 560
 Val Asp Leu Ser Glu Asn Gly Leu Val Tyr Leu Thr Ala Glu Glu Glu
 565 570 575
 Glu Ala Lys Ile Ile Ala Gln Gly Asn Ala Pro Leu Asn Asp Asp Gly
 580 585 590
 Thr Phe Ile Arg Asn Lys Val Lys Ser Arg Gln Asp Ala Asp Tyr Pro
 595 600 605
 Val Val Glu Pro Ser Glu Val Glu Leu Met Asp Val Ala Pro Gln Gln
 610 615 620
 Ile Ala Ser Ile Ala Ala Ser Leu Ile Pro Phe Leu Glu His Asp Asp
 625 630 635 640
 Ala Asn Arg Ala Leu Met Gly Ser Asn Met Met Arg Gln Ala Val Pro
 645 650 655
 Leu Leu Arg Ser Glu Ala Pro Ile Val Gly Thr Gly Ile Glu Arg Gln
 660 665 670
 Leu Val Arg Asp Ser Arg Thr Gln Ile Ala Ala Glu Gly Asp Gly Val
 675 680 685
 Ile Asp Phe Val Asp Ala Thr Thr Ile Arg Ile Leu Tyr Asp Arg Thr
 690 695 700
 Glu Asp Glu Glu Phe Val Ser Phe Glu Pro Ala Leu Lys Glu Tyr Arg
 705 710 715 720
 Ile Pro Lys Phe Arg Lys Thr Asn Gln Asn Met Thr Ile Asp Leu Arg
 725 730 735
 Pro Thr Cys Asn Lys Gly Asp Arg Val Thr Lys Gly Gln Ile Leu Thr
 740 745 750
 Glu Gly Tyr Ser Thr Glu Asn Gly Glu Leu Ala Leu Gly Lys Asn Leu
 755 760 765
 Leu Val Ala Tyr Met Pro Trp Lys Gly Tyr Asn Tyr Glu Asp Ala Ile
 770 775 780
 Val Leu Asn Glu Arg Val Val Arg Glu Asp Leu Leu Thr Ser Val His
 785 790 795 800
 Val Glu Glu Tyr Ser Leu Glu Val Arg Glu Thr Lys Arg Gly Met Glu
 805 810 815
 Glu Leu Thr Ser Asp Ile Pro Asn Val Ser Glu Glu Ala Thr Lys Asp
 820 825 830
 Leu Asp Glu Asn Gly Ile Val Arg Val Gly Ala Arg Ile Gln Pro Gly
 835 840 845
 Asp Ile Leu Ile Gly Lys Ile Thr Pro Lys Gly Glu Ser Asp Pro Ser
 850 855 860
 Pro Glu Glu Lys Leu Leu Arg Ala Ile Phe Gly Asp Lys Ala Gly Asp

865 870 875 880
 Val Lys Asp Ala Ser Leu Lys Ala Ser Pro Ser Leu Lys Gly Val Ile
 885 890 895
 Ile Asp Lys Lys Leu Phe Ser Arg Val Ile Lys Asn Arg Ser Ser Lys
 900 905 910
 Leu Ala Asp Lys Ala Leu Leu Pro Lys Ile Asp Asp Glu Phe Glu Ser
 915 920 925
 Lys Val Ala Asp Leu Lys Arg Ile Leu Val Lys Lys Leu Ser Gly His
 930 935 940
 His Arg Gly Ser Gln Glu Pro Gly Ser Gln Trp Ala Gly
 945 950 955

<210> 8616

<211> 595

<212> PRT

<213> B.fragilis

<400> 8616

Lys Met Lys Thr Ile Asn Lys Leu Phe Lys Gly Ile Phe Phe Cys Thr
 1 5 10 15
 Leu Val Ser Val Ser Val Ser Ser Cys Asp Leu Glu Val Glu Pro Pro
 20 25 30
 Ala Asn Ile Ala Ala Glu Thr Tyr Trp Thr Ser Glu Lys Asp Ala Trp
 35 40 45
 Tyr Asn Leu Asn Ser Ile Tyr Ser Ala Ala Ile Pro Gly Ile Gly Ile
 50 55 60
 Tyr Gly Asp Ala Tyr Ser Asp Asp Val Tyr Cys Gln Tyr Ala His Glu
 65 70 75 80
 Ser Asn Ala Lys Ile Phe Gln Gln Asp Gly Phe Ser Pro Leu Tyr Asp
 85 90 95
 Glu Gly Trp Asn Phe Glu Thr Ile Arg Lys Glu Asn Leu Phe Leu Gln
 100 105 110
 Lys Val Gly Asn Cys Glu Met Asp Glu Ser Leu Arg Glu Arg Phe Lys
 115 120 125
 Ala Glu Val Arg Ala Met Arg Ala Trp Thr Tyr Leu Gly Met Thr Met
 130 135 140
 Thr Phe Gly Lys Val Pro Leu Ile Thr Glu Val Leu Asp Tyr Asn Ser
 145 150 155 160
 Pro Asn Ile Pro Arg Asp Glu Val Ser Val Ile Arg Asp Phe Ile Met
 165 170 175
 Lys Glu Leu Thr Glu Ala Ala Ala Ile Leu Pro Glu Lys Tyr Ala Gly
 180 185 190
 Gly Tyr Pro Asn Glu Lys Gly Arg Ile Thr Lys Tyr Ala Cys Leu Ser
 195 200 205
 Leu Lys Ala Arg Ala Ala Leu Tyr Phe Gly Asp Tyr Ala Leu Ala Glu
 210 215 220
 Ser Thr Ala Lys Glu Val Met Asp Lys Gly Gly Phe Ser Leu Phe Lys
 225 230 235 240
 Ile Ser Ser Leu Ser Asp Ala Gln Lys Lys Glu Ala Glu Glu Met Ser
 245 250 255
 Leu Tyr Ile Asp Phe Ala Glu Lys Gly Ile Asp Lys Asp Glu Phe Val
 260 265 270
 Lys Gly Met Phe Asn Tyr Glu Ala Leu Trp His Thr Glu Asn Ala Asn
 275 280 285
 Pro Asp Asn Pro Glu Tyr Ile Met Thr Arg Gln Tyr Ala Ala Ser Ser
 290 295 300
 Trp Asp Tyr Gln Asp Met Thr Arg Tyr Thr Ser Met Arg Pro Asn Gln
 305 310 315 320
 Leu Gly Gly Trp Ser Ser Val Thr Pro Thr Gln Asn Leu Val Asp Ala

Tyr Trp Gly Val Asp Gly His Ser Val Pro Gln Leu Pro Thr Pro Glu
 325 330 335
 340 345 350
 Glu Arg Ala Lys Ala Tyr Asn Gln Ile Lys Ala Asp Leu Asp Ala Tyr
 355 360 365
 Gln Lys Pro Glu Gly Glu Ala Lys Phe Ile Ala Phe Cys Gln Glu Lys
 370 375 380
 Ile Lys Asn Gly Thr Leu Lys Asp Tyr Lys Tyr Ile Gln Glu Phe Arg
 385 390 395 400
 Asn Arg Asp Ser Arg Met Tyr Val Ser Ile Leu Met Pro Phe Lys Ser
 405 410 415
 Trp Tyr Glu Ser Asn Tyr Gly Asp Lys Phe Val Tyr Glu Trp Ile Lys
 420 425 430
 Asn Gly Asn Asn Glu Ser Lys Thr Gly Phe Asn Phe Arg Lys Met Leu
 435 440 445
 Ser Leu Glu Asn Asp Ala Asn Gly Asp Gly Gln Ala Thr Gly Asp Tyr
 450 455 460
 Pro Cys Ile Arg Tyr Ala Glu Ile Leu Leu Ile Tyr Ala Glu Ala His
 465 470 475 480
 Thr Gln Thr Thr Gly Tyr Asp Ala Ala Thr Glu Ala Ala Leu Asn Gln
 485 490 495
 Leu Arg Asp Arg Cys Gly Met Pro Asp Val Pro Ser Gly Leu Ser Lys
 500 505 510
 Glu Glu Gly Leu Lys Leu Ile Gln Asn Glu Arg Arg Ile Glu Leu Ala
 515 520 525
 Gly Glu Gly Phe Arg Gly Asp Asp Met Thr Arg Tyr Ser Asp Asp Tyr
 530 535 540
 Trp Lys Glu His Met Asn Asn Val Pro Ile Met Thr Pro Asp Gly Asp
 545 550 555 560
 Thr Glu Leu Thr Met Lys Trp Ser Ser Arg Met Arg Leu Lys Pro Ile
 565 570 575
 Pro Gln Thr Ala Ile Asp Leu Asn Pro Leu Leu Ala Gly Asp Gln Asn
 580 585 590
 Pro Gly Tyr
 595

<210> 8617
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 8617
 Arg Leu Lys Lys Gly Val Ala Val Asn Arg Ile Ala Ile Lys Ala Gln
 1 5 10 15
 Val Leu Thr Gly Gly Arg Gly Lys Ala Gly Gly Val Lys Leu Ala Asn
 20 25 30
 Asn Asp Arg Asp Val Tyr Gln Tyr Ala Gln Thr Ile Leu Glu Met Thr
 35 40 45
 Ile Lys Gly Tyr Pro Val Thr Lys Asn Phe Leu Asn Glu Ala Gly Asn
 50 55 60
 Ile Gly Ser Arg Ile Leu His Gln Phe Tyr Asp Arg Pro
 65 70 75

<210> 8618
 <211> 668
 <212> PRT
 <213> B.fragilis

<400> 8618

Arg Gly Thr Arg Ile Asp Cys Leu Arg Tyr Ser Ser Pro Arg Gly Glu
 1 5 10 15
 Asp Ser Thr Ser Asp Asn Asp Lys Gly Gly Val Val Tyr Thr His Leu
 20 25 30
 Leu Thr Ile Pro Ser Thr Tyr Val Ala Arg Gln Ser Asn Gly Glu Trp
 35 40 45
 Gly Ser Tyr Glu Gly Gly Lys Pro Ala Ala Thr Val Asn Met Glu Arg
 50 55 60
 Asn Pro Leu Arg Arg Leu Glu Glu Gly Gly Trp Ser Asn Ser Lys Thr
 65 70 75 80
 Gln Asn Thr Leu Ile Asn Leu Ala Leu Asp Ile Lys Pro Val Lys Gly
 85 90 95
 Leu Val Leu Thr Gly Glu Met Ile Tyr Lys Ala Trp Asp Tyr Lys Ser
 100 105 110
 Lys Thr Tyr Thr Ala Asn Lys Ser Lys Ile Lys Asp Phe Gln Thr Gly
 115 120 125
 Thr Glu Leu Asn Gly Thr Asp Val Thr Asn Ser Lys Met Glu Tyr Ser
 130 135 140
 Trp Glu Glu Asn Ser Arg Leu Thr Tyr Asn Ala Leu Ala Asn Tyr Val
 145 150 155 160
 Trp Ser Asn Glu Lys His Asn Val Asn Val Leu Ala Gly Val Ser Tyr
 165 170 175
 Glu His Tyr Lys Tyr Gln Lys Gln Lys Ser Tyr Arg Leu Lys Phe Pro
 180 185 190
 Thr Asn Gly Met Thr Asp Met Asn Gly Gly Ser Ser Ala Pro Asp Asp
 195 200 205
 Thr Tyr Ala Glu Gly Gly Ser Asn Glu Asp Lys Leu Met Ser Tyr Phe
 210 215 220
 Gly Arg Val Asn Tyr Ser Phe Met Asp Arg Tyr Leu Leu Glu Ala Asn
 225 230 235 240
 Ile Arg Ala Asp Ala Ser Phe Arg Phe His Lys Asp Asn Arg Trp Gly
 245 250 255
 Val Phe Pro Ser Phe Ser Ala Gly Trp Arg Ile Ser Gln Glu Gly Phe
 260 265 270
 Met Gln Asp Ile Asn Trp Ile Asn Asn Leu Lys Leu Arg Ala Ser Trp
 275 280 285
 Gly Gln Leu Gly Asn Ile Asn Asp Val Gly Gln Tyr Asp Tyr Phe Ser
 290 295 300
 Ser Tyr Gln Gln Gly Gly Asn Tyr Asn Phe Glu Asp Ala Ile Val Ser
 305 310 315 320
 Gly Ile Val Glu Ser Lys Pro Ala Asn Pro Thr Leu Gly Trp Glu Thr
 325 330 335
 Val Thr Ile Thr Asp Ile Gly Val Asp Phe Asp Ile Phe Asn Gly Leu
 340 345 350
 Leu Asn Phe Thr Ala Asp Tyr Tyr Asn Lys Lys Thr Asp Asp Ile Leu
 355 360 365
 Leu Ala Tyr Pro Ser Pro Lys Glu Ile Gly Ile Gly Ser Asp Phe Lys
 370 375 380
 Val Ser Gln Asn Ile Gly Thr Val Ser Asn Lys Gly Leu Glu Leu Ser
 385 390 395 400
 Ile Thr His Asn Lys Thr Leu Gly Asp Phe Ala Tyr Thr Val Gly Phe
 405 410 415
 Asn Met Ser Lys Asn Trp Asn Lys Val Thr Asn Leu Gly Ala Asn Asp
 420 425 430
 Pro Ile Ile Glu Ser Pro Trp Ile Lys Lys Val Gly Tyr Ala Ile Gly
 435 440 445
 Thr Phe Tyr Gly Tyr Arg Ser Asp Gly Leu Leu Thr Gln Glu Asp Ile
 450 455 460
 Asp Thr Gly Asn Tyr Ile Thr Asp Gly Leu Val Pro Gln Ala Gly Asp

465		470		475		480
Ile Lys Tyr Val	Asp Leu Asp Gly Asp Gly Lys Leu Thr Asp Lys Asp					
	485		490		495	
Arg Thr Tyr Ile	Gly Cys Asp Val Pro Asp Ile Thr Tyr Gly Val Asn					
	500		505		510	
Leu Asn Leu Arg	Tyr Lys Gly Phe Glu Leu Ser Met Phe Gly Gln Gly					
	515		520		525	
Val Thr Gly Thr	Lys Val Asn Phe Ser Met Glu Asn Ala Trp Ala Phe					
	530		535		540	
Ser Asp Tyr Ala	Ser Pro Arg Lys Tyr His Leu Lys Arg Trp Thr Val					
	545		550		555	
Asp Asn Pro Asn	Pro Asn Ala Ala Tyr Pro Arg Ile Tyr Pro Arg Thr					
	565		570		575	
Ser Lys His Ser	Thr Tyr Asn Gln Tyr Phe Ser Asp Tyr Trp Leu Leu					
	580		585		590	
Asn Ala Asp Tyr	Phe Arg Ile Lys Asn Ile Thr Phe Gly Tyr Ser Phe					
	595		600		605	
Gln Lys Pro Val	Leu Gln Lys Leu Ser Leu Glu Ala Leu Lys Leu Tyr					
	610		615		620	
Val Ala Ala Glu	Asn Pro Phe Thr Ile Arg Ala Asp His Arg Met Glu					
	625		630		635	
Asp Phe Asp Pro	Glu Thr Ala Ser Gly Arg Gly Val Asn Thr Arg Gly					
	645		650		655	
Thr Ser Ser Ile	Ala Phe Gly Val Asn Leu Thr Phe					
	660		665			

<210> 8619

<211> 405

<212> PRT

<213> B.fragilis

<400> 8619

Val Lys His Asn	Leu Lys Thr Met Lys Lys Ser Ile Leu Ile Ala Val
1	5 10 15
Leu Thr Ala Ser	Ile Ala Thr Ser Ala Phe Ala Gln Trp Lys Pro Ala
	20 25 30
Gly Asp Lys Ile	Lys Thr Lys Trp Ala Glu Gln Val Asn Pro Glu Asn
	35 40 45
Val Leu Pro Glu	Tyr Pro Arg Pro Val Met Glu Arg Gly Glu Trp Lys
	50 55 60
Asn Leu Asn Gly	Leu Trp Asn Tyr Ala Ile Thr Glu Lys Gly Ala Ala
	65 70 75 80
Pro Ser Ala Tyr	Glu Gly Gln Ile Leu Val Pro Phe Ala Ile Glu Ser
	85 90 95
Ser Leu Ser Gly	Val Gly Lys Lys Val Gly Pro Asp Lys Glu Leu Trp
	100 105 110
Tyr Gln Arg Thr	Phe Thr Val Pro Ala Ser Trp Lys Gly Lys Lys Val
	115 120 125
Met Leu Asn Phe	Gly Ala Val Asp Trp Lys Ala Asp Ile Trp Val Asn
	130 135 140
Asp Ile Lys Val	Gly Gln His Thr Gly Gly Phe Thr Pro Phe Ser Leu
	145 150 155 160
Asp Ile Thr Ala	Ala Leu Ala Thr Lys Gly Asp Asn Lys Leu Val Val
	165 170 175
Lys Val Trp Asp	Pro Thr Asp Arg Gly Pro Gln Pro Arg Gly Lys Gln
	180 185 190
Val Asn Arg Pro	Glu Gly Ile Trp Tyr Thr Ala Val Thr Gly Ile Trp
	195 200 205
Gln Thr Val Trp	Met Glu Pro Val Ala Glu Arg His Ile Thr Asn Val

210	215	220
Arg Thr Thr Ser Asp	Ile Asp Arg Lys Lys	Leu Thr Val Asp Val Thr
225	230	235
Thr Ser Thr Ser Cys	Pro Ser Glu Val Val	Glu Val Lys Val Phe Asp
245	250	255
Gly Lys Gln Leu Val	Ala Thr Gly Lys Gly	Leu Asn Gly Gln Thr Ile
260	265	270
Asp Ile Gln Met Pro	Ala Asp Ala Lys Leu	Trp Ser Pro Ala Ser Pro
275	280	285
Thr Leu Tyr Ser Met	Gln Ile Ala Leu Leu	Ser Asn Gly Lys Val Thr
290	295	300
Asp Lys Val Asp Ser	Tyr Thr Ala Met Arg	Lys Tyr Ser Thr Arg Arg
305	310	315
Asp Lys Asp Gly Ile	Val Arg Leu Gln Leu	Asn Asn Glu Asp Val Phe
325	330	335
Gln Phe Arg Ser Ser	Arg Ser Lys Met Val	Ala Arg Arg Thr Val Tyr
340	345	350
Ser Phe Asp Arg Arg	Arg Gly Gly Tyr Asp	Ile Gln Lys Thr Lys Asp
355	360	365
Phe Gly Phe Asn Met	Ile Arg Lys His Val	Lys Gly Glu Pro Ala Arg
370	375	380
Trp Tyr Ser His Cys	Asp Lys Leu Gly Ile	Ile Val Trp Gln Asp Leu
385	390	395
Pro Lys Trp Glu Pro		
405		

<210> 8620

<211> 691

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (218)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8620

Lys His Pro Asn Met	Lys Lys Met Lys	Ser Leu Lys Gly Gly	Leu Ala
1	5	10	15
Gly Ile Leu Phe Thr	Ala Gly Leu Leu	Ala Ala Ser Cys	Thr Ser Asp
20	25	30	
Gln Ser Ser Ser Ala	Val Thr Ile Val	Asn Arg Pro Asp	Cys Thr Gln
35	40	45	
Thr Asn Val Asn Tyr	Val Gly Asn Arg	Leu Pro Leu Lys	Pro Met Asn
50	55	60	
Phe Ile Lys Leu Pro	Val Gly Ser Ile	Gln Pro Glu Gly	Trp Leu Lys
65	70	75	80
Lys Tyr Leu Glu Leu	Gln Lys Asp Gly	Leu Thr Gly His	Leu Asn Glu
85	90	95	
Ile Ser Ala Trp Leu	Gly Lys Glu Asn	Asn Ala Trp Leu	Thr Lys Gly
100	105	110	
Gly Asp His Gly Trp	Glu Glu Val Pro	Tyr Trp Leu Lys	Gly Tyr Gly
115	120	125	
Asn Leu Ala Tyr Ile	Leu Lys Asp Gln	Lys Met Ile Asp	Glu Ala Lys
130	135	140	
Val Trp Leu Glu Gly	Ala Phe Ala Ser	Gln Gln Pro Asp	Gly Tyr Phe
145	150	155	160
Gly Pro Ile Asn Glu	Arg Asn Gly Lys	Arg Glu Leu Trp	Ala Gln Met
165	170	175	

Ile Met Leu Trp Cys Leu Gln Ser Tyr Tyr Glu Tyr Ser Asn Asp Gln
 180 185 190
 Arg Val Ile Asp Leu Met Thr Asn Tyr Phe Lys Trp Gln Leu Ser Val
 195 200 205
 Pro Asp Glu Gln Phe Leu Glu Asp Tyr Xaa Glu Asn Ser Arg Gly Gly
 210 215 220
 Asp Asn Leu Leu Ser Val Tyr Trp Leu Tyr Asn Arg Thr Gly Asp Gln
 225 230 235 240
 Phe Leu Leu Glu Leu Ala Glu Lys Ile His Arg Asn Thr Ala Asp Trp
 245 250 255
 Thr Arg Pro Ser Ala Leu Arg Asn Trp His Asn Val Asn Ile Ala Gln
 260 265 270
 Cys Phe Arg Glu Pro Ala Thr Tyr Tyr Met Met Thr Gly Asp Ser Ala
 275 280 285
 Met Leu Lys Ala Ser Tyr Asn Val His Asn Leu Ile Arg Arg Thr Phe
 290 295 300
 Gly Gln Val Pro Gly Gly Met Phe Gly Ala Asp Glu Asn Ala Arg Met
 305 310 315 320
 Gly Ser Ile Asp Pro Arg Gln Gly Val Glu Thr Cys Gly Leu Val Glu
 325 330 335
 Gln Met Ala Ser Asp Glu Leu Met Leu Cys Met Thr Gly Asp Pro Leu
 340 345 350
 Trp Ala Glu His Cys Glu Glu Val Ala Phe Asn Ser Tyr Pro Ala Ala
 355 360 365
 Val Met Pro Asp Phe Lys Gly Leu Arg Tyr Ile Thr Cys Pro Asn Gln
 370 375 380
 Thr Val Ser Asp Ser Lys Asn His His Pro Gly Ile Asp Asn Arg Gly
 385 390 395 400
 Pro Phe Leu Ala Met Asn Pro Phe Ser Ser Arg Cys Cys Gln His Asn
 405 410 415
 His Ala Gln Gly Trp Pro Tyr Tyr Ala Glu His Leu Ile Leu Ala Thr
 420 425 430
 Pro Asp Asn Gly Val Ala Ala Ala Met Tyr Ala Ala Cys Lys Ala Thr
 435 440 445
 Val Lys Val Gly Asp Gly Ser Glu Ile Ser Leu His Glu Gln Thr Asn
 450 455 460
 Tyr Pro Phe Glu Glu Thr Ile Arg Phe Thr Val Asn Thr Pro Lys Ala
 465 470 475 480
 Val Ser Phe Pro Phe Tyr Leu Arg Ile Pro Ser Trp Thr Glu Gly Ala
 485 490 495
 Thr Ile Phe Val Asn Gly Lys Lys Val Ala Ala Asn Pro Glu Ala Gly
 500 505 510
 Gln Tyr Ala Cys Ile Asn Arg Glu Trp Lys Asp Asn Asp Gln Val Glu
 515 520 525
 Ile Gln Leu Pro Met Gln Leu Ser Met Arg Thr Trp Gln Val Asn Lys
 530 535 540
 Asn Ser Val Ser Val Asp Tyr Gly Pro Leu Thr Met Ser Leu Lys Ile
 545 550 555 560
 Asp Glu Asp Tyr Val Lys Lys Asp Ser Arg Ala Thr Ala Ile Gly Asp
 565 570 575
 Ser Lys Trp Gln Glu Gly Ala Asp Ala Ser Gln Trp Pro Thr Tyr Glu
 580 585 590
 Ile Tyr Ala Lys Thr Pro Trp Asn Tyr Ala Leu Val Leu Gly Lys Asn
 595 600 605
 Glu Pro Leu Lys Asp Phe Lys Val Val His Lys Glu Trp Pro Ala Asp
 610 615 620
 Asn Phe Pro Phe Thr Val Ala Ser Thr Pro Ile Glu Val Lys Ala Ile
 625 630 635 640
 Gly Arg Lys Val Pro Ser Trp Val Ile Asp Gln Tyr Asp Leu Cys Ser

				645						650					655
Glu	Leu	Pro	Glu	Met	Asp	Ala	Pro	Lys	Gly	Glu	Lys	Glu	Glu	Ile	Thr
			660					665					670		
Leu	Ile	Pro	Met	Gly	Ala	Ala	Arg	Leu	Arg	Val	Ser	Ala	Phe	Pro	Asn
		675					680					685			
Thr	Arg	Glu													
	690														

<210> 8621

<211> 528

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (65), (517)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8621

Leu	Ser	Arg	Leu	Val	Ala	Ala	Tyr	Gly	Asp	Ala	Glu	Asn	Thr	Pro	Ala
1			5					10						15	
Ile	Leu	Phe	Cys	His	Glu	Arg	Ser	Thr	Gly	His	Pro	Val	Tyr	Asp	Arg
		20						25					30		
Leu	Phe	Pro	Leu	Ser	Thr	Glu	Asn	Val	Thr	Gly	Lys	Ala	Ala	Arg	Gln
		35					40					45			
Leu	Asp	Phe	Leu	Gly	Arg	Val	Ser	Trp	Pro	Cys	Lys	Asn	Ile	Gln	Ala
	50					55					60				
Xaa	Tyr	Trp	Leu	Tyr	Asn	Ile	Thr	Gly	Asp	Ser	Phe	Leu	Leu	Asp	Leu
65					70				75					80	
Gly	Lys	Leu	Ile	His	Gln	Gln	Ser	Phe	Ser	Phe	Val	Asp	Met	Val	Asn
				85					90					95	
Arg	Gly	Asp	Leu	Lys	Arg	Ile	Asn	Thr	Ile	His	Cys	Val	Asn	Leu	Ala
			100					105					110		
Gln	Gly	Ile	Lys	Glu	Pro	Val	Ile	Tyr	Tyr	Gln	Gln	Glu	Pro	Asp	Lys
		115					120					125			
Met	Tyr	Leu	Asp	Ala	Val	Lys	Cys	Ala	Phe	Arg	Asp	Ile	Arg	Gln	Phe
	130					135					140				
His	Gly	Gln	Pro	Gln	Gly	Met	Tyr	Gly	Gly	Asp	Glu	Ala	Leu	His	Gly
145					150					155				160	
Asn	Asn	Pro	Thr	Gln	Gly	Ser	Glu	Leu	Cys	Ser	Ala	Val	Glu	Leu	Met
			165						170					175	
Tyr	Ser	Leu	Glu	Lys	Met	Val	Glu	Ile	Thr	Gly	Asp	Ile	Asp	Phe	Ala
		180					185						190		
Asp	His	Leu	Glu	Arg	Ile	Ala	Phe	Asn	Ala	Leu	Pro	Thr	Gln	Ile	Ser
	195					200						205			
Asp	Asp	Phe	Met	Thr	Lys	Gln	Tyr	Phe	Gln	Gln	Ala	Asn	Gln	Val	Met
	210					215					220				
Val	Ser	Arg	His	Arg	Arg	Asn	Phe	Asp	Gln	Asp	His	Gly	Gly	Thr	Asp
225					230				235					240	
Asn	Cys	Phe	Gly	Leu	Leu	Thr	Gly	Tyr	Pro	Cys	Cys	Ala	Ser	Asn	Met
			245						250					255	
His	Gln	Gly	Trp	Pro	Lys	Phe	Thr	Gln	Ser	Leu	Trp	Tyr	Ala	Thr	Pro
		260					265						270		
Asp	Gly	Gly	Leu	Ala	Val	Thr	Ala	Tyr	Ala	Pro	Ser	Glu	Val	Thr	Ala
	275					280						285			
Lys	Val	Ala	Asp	Gly	Cys	Thr	Val	Thr	Phe	Ser	Glu	Glu	Thr	Tyr	Tyr
	290				295						300				
Pro	Met	Asp	Asp	Lys	Ile	Ser	Phe	Thr	Leu	Gln	Ser	Met	Asp	Lys	Lys
305				310					315					320	

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Arg Lys Glu Val Asn Phe Ala Leu Gln Leu Arg Ile Pro Lys Trp Cys
      325      330      335
Arg Gln Ala Gly Ile Ser Val Asn Gly Gln Leu Leu Gln His Ala Glu
      340      345      350
Gly Gly Arg Met Ala Ile Val Asn Arg Asn Trp Lys Lys Gly Asp Arg
      355      360      365
Val Glu Leu His Leu Pro Met Glu Val Thr Ala Ser Thr Trp Tyr Glu
      370      375      380
Asn Ser Val Thr Ile Glu Arg Gly Pro Leu Val Phe Ala Leu Lys Met
      385      390      395      400
Glu Glu Lys Trp Glu Lys Lys Glu Phe Glu Glu Pro Trp Tyr Gly Pro
      405      410      415
Tyr Tyr Tyr Ser Val Thr Pro Thr Glu Pro Trp Asn Tyr Gly Leu Val
      420      425      430
Asp Phe Asn Arg Asn Lys Ala Asn Glu His Ala Arg Val Thr Ile His
      435      440      445
Thr Glu Lys Gln Ser Ser Val Phe Pro Trp Asn Lys Glu Asn Ala Pro
      450      455      460
Ile Glu Ile Arg Met Lys Ala Arg Leu Val Pro Ser Trp Lys Leu Tyr
      465      470      475      480
Asn Glu Met Ala Gly Pro Gln Pro Tyr Ser Phe Cys Ser Gly Gly Glu
      485      490      495
Arg Ala Gly Asn Arg Asn His Pro Glu Phe Leu Trp Met His Tyr Ile
      500      505      510
Lys Asn Thr Glu Xaa Pro Val Val Gly Ala Phe Arg Leu Arg Gly Asp
      515      520      525

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<210> 8622

<211> 244

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (227)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8622

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Ser Ile Asn Arg Lys Thr Leu Met Lys Lys Lys Asn Thr Phe Thr Tyr
1      5      10      15
Leu Leu Ile Gly Leu Gly Leu Cys Phe Ser Ser Leu Gly Ser Gly Leu
      20      25      30
Arg Ala Asp Thr Pro Glu Asn Tyr Thr Asn Asn Arg Tyr Pro Leu Val
      35      40      45
Arg Lys Pro Leu Met Glu Leu Pro Leu Gly Ser Ile Lys Ala Lys Gly
      50      55      60
Trp Leu Gln Glu Met Leu Val Arg Gln Lys Asn Gly Ala Thr Gly Gln
      65      70      75      80
Met Asp Lys Leu Tyr Pro Leu Val Met Gly Glu Arg Asn Gly Trp Leu
      85      90      95
Gly Gly Asp Gly Asp Gln Trp Glu Arg Gly Pro Tyr Trp Ile Asp Gly
      100      105      110
Leu Leu Pro Leu Ala Tyr Ile Leu Asp Asp Ala Gln Leu Lys Ala Lys
      115      120      125
Val Gln Pro Trp Ile Glu Trp Ala Leu Lys Ser Gln Arg Glu Asp Gly
      130      135      140
Phe Phe Gly Pro Ala Lys Asp Tyr Pro Gly Glu Ala Gly Ile Gln Arg
      145      150      155      160
Asp Asn Ser His Asp Trp Trp Pro Arg Met Val Met Leu Lys Ile Leu

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<210> 8623
<211> 60
<212> PRT
<213> B.fragilis
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<210> 8624
<211> 371
<212> PRT
<213> B.fragilis
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<400> 8624																
Gln	Lys	Ala	Met	Lys	Thr	Lys	Ile	Tyr	Leu	Leu	Phe	Ile	Thr	Thr	Leu	
1				5					10						15	
Phe	Phe	Cys	Ala	Gly	Cys	Gly	Asn	Lys	Ser	Gly	Gly	Gln	Lys	Gln	Glu	
			20					25					30			
Ser	Val	Ser	Ala	Ala	Lys	Asp	Thr	Tyr	Val	Asn	Pro	Leu	Phe	Pro	Glu	
		35					40					45				
Gly	Ala	Asp	Pro	Ser	Ala	Leu	Phe	His	Asn	Gly	Lys	Tyr	Tyr	Tyr	Thr	
	50					55					60					
His	Gly	Thr	Glu	Asp	Lys	Ile	Met	Leu	Trp	Glu	Thr	Ser	Asp	Ile	Thr	
65				70						75					80	
Asp	Met	Ala	His	Ala	Val	Cys	Lys	Ile	Val	Trp	Lys	Pro	His	Asp	Pro	
				85					90					95		
Ser	Asn	Ser	Cys	His	Leu	Trp	Ala	Pro	Glu	Ile	His	Tyr	Ile	Asn	Asp	
			100					105					110			
Lys	Trp	Tyr	Ile	Tyr	Tyr	Ala	Ala	Asp	Gly	Asp	Asn	Ala	Asp	Asn	His	
		115				120						125				
Gln	Leu	Tyr	Val	Leu	Glu	Asn	Ser	Ser	Pro	Asp	Pro	Met	Glu	Gly	Lys	
	130					135					140					
Phe	Glu	Met	Lys	Gly	Ser	Ile	Ile	Thr	Asn	Pro	Glu	Trp	Asn	Trp	Gly	
145				150					155						160	
Ile	Gln	Ala	Thr	Thr	Phe	Glu	His	Lys	Gly	Val	Arg	Tyr	Leu	Ala	Trp	
			165					170						175		
Ser	Gly	Trp	Pro	Lys	Arg	Arg	Thr	Asn	Ala	Glu	Thr	Gln	Cys	Ile	Tyr	
			180					185					190			
Ile	Ala	Arg	Met	Lys	Asp	Pro	Trp	Thr	Leu	Asp	Ser	Pro	Arg	Val	Leu	
		195					200					205				

Ile Ser Lys Pro Glu Tyr Glu Trp Glu Arg Gln Trp Val Asn Pro Asp
 210 215 220
 Gly Ser Arg Thr Ala Tyr Pro Ile Tyr Val Asn Glu Gly Pro Gln Phe
 225 230 235 240
 Phe His Ser Lys Asp Asn Lys Thr Leu Ile Leu Tyr Tyr Ala Ala Ser
 245 250 255
 Gly Ser Trp Ser Pro Tyr Tyr Cys Val Gly Met Leu Thr Ala Asp Ala
 260 265 270
 Glu Ser Asp Leu Leu Asp Pro Ala Ser Trp Thr Lys Ser Ser Val Pro
 275 280 285
 Val Phe Gln Gln Ser Leu Glu Asn Glu Val Tyr Gly Pro Gly Gly Leu
 290 295 300
 Ser Phe Val Pro Ser Pro Asp Gly Thr Glu Trp Tyr Met Ile Tyr His
 305 310 315 320
 Ala Arg Gln Val Thr Asn Gly Asp Thr Gly Ser Pro Glu Thr Arg Asn
 325 330 335
 Pro Arg Ile Gln Lys Ile Gly Trp Asp Ala His Gly Met Pro Asp Leu
 340 345 350
 Gly Ile Pro Val Arg Ala Gly Val Ala Leu Pro Lys Pro Ser Gly Thr
 355 360 365
 Leu Leu Lys
 370

<210> 8625

<211> 740

<212> PRT

<213> B.fragilis

<400> 8625

Tyr Tyr Glu Ser Met Lys Leu Asn Ser Phe Pro His Tyr Leu Gln Leu
 1 5 10 15
 Asp Ala Met Asp Cys Gly Pro Ser Cys Leu Arg Met Ile Ala Lys Tyr
 20 25 30
 Tyr Gly Lys Ser Tyr Ser Leu Gln Thr Leu Arg Ala Arg Ser Phe Ile
 35 40 45
 Thr Arg Glu Gly Val Ser Met Leu Gly Ile Ser Asp Ala Ala Glu Ser
 50 55 60
 Ile Gly Phe Arg Thr Ser Gly Val Arg Ile Ser Leu Glu Gln Leu Lys
 65 70 75 80
 Lys Asp Val Pro Leu Pro Cys Ile Leu His Trp Asn Gln Asn His Phe
 85 90 95
 Val Val Cys Tyr Asp Ile Lys Lys Lys Arg Ser Gly Tyr Arg Phe Tyr
 100 105 110
 Ile Ala Asp Pro Ala Arg Gln Leu Ile Ser Tyr Ser Glu Glu Glu Phe
 115 120 125
 Lys Lys Cys Trp Leu Ser Thr Lys Val Asn Gly Glu Glu Lys Gly Ala
 130 135 140
 Ala Leu Ala Leu Glu Pro Gly Pro Glu Phe Gln Gly Gln Gly Asp Glu
 145 150 155 160
 Glu Glu Ser Gly Ser Arg Ser Leu Arg Phe Phe Leu Lys Tyr Leu Ser
 165 170 175
 Pro Tyr Arg Lys Gln Leu Ile Gln Leu Ile Leu Gly Met Leu Thr Ala
 180 185 190
 Ser Leu Leu Gln Leu Ile Phe Pro Phe Leu Thr Gln Ser Leu Val Asp
 195 200 205
 Val Gly Ile Arg Asp Gly Asn Leu Asn Phe Ile Thr Leu Ile Leu Ile
 210 215 220
 Ser Gln Leu Val Ile Ser Val Ser Gln Leu Ser Val Glu Phe Ile Arg
 225 230 235 240

Ser	Trp	Ile	Met	Leu	His	Met	Asn	Thr	Arg	Ile	Asn	Ile	Ser	Leu	Ile
				245					250					255	
Ser	Asp	Phe	Leu	Ala	Lys	Leu	Met	Lys	Leu	Pro	Leu	His	Tyr	Phe	Asp
			260					265					270		
Thr	Lys	Met	Ile	Gly	Asp	Ile	Met	Gln	Arg	Ile	Gly	Asp	His	Gly	Arg
		275					280					285			
Ile	Glu	Ser	Phe	Leu	Thr	Gly	Ser	Ser	Ile	Ser	Thr	Leu	Phe	Ser	Phe
	290					295					300				
Val	Asn	Phe	Phe	Ile	Phe	Ala	Phe	Val	Leu	Ala	Tyr	Tyr	Asn	Leu	Gly
305					310					315					320
Ile	Leu	Ala	Ile	Phe	Leu	Val	Gly	Asn	Ser	Leu	Tyr	Ile	Cys	Trp	Ile
			325					330					335		
Leu	Val	Phe	Met	Lys	Tyr	Arg	Arg	Glu	Leu	Asp	Ile	Arg	Arg	Phe	Ala
		340						345					350		
Gln	Ala	Ala	Gly	Glu	Gln	Ser	Ser	Leu	Ile	Gln	Leu	Val	Thr	Ala	Met
		355					360					365			
Gln	Glu	Ile	Lys	Leu	Asn	Asn	Cys	Glu	Lys	Gln	Lys	Arg	Trp	Gln	Trp
	370				375						380				
Glu	Arg	Ile	Gln	Val	Lys	Leu	Phe	Lys	Ile	Ser	Val	Lys	Gly	Leu	Ala
385					390					395					400
Leu	Gly	Gln	Val	Gln	Gln	Val	Gly	Ser	Val	Phe	Phe	Asn	Gln	Thr	Thr
			405					410					415		
Asn	Ile	Val	Ile	Ser	Phe	Ile	Ala	Ala	Lys	Ser	Val	Val	Glu	Gly	Asn
		420						425					430		
Met	Thr	Leu	Gly	Met	Met	Met	Ser	Leu	Thr	Tyr	Ile	Ile	Gly	Gln	Leu
		435					440					445			
Ser	Gly	Pro	Ile	Gly	Ser	Phe	Ile	Gly	Phe	Ala	Gln	Leu	Gln	Asp	
	450				455					460					
Ala	Lys	Ile	Ser	Leu	Glu	Arg	Leu	Asn	Glu	Ile	His	Gly	Gln	Lys	Asp
465					470				475						480
Glu	Glu	Gln	Asp	Ile	Ala	Ser	Lys	Leu	Thr	Val	Leu	Pro	Glu	Arg	Arg
			485					490					495		
Asp	Ile	Arg	Ile	Glu	Asn	Leu	Ser	Phe	Ser	Tyr	Asp	Gly	Ala	Asp	Arg
		500						505					510		
Asp	Tyr	Val	Leu	Asn	Asp	Val	Asn	Leu	Asn	Ile	Pro	Glu	His	Lys	Val
	515						520					525			
Thr	Ala	Ile	Val	Gly	Ala	Ser	Gly	Ser	Gly	Lys	Thr	Thr	Leu	Ile	Lys
	530					535					540				
Leu	Met	Leu	Gly	Phe	Tyr	Thr	Pro	Asn	Lys	Gly	Asp	Ile	Lys	Ile	Gly
545					550					555					560
Glu	Thr	Pro	Leu	Asp	Val	Val	Asn	Pro	His	Leu	Trp	Arg	Ala	Lys	Ser
			565					570					575		
Gly	Ser	Val	Met	Gln	Asp	Gly	Phe	Ile	Leu	Ser	Asp	Thr	Ile	Ala	Asn
		580						585					590		
Asn	Ile	Ala													

705 710 715 720
 Leu Thr Glu Lys Lys Gly Leu Tyr Tyr Gln Leu Val Lys Asn Gln Leu
 725 730 735
 Glu Leu Gly Ser
 740

<210> 8626
 <211> 203
 <212> PRT
 <213> B.fragilis

<400> 8626
 Lys Lys Asn Lys Met Asp Ala His Ile Glu Gln Ile Ala Lys Ser Leu
 1 5 10 15
 Tyr Phe Ser Cys Lys Gln Phe Asp Ile Gly Leu Phe Tyr Gly Lys Met
 20 25 30
 Gly Arg Cys Leu Phe Phe Phe Asp Tyr Ser Arg Val Thr Glu Leu Arg
 35 40 45
 Ala Phe Glu Glu Leu Ala Gly Glu Leu Leu Asp Glu Val Met Glu Ser
 50 55 60
 Val Cys Leu Gly Met Pro Val Gly Leu Ser Phe Gly Trp Cys Gly Ile
 65 70 75 80
 Gly Trp Gly Val Glu Tyr Leu Val Arg Lys Gly Phe Val Glu Asp Asp
 85 90 95
 Asp Asn Glu Gly Arg Asn Lys Ile Asp Glu Lys Val Met Glu Tyr Asp
 100 105 110
 Val Arg Arg Leu Gly Asp Tyr Ser Leu Ala Thr Gly Leu Glu Gly Ile
 115 120 125
 Ser Trp Tyr Val Leu Leu Arg Leu Tyr Ser Gly Asp Lys Gly Val Arg
 130 135 140
 Ile Gly Glu Lys Asn Tyr Leu Ser Asp Leu Lys Ser Ala Cys Glu Lys
 145 150 155 160
 Ala Leu Lys Lys Gly Arg Tyr Glu Gly Ile Leu Leu Leu Leu Asp Phe
 165 170 175
 Leu Asn Gly Lys Arg Ala Asn Tyr Pro Phe Gly Glu Phe Phe Ser Gln
 180 185 190
 Ile Pro Gly Glu Ala His Tyr Ile Pro Asp Met
 195 200

<210> 8627
 <211> 223
 <212> PRT
 <213> B.fragilis

<400> 8627
 Tyr Val Met Lys Asp Ile Thr Met Leu Asn Lys Pro Pro Leu Asp Phe
 1 5 10 15
 Phe Gly Cys Asn Phe Cys Leu Val Glu Lys His Arg Met Ala Phe Val
 20 25 30
 Leu Ile Ser Lys Cys Gly Leu Thr Phe Leu Glu Asn Ile Ala Ile Tyr
 35 40 45
 Ala Ser Ala Gly Met Ile Pro Asp Thr Glu Asp Gln Thr His Phe Tyr
 50 55 60
 Ile Ala Arg Val Lys Pro Glu Arg Phe Leu Val Pro Val Ser Glu Met
 65 70 75 80
 Ser Gly Tyr Glu Arg Glu His Lys Ser Tyr Leu Lys Val Ala Val Trp
 85 90 95
 Arg Asp Pro Val Glu Arg Leu Val Ser Ala Tyr Lys Tyr Phe Ile Leu
 100 105 110

Glu Arg Thr Phe Asn Gln Tyr Met Tyr Met Cys Asn Leu Tyr Gln Asp
 115 120 125
 Cys Ser Phe Glu Arg Phe Leu Ser Phe Val Glu Phe Glu Leu Gly Lys
 130 135 140
 Ala Asn Pro Leu Trp Gln Asp Glu His Ile Arg Arg Gln Ser Asp Phe
 145 150 155 160
 Tyr Thr Ser Ala Asp Val Asp Cys Ile Val Pro Leu Ser Lys Leu Asn
 165 170 175
 Arg Phe Leu Ala Glu Arg Gly Val Asp Met Pro Glu Glu Lys Ala Asn
 180 185 190
 Ala Thr Ser Val Arg Phe Glu Leu Lys Asp Glu Lys Gln Ile Ala Lys
 195 200 205
 Ile Lys Glu Leu Tyr Arg Leu Asp Tyr Glu Ile Pro Val Gly Cys
 210 215 220

<210> 8628

<211> 239

<212> PRT

<213> B.fragilis

<400> 8628

Pro Leu Val Lys Thr Leu Ala Gly Arg Glu Cys Phe Ala Gly Val Met
 1 5 10 15
 Cys Tyr Cys Thr Lys Thr Arg Thr Asp Ile Val Ser Gly Asn Thr Leu
 20 25 30
 Ala Val His Ala Asp Gly Gln Val Gln Ser Trp Glu Arg Arg Gly Arg
 35 40 45
 Glu Leu Phe Ala Thr Gly Thr Val Val Ser Gly Ser Thr Tyr Phe Ser
 50 55 60
 Arg Val Met Asp Cys Arg Cys Tyr Val Pro Met Val Tyr Asn Tyr Leu
 65 70 75 80
 Tyr Arg Arg Asp Phe Ile Glu Gln Asn Gly Phe Arg Phe Glu Pro Gly
 85 90 95
 Leu Val His Glu Asp Glu Leu Trp Thr Pro Gln Val Leu Thr Thr Ala
 100 105 110
 Gln Lys Ile Thr Val Ala Asp Ile Asp Phe Tyr Tyr Tyr Arg Gln Arg
 115 120 125
 Glu Gly Ser Ile Met Thr Ala Thr Ala Ala Gly Arg Arg Ile Ala Ser
 130 135 140
 Ile Gln Leu Ile Ile Glu Lys Leu Leu Glu Tyr Ser Arg Lys His Leu
 145 150 155 160
 Phe Glu Lys Lys Tyr Arg Glu Ala Lys Glu Ala Leu Tyr Val Arg Leu
 165 170 175
 Leu Gln Ile Tyr Ser Thr Ala Cys Thr Leu His Pro Asp Gly Thr Tyr
 180 185 190
 Thr Thr Leu Tyr Asp Arg Ala Gly Glu Met Leu Arg Val Cys Glu Glu
 195 200 205
 Leu Arg Arg Gln Glu Ser Leu Gly Arg Trp Tyr Ser Glu Glu Ile Leu
 210 215 220
 Asn Arg Met Lys Leu Tyr Tyr Asp Arg Leu Gln Thr Met Glu Gly
 225 230 235

<210> 8629

<211> 208

<212> PRT

<213> B.fragilis

<400> 8629

Gly Cys Cys Ser Arg Arg Gly Asn Pro Pro Gly Thr Asp Gly Lys Glu

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1           5           10           15
Arg Ile Val Leu Ser Val Gly Glu Glu Ser Val Gly Ile Arg Lys Leu
20           25           30
Asp Met Glu Lys Glu His Thr His Lys Glu Ile Glu Leu Arg Ser Glu
35           40           45
Glu Val Gln Glu Val Met Asn Arg Val Pro Ala Trp Ile Leu Arg Ser
50           55           60
Gly Ile Thr Val Leu Phe Val Ile Val Val Ala Leu Val Ala Gly Ser
65           70           75           80
Tyr Trp Phe Lys Tyr Pro Asp Val Ile Ala Ala Glu Val Thr Val Ser
85           90           95
Thr Gln Asp Pro Pro Ala Tyr Val Val Ala Arg Ala Ala Gly Arg Leu
100          105          110
Glu Asn Leu Tyr Val Gln Asn Gly Gln Glu Val Glu Pro Asp Thr Asn
115          120          125
Leu Gly Thr Ile Glu Asn Thr Ala Cys Ala Ser Asp Val Phe Ser Leu
130          135          140
Gln Glu Arg Met Arg Lys Trp Lys Gln Glu Gly Tyr Thr Pro Glu Ser
145          150          155          160
Gly Lys Gly Leu Phe Leu His Ser Glu Thr Asp Arg Trp Arg Leu Gly
165          170          175
Glu Ile Gln Ser Ala Tyr Ala Ala Phe Val Ser Thr Leu Ser Glu Met
180          185          190
Val Arg Met Asn Glu Leu Gly Tyr Tyr Ala Lys Lys Leu Gln Ser Ser
195          200          205

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<210> 8630

<211> 255

<212> PRT

<213> B.fragilis

<400> 8630

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Arg Pro Gln Leu Glu Ser Phe Glu Ser Ile Thr Gly Lys Gly Ile Lys
1           5           10           15
Val Val Tyr Gln Gly Asp Thr Tyr Trp Val Gly Ser His Lys Leu Leu
20           25           30
Lys Asp Phe Ser Ala Ser Leu Ser Asp Val Leu Ala Glu Met Met Val
35           40           45
Gln Tyr Glu Ser Asp Gly Asn Ser Ile Val Tyr Phe Gly Arg Gly Thr
50           55           60
Glu Val Leu Ala Val Val Ala Ile Ala Asp Gln Ile Lys Pro Thr Ser
65           70           75           80
Ala Glu Ala Val Lys Glu Leu Lys Arg Gln Gly Ile Asp Ile Cys Met
85           90           95
Leu Thr Gly Asp Gly Gln Arg Thr Ala Leu Ala Val Ser Gly Lys Leu
100          105          110
Gly Ile Asp Arg Phe Val Ala Asp Ala Leu Pro Asp Asp Lys Glu Glu
115          120          125
Phe Val Arg Glu Leu Gln Met Gln Gly Lys Thr Val Ala Met Val Gly
130          135          140
Asp Gly Ile Asn Asp Ser Gln Ala Leu Ala Leu Ala Asp Val Ser Ile
145          150          155          160
Ala Met Gly Lys Gly Thr Asp Ile Ala Met Asp Val Ala Met Val Thr
165          170          175
Leu Met Thr Ser Asp Leu Leu Leu Leu Pro Arg Ala Phe Glu Leu Ser
180          185          190
Lys Gln Thr Val Lys Leu Ile His Gln Asn Leu Phe Trp Ala Phe Ile
195          200          205
Tyr Asn Leu Ile Gly Ile Pro Ile Ala Ala Gly Ile Leu Phe Pro Val

```

210		215		220
Asn Gly Leu Leu Leu Asn Pro Met Leu Ala Ser Ala Ala Met Ala Phe				
225	230	235	240	
Ser Ser Val Ser Val Val Leu Asn Ser Leu Ser Leu Ala Arg Lys				
245	250	255		

<210> 8631
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 8631
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 1 5 10 15
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 20 25 30
 Lys Lys Lys Asn Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 35 40 45
 Lys Lys Asn Pro Gln Gly Pro Leu Cys Tyr Ser Val Pro Ser Val Val
 50 55 60
 Ser Ser Phe
 65

<210> 8632
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8632
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 1 5 10 15
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 20 25 30
 Lys Lys Lys Ile Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
 35 40 45
 Lys Lys Thr Pro Lys Asp Leu Cys Val Thr Leu Cys Pro Leu Trp
 50 55 60

<210> 8633
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8633
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Pro Pro
 1 5 10 15
 Arg Thr Ser Val Leu Leu Cys Ala Leu Cys Gly Glu Phe Val Leu Lys
 20 25 30
 Gly Ile Val Ile Phe Trp Pro Asp Ser Val Asn Ser Ala Arg His Leu
 35 40 45
 His Leu Lys Met Pro Ser Leu His Trp Gln Ala Ser Asp
 50 55 60

<210> 8634
 <211> 767
 <212> PRT
 <213> B.fragilis

<400> 8634

Leu Val Ser Pro Cys Ala Val Cys Gly Glu Ser Tyr Leu Phe Leu Ile
 1 5 10 15
 Glu Tyr Lys Pro Asn Lys Lys Asp Lys Arg Arg Asn Leu Met Lys Tyr
 20 25 30
 Met Leu Leu Thr Gly Leu Leu Leu Gly Ser Leu Thr Val Gln Ala Gln
 35 40 45
 Val Ser Gly Thr Val Lys Asp Gln Ala Gly Glu Pro Ile Ile Gly Ala
 50 55 60
 Asn Val Phe Trp Lys Asn Ile Ser Gly Gly Val Ala Thr Arg Glu Asp
 65 70 75 80
 Gly Thr Phe Ser Ile Ser Lys Pro Asp Lys Ser Asn His Leu Ile Val
 85 90 95
 Ser Phe Ile Gly Tyr Glu Asn Asp Thr Ile Gln Val Asn Asp Lys Lys
 100 105 110
 Ala Val Leu Asp Val Val Leu Arg Glu Gly Met Glu Leu Ser Glu Val
 115 120 125
 Gln Ile Val Ser Arg Lys Leu Ser Thr Leu Lys Leu Arg Ser Ser Val
 130 135 140
 Met Asn Glu Glu Ile Ile Thr Ser Asp Glu Leu Cys Arg Ala Ala Cys
 145 150 155 160
 Cys Asn Leu Gly Glu Ser Phe Val Thr Asn Pro Ser Val Asp Val Ser
 165 170 175
 Tyr Ser Asp Ala Ala Thr Gly Ala Lys Gln Ile Lys Leu Leu Gly Leu
 180 185 190
 Ser Gly Thr Tyr Val Gln Met Leu Thr Glu Asn Ile Pro Asn Tyr Arg
 195 200 205
 Gly Ala Ala Ser Pro Tyr Gly Leu Gly Tyr Val Pro Gly Pro Trp Met
 210 215 220
 His Ser Ile Gln Val Ser Lys Gly Ile Ser Ser Val Lys Asn Gly Tyr
 225 230 235 240
 Glu Ala Leu Thr Gly Gln Ile Asn Val Glu Phe Lys Lys Pro Gln Leu
 245 250 255
 Pro Glu Ala Asp Trp Val Ser Ala Asn Leu Phe Ala Ser Thr Thr Asn
 260 265 270
 Arg Tyr Glu Ala Asn Ala Asp Ala Thr Val Lys Leu Ser Lys Arg Trp
 275 280 285
 Ser Thr Ser Leu Leu Ala His Tyr Glu Asn Glu Thr Lys Ala His Asp
 290 295 300
 Gly Asn Asp Asp Gly Phe Ala Asp Ile Pro Arg Ile Glu Gln Tyr Asn
 305 310 315 320
 Phe Trp Asn Arg Trp Ala Tyr Met Gly Asp His Tyr Val Phe Gln Ala
 325 330 335
 Gly Ile Lys Ala Leu Asp Glu Ser Arg Lys Gly Gly Gln Val Ser His
 340 345 350
 Ser Gly Val Pro Ala Ala Asp Arg Tyr Glu Ile Asp Ile Asp Thr Arg
 355 360 365
 Arg Tyr Glu Ala Phe Thr Lys Asn Ala Tyr Ile Phe Asn Lys Glu Lys
 370 375 380
 Asn Thr Asn Leu Ala Leu Ile Leu Ser Gly Thr Leu His Asn Gln Asp
 385 390 395 400
 Ala Leu Tyr Gly Arg Lys Ile Tyr Asn Val Asp Gln Ser Asn Ala Tyr
 405 410 415
 Ala Ser Leu Met Phe Glu Thr Glu Phe Thr Lys Glu His Asn Leu Ser
 420 425 430
 Ala Gly Phe Ser Tyr Asn Tyr Asp Gly Tyr Asp Gln His Tyr Arg Leu
 435 440 445
 Thr Asn Asn Ala Glu Thr Pro Leu Thr Lys Ala Phe Ala Arg Glu Ser
 450 455 460
 Val Gly Gly Ala Tyr Ala Gln Tyr Thr Phe Asn Leu Asp Asn Lys Phe

465 470 475 480
 Val Leu Met Ala Gly Leu Arg Gly Asp His Ser Ser Glu Tyr Gly Phe
 485 490 495
 Phe Val Thr Pro Arg Ala His Ile Lys Tyr Asn Pro Asn Asp Phe Val
 500 505 510
 His Phe Arg Leu Ser Ala Gly Lys Gly Tyr Arg Thr Asn His Val Leu
 515 520 525
 Ala Glu Asn Asn Tyr Leu Met Ala Ser Ser Arg Lys Val Ser Ile Ala
 530 535 540
 Asp His Leu Asp Gln Glu Glu Ala Trp Asn Tyr Gly Ala Ser Ile Ser
 545 550 555 560
 Gly Tyr Ile Pro Leu Phe Gly Lys Thr Leu Asn Leu Asn Leu Glu Tyr
 565 570 575
 Tyr Tyr Thr Asp Phe Leu Lys Gln Val Val Val Asp Met Asp Thr Asn
 580 585 590
 Pro His Glu Val Ala Phe Tyr Asn Leu Asp Gly Arg Ser Tyr Ser Gln
 595 600 605
 Val Phe Gln Val Glu Ala Thr Tyr Pro Phe Phe Gln Gly Phe Ser Leu
 610 615 620
 Thr Ala Ala Tyr Arg Trp Thr Asp Ala Lys Thr Thr Tyr Asn His Gln
 625 630 635 640
 Leu Met Glu Lys Pro Leu Thr Gly Lys Tyr Lys Gly Leu Val Thr Ala
 645 650 655
 Ser Tyr Gln Thr Pro Leu Gly Leu Trp Gln Phe Asp Ala Thr Trp Gln
 660 665 670
 Met Asn Gly Gly Gly Arg Met Pro Asn Pro Tyr Thr Leu Ala Asp Gly
 675 680 685
 Thr Ser Ser Trp Asp Ala Arg Tyr Lys Gly Phe Ser Gln Leu Ser Ala
 690 695 700
 Gln Val Thr Arg Tyr Phe Arg Arg Trp Ser Ile Tyr Ile Gly Gly Glu
 705 710 715 720
 Asn Leu Thr Asn Phe Lys Gln Lys Asn Pro Ile Ile Asp Ala Ala Asp
 725 730 735
 Pro Trp Gly Asp Arg Phe Asp Ser Thr Met Ile Trp Gly Pro Val His
 740 745 750
 Gly Ala Lys Gly Tyr Ile Gly Val Arg Phe Asn Leu Ala Arg Asp
 755 760 765

<210> 8635

<211> 190

<212> PRT

<213> B.fragilis

<400> 8635

Ile Met Lys Thr Asn Glu Val Leu Glu Thr Ile Lys Ala Arg Arg Ser
 1 5 10 15
 Val Arg Ala Tyr Asp Arg Lys Gln Ile Pro Ala Asp Asp Leu Asn Ala
 20 25 30
 Ile Leu Glu Ala Gly Ala Tyr Ala Pro Ser Gly Met His Tyr Glu Thr
 35 40 45
 Trp His Phe Thr Ala Val Cys Asn Thr Val Lys Leu Glu Glu Leu Asn
 50 55 60
 Glu Arg Ile Lys Gly Ala Phe Ala Lys Ser Asp Asp Lys His Leu Arg
 65 70 75 80
 Glu Arg Gly His Ser Glu Thr Tyr Cys Cys Tyr Tyr His Ala Pro Thr
 85 90 95
 Leu Val Ile Val Ser Asn Glu Pro Lys Gln Trp Trp Ala Gly Met Asp
 100 105 110
 Cys Ala Cys Ala Ile Glu Asn Met Phe Leu Ala Ala Thr Ser Leu Gly

115 120 125
 Ile Ala Ser Cys Trp Ile Asn Gln Leu Gly Thr Thr Cys Asp Asp Pro
 130 135 140
 Glu Val Arg Ala Tyr Leu Thr Ser Leu Gly Val Pro Glu Asn His Lys
 145 150 155 160
 Val Tyr Gly Cys Val Ala Leu Gly Tyr Lys Ala Glu Gly Ala Leu Leu
 165 170 175
 Lys Glu Lys Thr Val Lys Ala Gly Thr Ile Thr Ile Val Glu
 180 185 190

<210> 8636
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 8636
 Ile Glu Phe Ala Lys Met Ile Arg Ser Lys Met Lys Ser Thr Trp Met
 1 5 10 15
 Leu Gly Leu Leu Leu Leu Gly Ser Cys Gln Gln Lys Gly Pro Ala
 20 25 30
 Ser Gly Arg Ala Glu Met Lys Gly Glu Ser Asp Ser Leu Ser Val Arg
 35 40 45
 His Gly Gln Glu Asn Ala Leu Ser Val Ser Asp Glu Tyr Pro Glu Gly
 50 55 60
 Tyr Val Pro Val Pro Gly Ile Arg Tyr Gln Ala Asn Tyr Leu Thr Gly
 65 70 75 80
 Asn Pro Glu Arg Leu Asp Val Lys Ala Ala Leu Arg Asn Val Arg Pro
 85 90 95
 Leu Lys Leu Ser Gln Leu Gly Ser Gln Leu Asp Phe Met Val Phe Lys
 100 105 110
 Asp Val Lys Gly Gly Ile Phe Arg Leu Ile Pro Ile Glu Glu Gly Cys
 115 120 125
 Leu Gly Val Gly Ile Gly Gly Ile Trp Leu Leu Asp Gly Asn Leu Lys
 130 135 140
 Met Ile Arg Met Leu Phe Arg Asn Asp Val Asp Ile Thr Glu Glu Asn
 145 150 155 160
 Gly Phe Thr Asn Phe Gln Thr Lys Arg Tyr Ile Asn Pro Asp Tyr Tyr
 165 170 175
 Glu Lys Ser Ser Arg Thr Leu Ile Gly Val Leu Tyr Asp Gln Arg Asp
 180 185 190
 Lys Lys Asn Pro Lys Ser Phe Val Arg Leu Ser Leu Lys Asp Leu Leu
 195 200 205
 Ser Ala Ser Arg Pro Leu Thr Pro Asp Asp Ile His Lys Arg Ala Gly
 210 215 220
 Ser Ser Pro Arg Gly Trp Lys Asn Ala Ala Ser Ser Gln Leu Lys Pro
 225 230 235 240

<210> 8637
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 8637
 Tyr Glu Leu Tyr Leu Ser Ile Val Asn Asp Tyr Ile Asn Val Glu Phe
 1 5 10 15
 Lys Glu Glu Pro Leu Met Lys Lys Gln Tyr Val Ser Leu Leu Ala Ile
 20 25 30
 Ile Leu Ala Thr Ser Gly Phe Leu Phe Ser Cys Gly Asp Lys Met Asn
 35 40 45

```

Lys Asn Thr Gly Ala Leu Glu Phe Asp Ser Ile Gln Val Asn Glu Thr
 50          55          60
Ala His Leu Phe Gly Asp Thr Ala Lys Pro Ala Cys Asn Leu Thr Ile
 65          70          75          80
Asn Phe Ala Tyr Pro Val Lys Ser Thr Asp Asn Lys Leu Lys Asp Ser
          85          90          95
Leu Asn Ser Tyr Phe Ile Ala Ala Cys Phe Gly Glu Gly Tyr Ile Gly
          100          105          110
Glu Lys Pro Ala Gln Val Val Lys Glu Tyr Thr Glu His Tyr Val Lys
          115          120          125
Glu Tyr Arg Thr Asp Leu Glu Pro Met Tyr Ala Glu Asp Glu Lys Asn
          130          135          140
Lys Glu Ser Glu Gly Ser Ile Gly Ala Trp Tyr Ser Tyr Tyr Lys Gly
          145          150          155          160
Ile Glu Ser His Val Gln Leu Tyr Tyr Lys Asn Leu Leu Val Tyr Arg
          165          170          175
Ile Asn Tyr Asn Glu Tyr Thr Gly Gly Ala His Gly Ile Tyr Met Thr
          180          185          190
Thr Phe Leu Asn Met Asp Leu Ile Asn Leu Arg Pro Leu Lys Leu Asp
          195          200          205
Asp Ile Phe Thr Gly Asp Tyr Lys Glu Ala Leu Thr Asp Leu Leu Trp
          210          215          220
Asn Gln Leu Met Ala Asp Lys Lys Val Thr Thr His Glu Ala Leu Glu
          225          230          235          240
Asp Met Gly Tyr Gly Ser Thr Gly Asp Ile Ala Pro Thr Glu Asn Phe
          245          250          255
Tyr Leu Asp Lys Asp Gly Ile Thr Phe Tyr Tyr Asn Val Tyr Asp Ile
          260          265          270
Thr Pro Tyr Ala Met Gly Pro Val Glu Ile Lys Ile Pro Tyr Glu Met
          275          280          285
Met Glu His Met Leu Gly Ser Asn Pro Ile Ile Gly Glu Met Lys Ser
          290          295          300

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Lys

305

<210> 8638

<211> 671

<212> PRT

<213> B.fragilis

<400> 8638

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Thr Ile His Lys Leu Gln Lys Thr Ile Met Lys Gln Glu Glu Asp Lys
 1          5          10          15
Phe Thr Gly Leu Pro Glu Asn Ala Phe Arg Glu Leu Lys Pro Gly Glu
          20          25          30
Val Tyr Asn Pro Leu Met Ser Pro Lys Lys Thr Tyr Pro Glu Val Asn
          35          40          45
Leu Trp Ser Val Ala Trp Gly Ile Ala Met Ala Ile Leu Phe Ser Ala
          50          55          60
Ala Ala Ala Tyr Leu Gly Leu Lys Val Gly Gln Val Phe Glu Ala Ala
          65          70          75          80
Ile Pro Ile Ala Ile Ile Ala Val Gly Val Ser Gly Ala Ala Lys Arg
          85          90          95
Lys Asn Ala Leu Gly Glu Asn Val Ile Ile Gln Ser Ile Gly Ala Cys
          100          105          110
Ser Gly Val Ile Val Ala Gly Ala Ile Phe Thr Leu Pro Ala Leu Tyr
          115          120          125
Ile Leu Gln Ala Lys Tyr Pro Asp Met Ser Val Thr Phe Met Gln Val
          130          135          140

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Phe	Ile	Ser	Ser	Leu	Leu	Gly	Gly	Val	Leu	Gly	Ile	Leu	Phe	Leu	Ile
145					150					155					160
Pro	Phe	Arg	Lys	Tyr	Phe	Val	Ser	Asp	Met	His	Gly	Lys	Tyr	Pro	Phe
				165					170						175
Pro	Glu	Ala	Thr	Ala	Thr	Thr	Gln	Val	Leu	Val	Ser	Gly	Glu	Lys	Gly
			180					185					190		
Gly	Ser	Gln	Ala	Lys	Pro	Leu	Leu	Met	Ala	Gly	Leu	Ile	Gly	Gly	Leu
		195					200					205			
Tyr	Asp	Phe	Ile	Val	Ala	Thr	Phe	Gly	Trp	Trp	Asn	Glu	Asn	Phe	Thr
	210					215					220				
Thr	Arg	Val	Cys	Gly	Val	Gly	Glu	Met	Leu	Ala	Asp	Lys	Ala	Lys	Leu
225					230					235					240
Val	Phe	Lys	Val	Asn	Thr	Gly	Ala	Ala	Val	Leu	Gly	Leu	Gly	Tyr	Ile
				245					250						255
Val	Gly	Leu	Lys	Tyr	Ala	Ser	Ile	Ile	Cys	Phe	Gly	Ser	Leu	Ala	Val
			260					265					270		
Trp	Trp	Ile	Ile	Val	Pro	Gly	Met	Ser	Leu	Phe	Phe	Gly	Asp	Ser	Val
		275					280						285		
Leu	Asn	Gln	Trp	Asn	Pro	Asp	Ile	Thr	Ala	Thr	Val	Gly	Ser	Met	Ser
	290				295						300				
Pro	Glu	Gln	Ile	Phe	Ser	His	Tyr	Ala	Lys	Ser	Ile	Gly	Ile	Gly	Gly
305					310					315					320
Ile	Ala	Met	Ala	Gly	Val	Ile	Gly	Ile	Ile	Lys	Ser	Trp	Ser	Ile	Ile
				325					330						335
Arg	Ser	Ala	Val	Gly	Leu	Ala	Ala	Lys	Glu	Met	Gly	Gly	Lys	Ser	Asp
			340					345					350		
Ala	Glu	Lys	Asn	Ile	Ile	Arg	Thr	Gln	Arg	Asp	Leu	Ser	Met	Lys	Ile
		355					360					365			
Ile	Ala	Ile	Gly	Ser	Ile	Ile	Thr	Leu	Ile	Leu	Val	Val	Leu	Phe	Phe
	370					375					380				
Tyr	Phe	Asp	Val	Met	Gln	Gly	Asn	Leu	Val	His	Thr	Leu	Val	Ala	Ile
385					390					395					400
Leu	Leu	Val	Ala	Gly	Ile	Ser	Phe	Leu	Phe	Thr	Thr	Val	Ala	Ala	Asn
				405					410				415		
Ala	Ile	Ala	Ile	Val	Gly	Thr	Asn	Pro	Val	Ser	Gly	Met	Thr	Leu	Met
			420					425					430		
Thr	Leu	Ile	Leu	Ala	Ser	Val	Val	Met	Val	Ala	Val	Gly	Leu	Lys	Gly
	435						440					445			
Pro	Ser	Gly	Met	Val	Ala	Ser	Leu	Val	Met	Gly	Gly	Val	Val	Cys	Thr
	450					455					460				
Ala	Leu	Ser	Met	Ala	Gly	Gly	Phe	Ile	Thr	Asp	Leu	Lys	Ile	Gly	Tyr
465					470					475					480
Trp	Leu	Gly	Ser	Thr	Pro	Ala	Lys	Gln	Glu	Ala	Trp	Lys	Phe	Leu	Gly
			485						490						495
Thr	Ile	Val	Ser	Ala	Ala	Thr	Val	Gly	Gly	Val	Met	Ile	Ile	Leu	Asn
		500						505					510		
Lys	Thr	Tyr	Gly	Phe	Thr	Ser	Gly	Gln	Leu	Ala	Ala	Pro	Gln	Ala	Asn
		515					520					525			
Ala	Met	Ala	Ala	Val	Ile	Glu	Pro	Leu	Met	Ser	Gly	Val	Gly	Ala	Pro
	530					535					540				
Trp	Met	Leu	Tyr	Gly	Ile	Gly	Ala	Val	Leu	Ala	Ile	Val	Leu	Thr	Leu
545					550					555					560
Leu	Lys	Val	Pro	Ala	Leu	Ala	Phe	Ala	Leu	Gly	Met	Phe	Ile	Pro	Leu
			565						570						575
Glu	Leu	Asn	Ile	Pro	Leu	Val	Val	Gly	Gly	Ala	Ile	Asn	Trp	Tyr	Val
		580						585					590		
Thr	Thr	Arg	Ser	Lys	Asp	Ala	Ser	Leu	Asn	Thr	Glu	Arg	Gly	Glu	Lys
		595					600					605			
Gly	Thr	Leu	Leu	Ala	Ser	Gly	Phe	Ile	Ala	Gly	Gly	Ala	Leu	Met	Gly

610		615		620
Val Val Ser Ala Ala Met Arg Phe Gly Gly Ile Asn Leu Val Asn Asp				
625		630		635
Ala Trp Leu Asn Asn Thr Leu Ser Gln Leu Ala Ala Leu Ile Ala Tyr				
	645		650	655
Thr Leu Leu Ile Leu Tyr Phe Ile Lys Ala Ser Met Lys Val Lys				
	660		665	670

<210> 8639

<211> 953

<212> PRT

<213> B.fragilis

<400> 8639

Ile Ile Asn Asn Met Lys Thr Asp Leu Leu Ala Cys Arg His Ile Gly				
1	5	10	15	
Val Asn Lys Ala Asp Ala Glu Val Met Leu Arg Lys Ile Gly Val Ala				
	20	25	30	
Ser Leu Asp Glu Leu Ile Asp Lys Thr Ile Pro Ala Asn Ile Arg Leu				
	35	40	45	
Lys Ala Pro Leu Ala Leu Pro Ala Pro Met Thr Glu Tyr Glu Phe Ala				
	50	55	60	
Arg His Ile Ala Glu Leu Ala Gly Lys Asn Lys Leu Phe Thr Thr Tyr				
65	70	75	80	
Ile Gly Met Gly Trp Tyr Asn Thr Ile Thr Pro Ala Val Ile Gln Arg				
	85	90	95	
Asn Val Phe Glu Asn Pro Val Trp Tyr Thr Ser Tyr Thr Pro Tyr Gln				
	100	105	110	
Thr Glu Val Ser Gln Gly Arg Leu Glu Ala Leu Met Asn Phe Gln Thr				
	115	120	125	
Ala Val Cys Asp Leu Thr Ala Met Pro Leu Ala Asn Cys Ser Leu Leu				
	130	135	140	
Asp Glu Ala Thr Ala Ala Ala Glu Ala Val Thr Met Met Tyr Gly Leu				
145	150	155	160	
Arg Ser Arg Asn Gln Gln Lys Ala Gly Ala Asn Val Val Phe Ile Asp				
	165	170	175	
Glu Asn Ile Phe Pro Gln Thr Leu Ala Val Ile Thr Thr Arg Ala Ile				
	180	185	190	
Pro Gln Gly Ile Glu Ile Arg Thr Gly Lys Phe Arg Asp Leu Glu Phe				
	195	200	205	
Thr Asp Asp Phe Phe Ala Cys Val Leu Gln Tyr Pro Asn Ala Asn Gly				
	210	215	220	
Asn Ala Glu Asp Tyr Arg Glu Phe Thr Glu Lys Ala His Thr Ala Asn				
225	230	235	240	
Cys Lys Val Ala Val Ala Ala Asp Ile Leu Ser Leu Ala Leu Leu Thr				
	245	250	255	
Pro Pro Gly Glu Trp Gly Ala Asp Ile Val Phe Gly Thr Thr Gln Arg				
	260	265	270	
Leu Gly Thr Pro Met Phe Tyr Gly Gly Pro Ser Ala Gly Tyr Phe Ala				
	275	280	285	
Thr Arg Asp Glu Tyr Lys Arg Asn Met Pro Gly Arg Ile Ile Gly Trp				
	290	295	300	
Ser Lys Asp Lys Tyr Gly Lys Leu Cys Tyr Arg Met Ala Leu Gln Thr				
305	310	315	320	
Arg Glu Gln His Ile Lys Arg Glu Lys Ala Thr Ser Asn Ile Cys Thr				
	325	330	335	
Ala Gln Ala Leu Leu Ala Thr Met Ala Gly Phe Tyr Thr Val Tyr His				
	340	345	350	
Gly Gln Glu Gly Ile Arg Asn Ile Ala Ser Arg Ile His Ser Ile Thr				

355	360	365
Val Phe Leu Glu Lys Ser Ile Gly Lys Leu Gly Phe Lys Gln Val Asn		
370	375	380
Lys Gln Tyr Phe Asp Thr Leu Arg Phe Ile Leu Pro Asp Ser Val Ser		
385	390	395
Ala Gln Gln Ile Arg Thr Ile Ala Leu Ser Lys Glu Val Asn Leu Arg		
405	410	415
Tyr Phe Asp Asn Gly Asp Val Gly Leu Ser Ile Asp Glu Thr Thr Asp		
420	425	430
Val Ala Ala Ala Asn Ile Leu Leu Ser Ile Phe Ala Ile Ala Ala Gly		
435	440	445
Lys Asp Phe Gln Lys Val Asp Asp Ile Pro Glu Ala Thr Ile Ile Ser		
450	455	460
Glu Glu Leu Lys Arg Gln Thr Pro Tyr Leu Thr His Glu Val Phe Ser		
465	470	475
Lys Tyr His Thr Glu Thr Glu Met Met Arg Tyr Ile Lys Arg Leu Asp		
485	490	495
Arg Lys Asp Ile Ser Leu Ala Gln Ser Met Ile Ser Leu Gly Ser Cys		
500	505	510
Thr Met Lys Leu Asn Ala Ala Ala Glu Met Leu Pro Leu Ser Cys Ala		
515	520	525
Glu Phe Met Cys Met His Pro Leu Val Pro Glu Asp Gln Ala Ala Gly		
530	535	540
Tyr Arg Glu Leu Ile His Asn Leu Ser Glu Glu Leu Lys Val Ile Thr		
545	550	555
Gly Phe Ala Gly Val Ser Leu Gln Pro Asn Ser Gly Ala Ala Gly Glu		
565	570	575
Tyr Ala Gly Leu Arg Thr Ile Arg Ala Tyr Leu Glu Ser Ile Gly Gln		
580	585	590
Gly His Arg Asn Lys Val Leu Ile Pro Ala Ser Ala His Gly Thr Asn		
595	600	605
Pro Ala Ser Ala Ile Gln Ala Gly Phe Thr Thr Val Thr Cys Ala Cys		
610	615	620
Asp Glu His Gly Asn Val Asp Met Asp Asp Leu Arg Ala Lys Ala Glu		
625	630	635
Glu Asn Lys Asp Asp Leu Ala Ala Leu Met Ile Thr Tyr Pro Ser Thr		
645	650	655
His Gly Ile Phe Glu Thr Glu Ile Val Glu Ile Cys Gln Ile Ile His		
660	665	670
Ala Cys Gly Ala Gln Val Tyr Met Asp Gly Ala Asn Met Asn Ala Gln		
675	680	685
Val Gly Leu Thr Asn Pro Gly Phe Ile Gly Ala Asp Val Cys His Leu		
690	695	700
Asn Leu His Lys Thr Phe Ala Ser Pro His Gly Gly Gly Gly Pro Gly		
705	710	715
Val Gly Pro Ile Cys Val Ala Glu His Leu Val Pro Phe Leu Pro Gly		
725	730	735
His Gly Leu Phe Gly Asn Ser Gln Asn Glu Val Ser Ala Ala Pro Phe		
740	745	750
Gly Ser Ala Gly Ile Leu Pro Ile Thr Tyr Gly Tyr Ile Arg Met Met		
755	760	765
Gly Ala Glu Gly Leu Thr Met Ala Thr Lys Thr Ala Ile Leu Asn Ala		
770	775	780
Asn Tyr Leu Ala Ala Cys Leu Lys Asp Thr Tyr Gly Ile Val Tyr Arg		
785	790	795
Gly Ala Asn Gly Phe Val Gly His Glu Met Ile Leu Glu Cys Arg Lys		
805	810	815
Val Tyr Glu Glu Thr Gly Ile Ser Glu Asn Asp Ile Ala Lys Arg Leu		
820	825	830

Met Asp Tyr Gly Tyr His Ala Pro Thr Leu Ser Phe Pro Val His Gly
 835 840 845
 Thr Leu Met Ile Glu Pro Thr Glu Ser Glu Ser Leu Ser Glu Leu Asp
 850 855 860
 Asn Phe Val Leu Thr Met Leu Thr Ile Trp Asn Glu Ile Gln Glu Val
 865 870 875 880
 Lys Asn Gly Glu Ala Asp Lys Glu Asp Asn Val Leu Ile Asn Ala Pro
 885 890 895
 His Pro Glu Tyr Glu Val Val Ser Asp Gln Trp Glu His Cys Tyr Thr
 900 905 910
 Arg Glu Lys Ala Ala Tyr Pro Ile Glu Ser Val Arg Glu Asn Lys Phe
 915 920 925
 Trp Val Asn Val Ala Arg Val Asp Asn Thr Leu Gly Asp Arg Lys Leu
 930 935 940
 Leu Pro Thr Cys Tyr Gly Cys Phe Asp
 945 950

<210> 8640

<211> 737

<212> PRT

<213> B.fragilis

<400> 8640

Ile Met Ser Asn Ile Thr Lys Lys Ala Phe Pro Val Leu Asn Met His
 1 5 10 15
 Cys Ala Gly Cys Ala Asn Asn Val Glu Lys Thr Val Lys Lys Leu Ala
 20 25 30
 Gly Val Val Asp Ala Ser Val Asn Phe Ala Thr Asn Thr Leu Ser Val
 35 40 45
 Ser Tyr Glu Ala Asp Lys Leu Thr Pro Gly Glu Ile Arg Ala Ala Val
 50 55 60
 Leu Ala Ala Gly Tyr Asp Leu Ile Val Glu Glu Ala Leu Lys Glu Glu
 65 70 75 80
 Arg Gln Glu Glu Ala Gln Glu Lys His Tyr Arg Leu Leu Lys Arg Gln
 85 90 95
 Val Ile Gly Ala Trp Ile Phe Val Val Pro Met Leu Leu Phe Ser Met
 100 105 110
 Val Leu Met His Val Pro Phe Ser Asn Glu Ile Gln Leu Ile Leu Ala
 115 120 125
 Leu Pro Val Met Ile Phe Phe Gly Gly Ser Phe Tyr Val Asn Ala Trp
 130 135 140
 Arg Gln Ala Arg Leu Gly Arg Ser Asn Met Asp Thr Leu Val Ala Leu
 145 150 155 160
 Ser Thr Ser Ile Ala Phe Leu Phe Ser Val Phe Asn Thr Phe Phe Pro
 165 170 175
 Glu Phe Trp Tyr Ser Arg Gly Leu Glu Pro His Val Tyr Tyr Glu Ala
 180 185 190
 Ala Val Val Ile Ile Ala Phe Val Leu Thr Gly Lys Leu Met Glu Glu
 195 200 205
 Arg Ala Lys Gly Asn Thr Ser Thr Ala Ile Arg Lys Leu Met Gly Leu
 210 215 220
 Gln Pro Arg Val Ala Arg Val Leu Arg Glu Gly Ile Glu Glu Asp Ile
 225 230 235 240
 Leu Ile Asp Gln Leu Gln Thr Gly Asp Leu Val Val Val Arg Pro Gly
 245 250 255
 Glu Gln Ile Pro Val Asp Gly Arg Leu Ser Glu Gly Glu Ser Tyr Val
 260 265 270
 Asp Glu Ser Met Ile Ser Gly Glu Pro Ile Pro Val Glu Lys Lys Val
 275 280 285

Gly Asp Arg Val Leu Ala Gly Thr Ile Asn Gln Lys Gly Ala Phe Val
 290 295 300
 Ile Lys Ala Ser Gly Val Gly Ser Glu Thr Val Leu Ala Arg Ile Ile
 305 310 315 320
 Arg Met Val Gln Glu Ala Gln Gly Ser Lys Ala Pro Val Gln Arg Ile
 325 330 335
 Val Asp Arg Val Thr Gly Ile Phe Val Pro Val Val Leu Cys Ile Ala
 340 345 350
 Val Leu Thr Phe Val Ile Trp Leu Leu Val Gly Gly Thr Asp Tyr Phe
 355 360 365
 Ser His Ala Leu Leu Ser Ala Val Ser Val Leu Val Ile Ala Cys Pro
 370 375 380
 Cys Ala Leu Gly Leu Ala Thr Pro Thr Ala Leu Met Val Gly Ile Gly
 385 390 395 400
 Lys Ala Ala Ser Asn His Ile Leu Ile Lys Asp Ala Val Ala Leu Glu
 405 410 415
 Gln Met Arg Lys Val Asp Val Val Val Leu Asp Lys Thr Gly Thr Leu
 420 425 430
 Thr Glu Gly His Pro Thr Val Ser Gly Trp Leu Trp Ala Gln Val Gln
 435 440 445
 Glu Glu His Phe Lys Asn Val Leu Leu Ala Ala Glu Leu Lys Ser Glu
 450 455 460
 His Pro Leu Ala Gly Ala Ile Val Ser Ser Leu Gln Glu Val Glu Lys
 465 470 475 480
 Ile Val Pro Ala Gln Leu Glu Ser Phe Glu Ser Ile Thr Gly Lys Gly
 485 490 495
 Ile Lys Val Val Tyr Gln Gly Asp Thr Tyr Trp Val Gly Ser His Lys
 500 505 510
 Leu Leu Lys Asp Phe Ser Ala Ser Leu Ser Asp Val Leu Ala Glu Met
 515 520 525
 Met Val Gln Tyr Glu Ser Asp Gly Asn Ser Ile Val Tyr Phe Gly Arg
 530 535 540
 Gly Thr Glu Val Leu Ala Val Val Ala Ile Ala Asp Gln Ile Lys Pro
 545 550 555 560
 Thr Ser Ala Glu Ala Val Lys Glu Leu Lys Arg Gln Gly Ile Asp Ile
 565 570 575
 Cys Met Leu Thr Gly Asp Gly Gln Arg Thr Ala Leu Ala Val Ser Gly
 580 585 590
 Lys Leu Gly Ile Asp Arg Phe Val Ala Asp Ala Leu Pro Asp Asp Lys
 595 600 605
 Glu Glu Phe Val Arg Glu Leu Gln Met Gln Gly Lys Thr Val Ala Met
 610 615 620
 Val Gly Asp Gly Ile Asn Asp Ser Gln Ala Leu Ala Leu Ala Asp Val
 625 630 635 640
 Ser Ile Ala Met Gly Lys Gly Thr Asp Ile Ala Met Asp Val Ala Met
 645 650 655
 Val Thr Leu Met Thr Ser Asp Leu Leu Leu Leu Pro Arg Ala Phe Glu
 660 665 670
 Leu Ser Lys Gln Thr Val Lys Leu Ile His Gln Asn Leu Phe Trp Ala
 675 680 685
 Phe Ile Tyr Asn Leu Ile Gly Ile Pro Ile Ala Ala Gly Ile Leu Phe
 690 695 700
 Pro Val Asn Gly Leu Leu Asn Pro Met Leu Ala Ser Ala Ala Met
 705 710 715 720
 Ala Phe Ser Ser Val Ser Val Val Leu Asn Ser Leu Ser Leu Ala Arg
 725 730 735
 Lys

<210> 8641
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 8641

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Phe Val Arg Lys Arg Ala Val Phe Val Arg Tyr Arg Thr Gln Ile Thr
1          5          10          15
Gln Thr Phe Ser Leu Ser Leu Ser Cys Gln Ser Thr Tyr Tyr Thr Met
          20          25          30
Thr Leu Lys Arg Gly Lys Ile Leu Ile Ala Asp Asp Asn Glu Asp Ile
          35          40          45
Leu Phe Thr Leu Lys Met Leu Leu Arg Pro Ile Ala Glu Ser Ile Ser
          50          55          60
Ile Thr Thr Asp Pro Arg Glu Leu Leu Pro Ile Leu Ser Arg Thr His
65          70          75          80
Tyr Asp Val Ile Leu Leu Asp Met Asn Phe Arg Asn Asp Ala Val Ser
          85          90          95
Gly Arg Glu Gly Phe His Trp Leu Glu Glu Ile Leu Lys Leu Asp Ser
          100          105          110
Gly Ala Val Val Ile Phe Ile Thr Ala Tyr Ala Asp Thr Glu Lys Ala
          115          120          125
Val Arg Thr Ile Lys Leu Gly Ala Thr Asp Phe Ile Ala Lys Pro Trp
          130          135          140
Gln Asn Asp Lys Met Ile Ala Thr Arg Ile Cys Gly Ile Ala Thr Gln
145          150          155          160
Leu Gln Pro Tyr Gly Ser Arg Ile Thr Glu Gly Ala Glu Arg Ser Ser
          165          170          175
Asp Arg Pro Leu Ala Gly Thr Gly Pro Asn His Arg Arg Ile Gly Arg
          180          185          190
His Ala Gly Tyr Phe Pro Asp His Pro Glu Ile Cys Arg Tyr Gly Arg
          195          200          205
Gln Ser Val Ala Phe Arg
          210

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<210> 8642
 <211> 132
 <212> PRT
 <213> B.fragilis

<400> 8642

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Lys Met Lys Lys Ile Leu Phe Phe Ile Thr Met Met Val Leu Ser Ile
1          5          10          15
Gly Leu Ala Gln Ala Gln Gly Lys Ala Glu Ile Lys Phe Asp Lys Thr
          20          25          30
Thr His Asp Phe Gly Thr Phe Ser Glu Asn Asn Pro Val Val Ser Cys
          35          40          45
Thr Phe Lys Phe Thr Asn Ile Gly Asp Ala Pro Leu Val Ile His Gln
          50          55          60
Ala Val Ala Ser Cys Gly Cys Thr Val Pro Glu Tyr Thr Gln Glu Pro
65          70          75          80
Ile Met Pro Gly Lys Thr Gly Thr Ile Lys Val Thr Tyr Asn Gly Thr
          85          90          95
Asp Lys Tyr Pro Gly His Phe Lys Lys Ser Ile Thr Leu Arg Thr Asn
          100          105          110
Ala Lys Thr Glu Met Ile Arg Leu Phe Val Glu Gly Asp Met Thr Ala
          115          120          125
Lys Asp Ala Lys
          130

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<210> 8643
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 8643

```

Arg Val Ala Glu Gln His Ser Val Ser Thr Cys Gly Pro Asp Ser Leu
1          5          10          15
Tyr Pro Val Asp Ser Leu Phe His Gln Ser Ile His Glu Ser Lys Met
20          25          30
Lys Thr Leu Ile Thr Ser Ile Leu Leu Phe Met Ala Thr Gly Leu Ser
35          40          45
Ala Gln Lys Pro Val Glu Leu Pro Leu Trp Pro Asn Gly Ala Pro Asn
50          55          60
Asp Asn Gly Leu Lys Gly Glu Glu Val Met Ser Ala Pro Tyr Arg Leu
65          70          75          80
Thr Asn Val Thr Gln Pro Thr Ile Thr Val Tyr Arg Pro Ala Thr Pro
85          90          95
Asn Gly Met Thr Ile Ile Met Cys Pro Gly Gly Ala Tyr Ala Leu Leu
100         105         110
Ala Met Asp His Glu Gly His Asp Met Ala Pro Trp Phe Asn Ser Leu
115         120         125
Gly Ile Thr Tyr Val Val Leu Lys Tyr Arg Met Pro Asn Gly His Cys
130         135         140
Glu Val Pro Leu Ser Asp Ala Glu Gln Ala Ile Arg Ile Val Arg Lys
145         150         155         160
His Ala Lys Asp Trp Asn Ile Arg Thr Asp Arg Val Gly Ile Met Gly
165         170         175
Ala Ser Ala Gly Gly His Leu Ala Ser Thr Leu Ala Thr His Tyr Ser
180         185         190
Ser Glu Asp Thr Arg Pro Asp Phe Gln Ile Leu Leu Tyr Pro Val Ile
195         200         205
Thr Met Glu Ser Gly Asp Thr His Gly Gly Ser Arg His Asn Leu Leu
210         215         220
Gly Pro Asp Ala Thr Pro Glu Leu Thr Arg Lys Phe Ser Asn Glu Gln
225         230         235         240
Gln Val Thr Asp His Thr Pro Gln Ala Phe Ile Thr Leu Ser Ser Asp
245         250         255
Asp Glu Gly Val Pro Pro Ala Asn Gly Val Asn Tyr Tyr Leu Ala Leu
260         265         270
Gln Lys His Lys Val Pro Ala Thr Leu His Ile Tyr Pro Thr Gly Gly
275         280         285
His Gly Trp Gly Phe Tyr Asp Ser Phe Ala Tyr Lys Arg Gln Trp Thr
290         295         300
Glu Glu Leu Glu Lys Trp Leu Arg Asp Gly Val Arg Phe Gln
305         310         315

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<210> 8644
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 8644

```

Leu Asp His Asp Met Gly Ala Gly Ser Trp Ser Glu Arg Leu Tyr Arg
1          5          10          15
Ser Gln Val Gln Ser Gly Glu Arg Leu Arg Ile Lys Ser Asp Arg Ser
20          25          30
Gln Asn Leu Ser Ile Leu Ile Leu Thr Phe Met Lys Thr Lys Lys Met

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35 40 45
 Ile Ala Thr Leu Val Val Ala Leu Leu Ser Val Thr Ala Val Met Ala
 50 55 60
 Lys Asp Phe Arg Thr Val Val Phe Lys Val Ala Gln Met Glu Cys Ala
 65 70 75 80
 Asn Cys Glu Arg Lys Val Lys Asn Asn Ile Lys Phe Glu Lys Gly Leu
 85 90 95
 Lys Asn Phe Thr Thr Asp Leu Lys Glu Arg Thr Val Thr Ile Thr Tyr
 100 105 110
 Asp Ala Glu Lys Thr Asn Val Glu Lys Leu Lys Glu Gly Phe Arg Lys
 115 120 125
 Phe Lys Tyr Glu Ala Val Val Ile Lys Glu Ala Lys Glu Thr Asp Lys
 130 135 140
 Lys
 145

<210> 8645

<211> 106

<212> PRT

<213> B.fragilis

<400> 8645

Ala Phe Thr Glu Tyr Ala Tyr Val Phe Ser Asn Tyr Leu Tyr Met Phe
 1 5 10 15
 Ser Tyr Phe Thr Ser Ile Val Arg Val Ser Glu Val Lys Arg Lys Arg
 20 25 30
 Leu Phe Ser Gly Cys Thr Pro Glu Ala Asp Lys Ser Glu Leu Thr Glu
 35 40 45
 Arg Glu Pro His Ala Leu Ile Thr His Leu Phe Ile Pro Ile Ala Ser
 50 55 60
 Arg His Arg His Tyr Asp Ser Leu Gln Arg His Leu Ile Ser Lys Thr
 65 70 75 80
 Lys Ser Pro Thr Arg Lys Glu Gly Asp Phe Ile Arg Ser Val His His
 85 90 95
 Trp Ala Glu Ile Glu Gln Ser Arg Glu Val
 100 105

<210> 8646

<211> 282

<212> PRT

<213> B.fragilis

<400> 8646

Arg Asn Gly Cys Gly Thr Glu Ser Gly Ser Asn Arg Tyr Asn Glu Gly
 1 5 10 15
 Ile Thr Lys Thr Ile Phe Ile Lys Met Lys Thr Ile Arg Thr Leu Leu
 20 25 30
 Leu Cys Thr Ser Leu Leu Ala Gly Thr Val Ala Ala Gln Glu Ser Ser
 35 40 45
 Leu Val Leu Ser Asn Gly Leu Gly Phe Val Asp Thr Pro Tyr Lys Ala
 50 55 60
 Gly Thr Leu Glu Val Asp Asp Thr Glu Asp Leu Ile Ile Asn Cys Asp
 65 70 75 80
 Glu Val Asp Cys Thr Phe Val Glu Tyr Ala Leu Ala Met Ala Leu
 85 90 95
 Cys Pro Gln Gln Gly Asp Glu Met Gln Glu Gly Asp Phe Ala Arg Asn
 100 105 110
 Leu Gln Arg Ile Arg Tyr Arg Asp Gly Lys Ile Asp Gly Tyr Thr Ser
 115 120 125

Arg Leu His Tyr Ile Ser Asp Trp Ile Asn Asn Ala Val Arg Gln Gly
 130 135 140
 Leu Leu Glu Asp Val Thr Ala Thr Tyr Ser Pro Phe Lys Gln Lys Leu
 145 150 155 160
 Ser Leu Ser Tyr Met Ser Thr His Pro Glu Leu Tyr Lys Ser Leu Lys
 165 170 175
 Asn Ser Pro Glu Asn Val Ala Gln Met Ala Lys Tyr Glu Lys Ala Leu
 180 185 190
 Ser Gly Lys Glu Val His Tyr Leu Pro Lys Asp Lys Leu Glu Pro Asp
 195 200 205
 Gly Leu Pro Trp Ile Lys Asn Gly Asp Ile Ile Ala Leu Thr Thr Asn
 210 215 220
 Thr Pro Gly Leu Asp Val Ser His Met Gly Ile Ala Ile Tyr Ile Lys
 225 230 235 240
 Gly Gln Leu His Leu Leu His Ala Ser Ser Lys Glu Gly Lys Val Val
 245 250 255
 Val Gly Lys Thr Ala Leu Ser Gln Met Leu Lys Asp Arg Lys Ser Leu
 260 265 270
 Thr Gly Ile Arg Val Leu Arg Met Lys Lys
 275 280

<210> 8647

<211> 467

<212> PRT

<213> B.fragilis

<400> 8647

Pro Gln Lys Cys Trp Glu Ser Pro Gly His Arg Tyr Thr Gly Gly Ser
 1 5 10 15
 Arg Asn Thr Asp Tyr Asn Leu Lys Gln Leu His Asp Met Lys Gln Lys
 20 25 30
 Trp Ala Arg Lys Pro Leu Ile Leu Thr Ala Ala Leu Leu Ile Cys Cys
 35 40 45
 Tyr Thr Thr Val Trp Leu Gly Met His Gly Phe Tyr Ile Ser Leu Pro
 50 55 60
 Val Ser Val Cys Leu Leu Leu Tyr Thr Ala Tyr Arg Ile Tyr Arg Tyr
 65 70 75 80
 Ile Leu Arg Ser Thr Arg Ala Met Ala Gln Phe Ile Trp Ser Val Arg
 85 90 95
 Tyr Ser Glu Phe Leu Ser Ser Pro Val Gln Ser Glu Glu Ser Leu Arg
 100 105 110
 Ser Leu Pro Ala Glu Leu Leu Asn Glu Met Asn Gln Ala Leu Asp Phe
 115 120 125
 Tyr Lys Gln Asn Leu Gln Lys Lys Glu Ser Lys Leu Gln Tyr Phe Gln
 130 135 140
 Ala Leu Ala Asn His Ile Asp Met Ser Val Leu Val Tyr Thr Pro Ser
 145 150 155 160
 Gly Arg Ile Glu Trp Met Asn Glu Ala Ala Lys Arg Leu Leu Asp Asn
 165 170 175
 His Asn Leu Lys Ser Ile Asp Glu Leu Lys Tyr Phe His Ser Glu Leu
 180 185 190
 Pro Ala Arg Leu Tyr Ser Leu Lys Ala Gly Asp Ile Ala Val Leu Gln
 195 200 205
 Ala Lys Lys Glu Glu Glu Thr Ile Gln Leu Ala Leu Ser Gly Met Glu
 210 215 220
 Phe Val Ile Gln Gly Arg Pro Leu Thr Val Ala Ser Met Lys Asn Ile
 225 230 235 240
 His Ser Val Leu Asp Ser Gln Glu Thr Glu Ala Trp Gln Lys Leu Ile
 245 250 255

```

Arg Val Leu Thr His Glu Ile Met Asn Ser Ile Thr Pro Val Thr Ser
      260      265      270
Leu Ser Glu Leu Leu Glu His Gln Ile Glu Asp Phe Asp Gly Asn Glu
      275      280      285
Glu Glu Arg Ala Glu Ile Arg Arg Met Leu Gln Thr Ile Arg Arg Arg
      290      295      300
Gly Asp Gly Leu Ile Arg Phe Val Asn Ser Tyr Arg Glu Val Ser His
      305      310      315      320
Leu Pro Gln Pro Leu Leu Lys Ile Tyr Thr Ser Gln Glu Leu Leu Thr
      325      330      335
Gly Val Val Arg Leu Met Tyr Arg Glu Pro Asn Asp Leu His Leu Ile
      340      345      350
Leu Pro Pro Lys Gly Gln Arg Leu Met Ala Asp Lys Asp Leu Ile Glu
      355      360      365
Gln Val Leu Ile Asn Leu Ile Lys Asn Ala Arg Glu Asn Asp Ala Thr
      370      375      380
Asp Ile Arg Ile Ser Ala Gly Leu Ser Ser Gly Glu Arg Pro Tyr Ile
      385      390      395      400
Arg Ile Glu Asp Asn Gly Thr Gly Ile Glu Gln Glu Val Leu Asp Arg
      405      410      415
Ile Phe Ile Pro Phe Phe Thr Thr Lys Pro Thr Gly Ser Gly Ile Gly
      420      425      430
Leu Thr Ile Ser Arg Gln Ile Ile His Leu His Arg Gly Thr Ile Thr
      435      440      445
Val Ser Ser Glu Pro Gly Lys Gly Ser Ile Phe Thr Leu Leu Phe Pro
      450      455      460
Gly Val Phe
      465

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<210> 8648

<211> 282

<212> PRT

<213> B.fragilis

<400> 8648

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Gln Arg Cys Arg Leu Ser Ala Cys Met Ile Val Cys Arg Tyr Leu Ile
1      5      10      15
Tyr Pro Arg Leu His His Ser Met Pro Lys Ser Arg Thr Glu Asp Leu
      20      25      30
Leu Val Glu Ser Gln Thr Ser Tyr Phe Leu Phe Leu Asn His Ala
      35      40      45
Asn Ile His Ile Phe Phe Tyr Phe Phe Ile Phe Val Leu Met Lys Thr
      50      55      60
Ile Thr Thr Asp Trp Glu Leu Ile Pro Tyr Ser Glu Ala Trp Ser Arg
      65      70      75      80
Gln Thr Glu Trp Phe Asp Ala Leu Val His Ala Lys Gln Asn Gly Glu
      85      90      95
Ser Tyr Glu Asn Arg Ile Ile Phe Cys Glu His Pro His Val Tyr Thr
      100      105      110
Leu Gly Arg Ser Gly Lys Glu Asn Asn Met Leu Leu Gly Glu Glu Gln
      115      120      125
Leu Lys Thr Ile Gly Ala Thr Leu Tyr His Ile Asp Arg Gly Gly Asp
      130      135      140
Ile Thr Tyr His Gly Pro Gly Gln Leu Val Cys Tyr Pro Ile Leu Asn
      145      150      155      160
Leu Glu Glu Phe Gly Leu Gly Leu Lys Glu Tyr Val His Leu Leu Glu
      165      170      175
Glu Ala Val Ile Arg Val Cys Ala Ser Tyr Gly Val Val Ala Gly Arg
      180      185      190

```

Leu Glu Lys Ala Thr Gly Val Trp Leu Glu Gly Asp Thr Ser Arg Ala
 195 200 205
 Arg Lys Ile Cys Ala Ile Gly Val Arg Ser Ser His Tyr Val Thr Met
 210 215 220
 His Gly Leu Ala Leu Asn Val Asn Thr Asp Leu Arg Tyr Phe Ser Tyr
 225 230 235 240
 Ile His Pro Cys Gly Phe Ile Asp Lys Gly Val Thr Ser Leu Gln Gln
 245 250 255
 Glu Leu Gly Arg Ser Ile Asp Met Ala Glu Val Lys Glu Arg Leu Gly
 260 265 270
 Arg Glu Leu Leu Ala Asp Leu Leu Ser Lys
 275 280

<210> 8649

<211> 221

<212> PRT

<213> B.fragilis

<400> 8649

Arg Phe Lys Arg Ser Asn Asn Ile Val Met Lys Ile Lys Arg Phe Glu
 1 5 10 15
 Phe Asn Met Phe Pro Val Asn Cys Tyr Val Leu Trp Asp Glu Thr Asn
 20 25 30
 Glu Ala Val Val Ile Asp Pro Gly Cys Phe Tyr Asp Glu Glu Lys Gln
 35 40 45
 Ala Leu Lys Asn Phe Ile Val Thr Asn Asn Leu Asn Ile Lys His Leu
 50 55 60
 Leu Asn Thr His Leu His Leu Asp His Ile Phe Gly Asn Pro Phe Met
 65 70 75 80
 Leu Arg Glu Phe Gly Leu Ser Ala Glu Ala Asn Gln Ala Asp Glu Tyr
 85 90 95
 Trp Ile Asp Glu Ala Pro Lys Gln Ser Arg Met Phe Gly Phe Gln Leu
 100 105 110
 Asn Glu Ala Pro Val Pro Leu Gly Lys Tyr Leu His Asp Gly Asp Ile
 115 120 125
 Ile Thr Phe Gly Asn Thr Thr Leu Glu Ala Ile His Val Pro Gly His
 130 135 140
 Ser Pro Gly Ser Leu Val Tyr Tyr Cys Arg Ala Asp Asn Cys Met Phe
 145 150 155 160
 Ser Gly Asp Val Leu Phe Gln Gly Ser Ile Gly Arg Ala Asp Leu Ala
 165 170 175
 Gly Gly Asn Phe Asp Glu Leu Lys Glu His Ile Cys Ser Arg Leu Phe
 180 185 190
 Val Leu Pro Asn Glu Thr Ile Val Tyr Pro Gly His Gly Ala Pro Thr
 195 200 205
 Thr Ile Gly Ile Glu Lys Ala Glu Asn Pro Phe Phe Arg
 210 215 220

<210> 8650

<211> 129

<212> PRT

<213> B.fragilis

<400> 8650

Val Leu Phe Arg Ile Ile Ile Thr Pro Pro Thr Val Ala Ala Glu Thr
 1 5 10 15
 Met Val Pro Arg Asn Phe His Ala Ser Cys Leu Ala Gly Val Leu Pro
 20 25 30
 Ser Gln Tyr Pro Ile Phe Lys Ser Val Ile Lys Pro Pro Ala Met Glu

35 40 45
 Ser Ala Val Gln Thr Thr Pro Pro Ile Thr Asn Glu Ala Thr Met Pro
 50 55 60
 Glu Gly Pro Phe Asn Pro Thr Ala Thr Ile Thr Thr Asp Ala Arg Ile
 65 70 75 80
 Asn Val Ile Arg Val Met Pro Asp Thr Gly Leu Val Pro Thr Ile Ala
 85 90 95
 Ile Ala Leu Ala Ala Thr Val Val Asn Arg Asn Glu Ile Pro Ala Thr
 100 105 110
 Ser Arg Ile Ala Thr Ser Val Cys Thr Arg Leu Pro Cys Ile Thr Ser
 115 120 125
 Lys

<210> 8651
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 8651
 Lys Asn Lys Arg Lys Cys Val Tyr Leu Arg Asp Ser Lys Lys Glu Ser
 1 5 10 15
 Asn Met Lys Phe Asp Phe Pro Gln Val Asp Leu Pro Cys Glu Ile Leu
 20 25 30
 Ala Trp Asn Asp Val Thr Glu Asp Ile Leu Asn Ile Tyr Lys Gln Ser
 35 40 45
 Cys Arg Leu Lys Ala Gly Ile Phe Ala Ile Cys Thr Glu Gly Lys Met
 50 55 60
 Thr Ala Thr Ile Asn Leu Ile Asp Tyr Glu Ile Lys Pro Asn Asp Leu
 65 70 75 80
 Ile Thr Leu Leu Pro Gly Thr Ile Ile Gln Phe Arg Glu Arg Thr Glu
 85 90 95
 Lys Val Arg Leu Cys Phe Ala Gly Phe Ser Ser Glu Cys Val Glu Arg
 100 105 110
 Ile Asn Leu Ile Lys Ser Met Val Ser Ser Phe Ser Lys Ile Thr Glu
 115 120 125
 Cys Pro Ile Val Glu Leu Gln Glu Asp Ile Ala Ser Tyr Leu Ile Asp
 130 135 140
 Tyr Phe Ser Leu Leu Ala Arg Val Thr Cys Asp Glu Lys Leu Ser Leu
 145 150 155 160
 Pro Ser Glu Met Thr Glu Val Ser Leu Arg Ser Ile Leu Thr Ala Val
 165 170 175
 Gly Leu Ile Tyr Gln Arg Tyr Ser Ser Lys Asn His Asn Thr Asn Arg
 180 185 190
 Lys Glu Glu Ile Cys Arg Glu Leu Val Gly Leu Val Thr Glu His Tyr
 195 200 205
 Thr Glu Glu Arg Arg Ala Gln Phe Tyr Ala Asp Lys Leu Gly Ile Ser
 210 215 220
 Leu Gln His Leu Ser Thr Thr Val Lys Gln Val Thr Gly Arg Asn Val
 225 230 235 240
 Leu Asp Val Ile Ala Tyr Val Val Ile Ile Asp Ala Lys Ala Lys Leu
 245 250 255
 Lys Ser Ser Asn Met Thr Ile Gln Glu Ile Ala Tyr Ser Leu Asn Phe
 260 265 270
 Pro Ser Ala Ser Phe Phe Gly Lys Tyr Phe Arg Arg Tyr Val Gly Met
 275 280 285
 Ser Pro Leu Glu Phe Arg Asn Ser
 290 295

<210> 8652
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 8652

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Ser Asn Phe Ile Ile Lys Ile Gln Ile Tyr Tyr Asn Leu Met Asn Thr
1          5          10          15
Thr Glu Gln Thr Ser Ser Leu Pro Ser Ala Gly Gly Glu Asn Gly Val
          20          25          30
Lys Leu Leu Leu Lys Tyr Phe Pro Asp Leu Thr Glu Glu Gln Arg Lys
          35          40          45
Gln Phe Ala Ala Leu Tyr Glu Leu Tyr Ile Asp Trp Asn Ser Lys Ile
          50          55          60
Asn Val Ile Ser Arg Lys Asp Ile Glu Asn Leu Tyr Glu His His Val
65          70          75          80
Leu His Ser Leu Gly Ile Ala Arg Val Ile Arg Phe Arg Ala Gly Ser
          85          90          95
Ser Val Met Asp Leu Gly Thr Gly Gly Gly Phe Pro Gly Ile Pro Leu
          100          105          110
Ala Ile Leu Phe Pro Asp Thr Lys Phe His Leu Val Asp Ser Ile Gly
          115          120          125
Lys Lys Val Arg Val Ala Thr Glu Val Ala Asn Ala Ile Gly Leu Lys
          130          135          140
Asn Val Thr Phe Arg His Ala Arg Ala Glu Glu Glu Lys Gln Thr Phe
145          150          155          160
Asp Phe Val Val Ser Arg Ala Val Met Pro Leu Ala Asp Leu Ile Lys
          165          170          175
Ile Ile Arg Lys Asn Ile Ser Pro Lys Gln Gln Asn Ala Leu Pro Asn
          180          185          190
Gly Leu Ile Cys Leu Lys Gly Gly Glu Leu Glu His Glu Ala Met Pro
          195          200          205
Phe Lys His Lys Thr Ser Met His Asn Leu Asn Glu Asp Phe Asp Glu
          210          215          220
Glu Phe Phe Gln Thr Lys Lys Val Val Tyr Val Thr Ile
225          230          235

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<210> 8653
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 8653

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Tyr Thr Thr Leu Ile Pro Phe Pro Val Ile Leu Ser Lys Leu Ser Asn
1          5          10          15
Trp Ala Gly Thr Ile Phe Ser Thr Ser Cys Arg Glu Glu Thr Met Ala
          20          25          30
Pro Ala Ser Gly Cys Ser Asp Leu Ser Ser Ala Ala Ser Arg Thr Phe
          35          40          45
Leu Lys Cys Ser Ser Cys Thr Trp Ala Gln Ser His Pro Glu Thr Val
          50          55          60
Gly Cys Pro Ser Val Asn Val Pro Val Leu Ser Ser Thr Thr Thr Ser
65          70          75          80
Thr Leu Arg Ile Cys Ser Arg Ala Thr Ala Ser Phe Ile Arg Ile Trp
          85          90          95
Leu Leu Ala Ala Leu Pro Met Pro Thr Ile Arg Ala Val Gly Val Ala
          100          105          110
Ser Pro Lys Ala His Gly Gln Ala Met Thr Ser Thr Asp Thr Ala Glu
          115          120          125

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Ser Lys Ala Cys Glu Lys
130

<210> 8654

<211> 338

<212> PRT

<213> B.fragilis

<400> 8654

Leu	Gln	Pro	Val	Ser	Ala	Ala	Leu	Gln	Leu	Ser	Phe	Ser	Arg	Thr	Glu
1				5				10						15	
Val	Glu	Ser	Leu	Lys	Glu	Gln	Lys	Glu	Ala	Leu	Thr	Asp	His	Ser	Pro
			20				25						30		
Glu	Pro	Ala	Arg	Ile	Ile	Gly	Glu	Ser	Ala	Ala	Met	Gln	Ala	Ile	Phe
		35				40						45			
Gln	Thr	Ile	Arg	Lys	Phe	Ala	Asp	Thr	Asp	Ala	Asn	Leu	Leu	Leu	Leu
	50				55					60					
Gly	Glu	Asn	Gly	Thr	Gly	Lys	Asp	Leu	Ile	Ala	Arg	Tyr	Val	Tyr	Glu
65				70				75						80	
Gln	Ser	Pro	Arg	Lys	Gly	Lys	Ile	Tyr	Val	Pro	Ile	Asp	Leu	Gly	Ser
			85					90					95		
Ile	Pro	Glu	Thr	Leu	Phe	Glu	Ser	Glu	Leu	Phe	Gly	Phe	Glu	Lys	Gly
		100						105					110		
Ala	Phe	Thr	Asp	Ala	Arg	Lys	Lys	Pro	Gly	Arg	Leu	Glu	Val	Ala	
	115				120						125				
Ser	Gly	Gly	Thr	Leu	Phe	Leu	Asn	Glu	Ile	Gly	Asn	Leu	Ser	Leu	Pro
	130				135						140				
Leu	Gln	Ala	Lys	Leu	Leu	Ser	Val	Ile	Glu	Gln	Arg	Lys	Ser	Ser	Arg
145				150					155						160
Leu	Gly	Ser	Thr	Thr	Ser	Tyr	Pro	Val	Asp	Val	Arg	Leu	Ile	Cys	Ala
			165					170						175	
Thr	Asn	Thr	Asp	Leu	Tyr	Thr	Ala	Ile	Asp	Asn	Gly	Leu	Phe	Arg	Gln
		180						185					190		
Asp	Leu	Leu	Tyr	Arg	Ile	Asn	Thr	Ile	Glu	Ile	Arg	Ile	Pro	Pro	Leu
	195					200						205			
His	Glu	Arg	Gly	Asn	Asp	Leu	Phe	Leu	Leu	Ala	Asp	His	Phe	Leu	Gln
	210				215						220				
Arg	Tyr	Arg	Lys	Lys	Tyr	Lys	Lys	Glu	Val	Arg	Gly	Ile	Ser	Lys	Glu
225				230					235						240
Ala	Arg	Arg	Leu	Met	Gln	Leu	Tyr	Arg	Trp	Pro	Gly	Asn	Val	Arg	Glu
			245					250						255	
Leu	Glu	His	Thr	Ile	Glu	Arg	Ala	Val	Ile	Leu	Ser	Gly	Asn	Pro	Met
		260						265					270		
Leu	Met	Pro	Asn	Asp	Phe	Met	Leu	Arg	Thr	Ser	Pro	Gln	Gly	Gln	Val
	275					280						285			
Ser	Glu	Lys	Glu	Lys	Tyr	Asn	Leu	Glu	Arg	Gln	Glu	Arg	Glu	Thr	Ile
	290					295					300				
Ser	Glu	Val	Leu	Arg	Leu	Cys	Ala	Gly	Asn	Ile	Thr	Leu	Ala	Ser	Glu
305					310					315					320
Met	Leu	Gly	Ile	Thr	Arg	Thr	Ser	Leu	Tyr	Arg	Arg	Ile	Glu	Lys	His
			325					330						335	
Gly	Leu														

<210> 8655

<211> 158

<212> PRT

<213> B.fragilis

<400> 8655

Phe Ile Leu Val Asn Arg Gln His Lys Lys Arg Lys Lys Asn Val Ala
 1 5 10 15
 Gly Trp Leu Asn Leu Leu Ile Phe Ala Thr Val Met Lys Arg Phe Arg
 20 25 30
 Tyr Ile Leu Ala Val Ile Leu Ser Leu Leu Ile Val Tyr Val Gly Ala
 35 40 45
 Gly Val Ser Val Ala Gln Tyr Cys Cys Ser Gly Cys Glu Thr Ala Asn
 50 55 60
 Cys Cys Cys Ala Asp Lys Cys Gly Phe Cys Gly Lys Phe Asp Phe Glu
 65 70 75 80
 Phe His Lys Ser Cys Arg Gly Glu Gly Cys Thr Ala Thr Ile Tyr Lys
 85 90 95
 Leu Asp Leu Val Lys Gln Ala Phe Glu Ser Ser Val Pro Ala Pro Val
 100 105 110
 Ser Leu Leu Leu Cys Asp Gln Val Ser Asp Leu Leu Cys Ala Leu Phe
 115 120 125
 Arg Asp Glu Val Leu Asp Pro Pro Tyr Val Ile Pro Pro Pro Lys Thr
 130 135 140
 Ser Ser Arg His Tyr Leu Ala Leu Tyr Ser Thr Leu Leu Ile
 145 150 155

<210> 8656

<211> 433

<212> PRT

<213> B.fragilis

<400> 8656

Glu Asn Ile Ser Val Ser Pro Gly Lys Lys Lys Gln Met Ile Glu Lys
 1 5 10 15
 Met Lys Glu Gln Asp Cys Asp Lys Lys Lys Ser Ile Ser Gln Gly Lys
 20 25 30
 Lys His Asn Ile Phe Tyr Lys Met Ile Met Ser Arg Arg Ala Phe Gly
 35 40 45
 Ile Thr Tyr Phe Val Tyr Gly Ala Thr Val Leu Ser Val Leu Ala Glu
 50 55 60
 Arg Ala Glu Ile Leu Ser Ser Thr Pro Ser Val Gly Ser Arg Ile Phe
 65 70 75 80
 Leu Leu Leu Ser Ile Cys Phe Pro Phe Ala Tyr Gly Thr Tyr Leu Leu
 85 90 95
 Cys Thr Lys Asp Lys Asn Ser Ile Lys Met Asn Glu Ile Ile Thr Ser
 100 105 110
 Asp Tyr Phe Lys Arg Val Ile Ser His Lys Trp Asn Ile Ile Ile Cys
 115 120 125
 Leu Met Val Ile Val Val Cys Leu Ser Phe Val Val Ile Phe Ser Asp
 130 135 140
 Arg Asn Trp Glu Ala Pro Ile Asn Phe Asn Leu Pro Ser Ile Ile Val
 145 150 155 160
 Gly Ser Val Thr Gly Tyr Leu Leu Gly Val Leu Ile Arg Arg Val Leu
 165 170 175
 Arg Arg Asn Asn Thr Gly Lys Lys Ser Phe Lys Leu Ile Phe Glu Cys
 180 185 190
 Val Gly Ser Leu Cys Leu Lys Val Ser Asp Gln Leu Glu Glu Ser Val
 195 200 205
 Phe Thr Ile Asp Trp Asp Ser Ser Ile Ile Pro Pro Ser Ile Gly Asp
 210 215 220
 Asp Phe Glu Ile Glu Glu Phe Ile Pro Gly Leu Asn Trp Asn Glu Lys
 225 230 235 240
 Gln Arg Leu Tyr Ser Ile Tyr Gly His Ala Thr Val Ile Glu Arg Ser

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<210> 8657
<211> 266
<212> PRT
<213> B.fragilis
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<400> 8657															
Arg	Cys	Arg	Phe	His	Thr	Asp	Ser	Ile	Asn	Asn	Pro	Asn	Phe	Phe	Tyr
1				5					10					15	
Phe	Ala	Ala	Lys	Glu	Val	His	Phe	Lys	Ile	Leu	Thr	His	Ser	Phe	Ala
			20					25					30		
Thr	His	Gln	Met	Met	Cys	Ile	Phe	Ala	Asn	His	Lys	His	Ile	Thr	Asn
		35					40					45			
Met	Lys	Asn	Glu	Val	Asp	Gly	Arg	Arg	Glu	Ile	Ala	Ser	Arg	Asn	Thr
	50					55					60				
Ala	Trp	Ala	Asn	Ile	Ile	Ala	Arg	Lys	Leu	Thr	His	Trp	Gly	Val	Thr
65					70					75					80
Pro	Asn	Gln	Ile	Ser	Met	Met	Ser	Val	Phe	Phe	Ala	Met	Val	Gly	Cys
				85					90					95	
Leu	Leu	Leu	Ile	Gly	Thr	Val	Ile	Tyr	Pro	Gly	Phe	Asn	Lys	Tyr	Val
			100					105					110		
Ala	Tyr	Ile	Leu	Phe	Ile	Val	Cys	Met	Gln	Ser	Arg	Leu	Leu	Cys	Asn
		115					120					125			
Leu	Phe	Asp	Gly	Met	Val	Ala	Ile	Glu	Gly	Gly	Lys	Lys	Ser	Ala	Asn
	130					135					140				
Gly	Asp	Leu	Tyr	Asn	Asp	Met	Pro	Asp	Arg	Phe	Ala	Asp	Ala	Leu	Phe
145					150					155					160
Ile	Ile	Pro	Val	Gly	Tyr	Val	Ala	Gly	Gly	Phe	Gly	Ile	Glu	Leu	Gly
				165					170					175	
Trp	Leu	Ala	Ala	Leu	Leu	Ala	Val	Met	Thr	Ala	Tyr	Phe	Arg	Trp	Ile
			180					185					190		
Gly	Ala	Tyr	Lys	Thr	His	Gln	His	Phe	Phe	Asn	Gly	Pro	Met	Ala	Lys
		195					200					205			
Gln	His	Arg	Met	Ala	Leu	Leu	Thr	Leu	Thr	Phe	Val	Val	Ala	Thr	Cys

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      210                      215                      220
Thr Ile Tyr Ser Gly Tyr Asp Arg Met Val Cys Phe Ile Ala Leu Ile
225                      230                      235                      240
Ile Ile Asn Ile Gly Leu Ile Ala Thr Leu Ile His Arg Leu Tyr Leu
      245                      250                      255
Ile Ser His Thr Thr Asn Thr Glu Ile Lys
      260                      265

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<210> 8658
 <211> 221
 <212> PRT
 <213> B.fragilis

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<400> 8658
Ser Phe Leu Ser Thr Phe Ala Gly Met Lys Pro Leu Thr Asp Thr Asp
1                      5                      10                      15
Tyr Ile His Ala Leu Ile Ala Glu Gly Glu His Gln Gln Gln Asp Phe
      20                      25                      30
Lys Phe Glu Ile Ser Asp Ala Arg Lys Ile Ala Lys Thr Leu Ser Ala
      35                      40                      45
Phe Ala Asn Thr Asp Gly Gly Arg Leu Leu Ile Gly Val Lys Asp Asn
      50                      55                      60
Gly Lys Ile Ala Gly Val Arg Ser Asp Glu Glu Lys Tyr Met Ile Glu
65                      70                      75                      80
Ala Ala Ala Gln Leu Tyr Cys Arg Pro Glu Val Asp Tyr Ser Met Gln
      85                      90                      95
Thr Phe His Val Glu Gly Arg Ser Val Leu Val Val Gln Ile Asp Glu
      100                      105                      110
Ser Glu His Lys Pro Val Phe Ala Lys Asp Glu Asn Gly Lys Ser Leu
      115                      120                      125
Ala Tyr Ile Arg Ile Lys Asp Glu Asn Ile Leu Ala Thr Pro Val His
      130                      135                      140
Leu Arg Val Trp Gln Gln Ser Gly Ser Pro Ala Gly Glu Leu Ile Arg
145                      150                      155                      160
Tyr Thr Glu Arg Glu Gln Leu Leu Leu Asp Leu Leu Glu Glu Asn Thr
      165                      170                      175
Ser Leu Ser Leu Asn Arg Tyr Cys Arg Gln Ala Gly Ile Ser Arg Arg
      180                      185                      190
Ala Ala Glu His Leu Leu Ala Lys Phe Ile Arg Phe Asp Ile Val Glu
      195                      200                      205
Pro Ile Phe Glu Asn His Lys Phe Tyr Phe Arg Leu Lys
      210                      215                      220

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<210> 8659
 <211> 304
 <212> PRT
 <213> B.fragilis

```

<400> 8659
Glu Arg Ile Ser Ile Met Thr Gly Asp Tyr Lys Phe Arg Phe Met Pro
1                      5                      10                      15
Gly Ile Leu Ser Leu Ile Phe Thr Ala Val Leu Leu Ser Gly Cys Ile
      20                      25                      30
Ala Glu Asn Thr Asp Asp Cys Phe Lys Gly Val Ser Leu Gln Val Lys
      35                      40                      45
Leu Pro Ala Asp Val Ser Gly Glu Thr Met Lys Asp Ile Asn Leu Tyr
      50                      55                      60
Val Phe Asp Asp Lys Asp Leu Leu Leu Asp Ile Leu Pro Ile Ser Arg
65                      70                      75                      80

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Ser Glu Ser Val Val Leu Asp Tyr Pro Gly Ile Pro Val Leu His Cys
      85                      90                      95
Ile Thr Trp Cys Asn Thr Gly Asp Gly Ala Val Ser Ala Ser Ser Leu
      100                    105                    110
Lys Lys Gly Asp Pro Leu Ser Ala Gly Phe Ile Ser Leu Lys Pro Ser
      115                    120                    125
Ala Ala Thr Arg Ala Gln Met Ser Leu Phe Asn Pro Pro Ala Asp Leu
      130                    135                    140
Phe Tyr Gly Glu Leu Ile Leu Glu Asn Thr Ser Thr Ser Asn His Met
      145                    150                    155                    160
Glu Glu Gln Glu Leu Ser Val Ser Arg Met Val Ala Ser Met Asn Ile
      165                    170                    175
Thr Ile Arg Gly Leu Glu Leu Leu Gly Glu Ser Asn Arg Gly Val Tyr
      180                    185                    190
Ser Phe Val Val His Glu Thr Ala Ser Arg Leu Asp Phe Glu Gly Arg
      195                    200                    205
Tyr Gly Gly Asp Pro Ala Ser Tyr Ala Phe Thr Pro Ser Phe Glu Val
      210                    215                    220
Gly Lys Asp Cys Thr Met Pro Thr Phe Asn Leu Phe Pro Val Met Gly
      225                    230                    235                    240
Ser Gly Gly Ile Ile Ile Asp Ile Tyr His Asp Gly Lys Leu Leu Arg
      245                    250                    255
Ser Val Ser Thr Asp Ser Gly Asn Arg Pro Leu Val Pro Val Val Gly
      260                    265                    270
Lys Thr Leu Asn Val Leu Leu Asn Phe Lys Leu Asp Val Asp Val Gln
      275                    280                    285
Val Glu Ile Thr Gly Trp Gly Glu Lys Tyr Ile Trp Lys Glu Tyr Asn
      290                    295                    300

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<210> 8660

<211> 61

<212> PRT

<213> B.fragilis

<400> 8660

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Leu Ser Pro Ser Pro Ala Gln Pro Ala Cys Tyr Glu Asn Val Tyr Cys
1      5                      10                      15
Asn Val Asp Asp Pro Val Pro Pro Val Cys Gln Ala Val Thr Leu Ile
      20                    25                    30
Glu Asp Val Ile Ser Phe Gly Val Lys Val Arg Val Ile Lys Cys Asp
      35                    40                    45
Phe Pro Thr Ser Val Val Thr Glu Met Val Asp Ser Gly
      50                    55                    60

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<210> 8661

<211> 302

<212> PRT

<213> B.fragilis

<400> 8661

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Ala Met Thr Ser Gln Glu Ala Asn Ser Ile Pro Leu Glu Asp Ile Leu
1      5                      10                      15
Ser Arg Tyr Gly Tyr Glu Pro Ser Arg Arg Tyr Gly Gly Tyr Asp Met
      20                    25                    30
Tyr Arg Ser Pro Phe Arg Cys Asp Ser Ser Pro Ser Phe Lys Val Phe
      35                    40                    45
Arg Asn Glu Asn Arg Trp Tyr Asp Phe Gly Asp Ser Ser His Gly Arg
      50                    55                    60
Val Val Asp Leu Val Met Arg Ile His Asn Cys Ser Phe Pro Gln Ala

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65          70          75          80
Met Lys Glu Ile Glu Gly Leu Gly Phe Ser Ser Gly Met Ile Pro Gln
      85          90          95
Pro Arg Pro Val Pro Val Thr Val Gln Lys Ala Ser Gly Met Thr Leu
      100          105          110
Leu Lys Ile Ile Pro Val Glu Asn Gly His Leu Leu Asp Tyr Ala Ala
      115          120          125
Ser Arg Gly Ile Asp Ala Asp Ile Val Arg Glu His Cys Val Glu Val
      130          135          140
His Tyr Cys Phe Glu Lys Asn Pro Arg Glu Lys Tyr Ala Leu Gly Phe
      145          150          155          160
Ala Asn Asp His Gly Gly Phe Glu Leu Arg Asn Ser Met Phe Lys Gly
      165          170          175
Cys Ala Thr Ala Lys Asp Ile Thr Gly Leu Ala Ala Gly Asn Arg Ser
      180          185          190
Cys Ala Val Phe Glu Gly Phe Phe Asp Leu Leu Ser Phe Lys Gln Tyr
      195          200          205
Ala Lys Glu His Pro Glu Met Pro Ala Leu Gly Lys Leu Asp Leu Cys
      210          215          220
Val Leu Asn Ser Thr Ser Ile Val Glu Arg Ser Lys Asp Phe Leu Ser
      225          230          235          240
Arg Tyr Glu Lys Val His Ala Phe Leu Asp Asn Asp Ala Pro Gly Arg
      245          250          255
Glu Ala Leu Arg Lys Met Arg His Phe Leu Pro Lys Asp Thr Val Leu
      260          265          270
Val Asn Glu Ala Glu Arg Leu Tyr Pro Ser Cys Asn Asp Phe Asn Glu
      275          280          285
Phe Leu Gln Lys Ile Lys Cys Pro Ala Ser Gly Arg Glu Met
      290          295          300

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<210> 8662

<211> 326

<212> PRT

<213> B.fragilis

<400> 8662

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Ser Lys Thr Phe Lys Val Ile Phe Met Glu Gln Leu Ser Phe Ile Glu
1      5      10      15
Ser Phe Arg Thr Ser Pro Phe Ile Leu Thr Glu Gly Ala Ile Val Glu
      20      25      30
Arg Leu Arg His Glu Phe His Ile Ser Pro Asp Lys His Ile Ala His
      35      40      45
Ala Ala Leu Ile Tyr Asp Asp Ser His Arg Glu Ile Leu Ala Ser Ile
      50      55      60
Tyr Arg Gln Tyr Leu Gln Ile Ala Thr Glu Phe Arg Leu Pro Leu Met
65      70      75      80
Leu Met Thr Pro Thr Arg Arg Ala Asn Ile Glu Gln Ile Ala Ala Ser
      85      90      95
Asp Tyr Arg His Lys Asn Val Leu Ala Asp Thr Met Ala Phe Leu Ser
      100      105      110
Arg Phe Arg Asp Glu Ala Ser Thr Pro Val Tyr Ile Gly Gly Leu Ala
      115      120      125
Gly Cys Arg Gly Asn Ala Tyr Asp Gly Arg Tyr Tyr Leu Ser Val Glu
      130      135      140
Glu Ala Met Glu Phe His Phe Pro Thr Val Arg Thr Leu Val Gln Ser
      145      150      155      160
Gly Ala Asp Tyr Leu Phe Ala Gly Ile Met Pro Gln Leu Thr Glu Ala
      165      170      175
Ile Gly Met Ala Asn Ala Met Ala Ala Thr Gly Leu Pro Tyr Ile Ile

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      180              185              190
Ser Phe Met Ile Cys Arg Asp Gly Arg Leu Ile Asp Gly Thr Phe Ile
      195              200              205
His Asp Ala Ile Asp Ala Ile Glu Lys Glu Thr Ser Thr Arg Pro Leu
      210              215              220
Cys Tyr Met Ala Asn Cys Val His Pro Asp Val Leu His Gln Ala Leu
      225              230              235              240
Leu His Pro Arg Asn Asp Thr Pro Leu Val Arg Gln Arg Phe Gln Gly
      245              250              255
Ile Gln Ala Asn Ala Ala Asn Leu Ser Pro Glu Glu Leu Asp Gly Cys
      260              265              270
Asp His Leu Ile Ser Ser Ser Pro Glu Glu Leu Ala Asp Arg Leu Met
      275              280              285
Thr Leu Leu Trp Asp Phe Pro Leu Lys Ile Cys Gly Gly Cys Cys Gly
      290              295              300
Thr Asn Gln Gln His Met His Arg Phe Ala Glu Met Leu Ala Tyr Arg
      305              310              315              320
Arg Asp Asn Lys Ala Trp
      325

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<210> 8663
<211> 75
<212> PRT
<213> B.fragilis

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<400> 8663
Thr Val Thr Pro Glu Ser Ser Phe Leu Tyr Ser Gly Ile Ile Ala Tyr
1              5              10              15
Ser Ile Cys Asp Ile Ala Ile Ser Arg Glu Leu Lys Ala Ala Tyr Leu
      20              25              30
Cys Asn Ile Arg Leu Arg Gln Leu Lys Glu Asp Pro Lys Arg Tyr Glu
      35              40              45
Lys Glu Phe Ile Asn Phe Ser Arg Thr Ala Asp Ile Gly Asn Asp Ile
      50              55              60
Gly Thr Glu Arg Arg Asn His Tyr Glu Glu Val
65              70              75

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<210> 8664
<211> 513
<212> PRT
<213> B.fragilis

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<400> 8664
Ile Thr Met Leu Val Thr Ile Val Ala Ser Ile Ala Cys Phe Ile Val
1              5              10              15
Gly Gly Ile Leu Ser Tyr Val Leu Phe Lys Tyr Gly Leu Lys Ala Lys
      20              25              30
Tyr Asp Asn Val Leu Lys Glu Ala Glu Thr Glu Ala Glu Val Ile Lys
      35              40              45
Lys Asn Lys Leu Leu Glu Val Lys Glu Lys Phe Leu Asn Lys Lys Ala
      50              55              60
Asp Leu Glu Lys Glu Val Ala Leu Arg Asn Gln Lys Ile Gln Gln Ala
65              70              75              80
Glu Asn Lys Leu Lys Gln Arg Glu Met Val Leu Ser Gln Arg Gln Glu
      85              90              95
Glu Ile Gln Arg Lys Arg Ala Glu Ala Asp Ala Val Arg Glu Asn Leu
      100              105              110
Glu Ala Gln Leu Gly Ile Val Asp Lys Lys Lys Glu Glu Leu Asp Lys
      115              120              125

```

Leu Gln His Gln Glu Ile Glu Lys Leu Glu Ala Leu Ser Gly Leu Ser
 130 135 140
 Ala Asp Glu Ala Lys Glu Arg Leu Val Glu Ser Leu Lys Glu Glu Ala
 145 150 155 160
 Lys Thr Gln Ala Gln Ser Tyr Ile Asn Asp Ile Met Asp Asp Ala Lys
 165 170 175
 Leu Thr Ala Ser Lys Glu Ala Lys Arg Ile Val Ile Gln Ser Ile Gln
 180 185 190
 Arg Val Ala Thr Glu Thr Ala Ile Glu Asn Ser Val Thr Val Phe His
 195 200 205
 Ile Glu Ser Asp Glu Ile Lys Gly Arg Ile Ile Gly Arg Glu Gly Arg
 210 215 220
 Asn Ile Arg Ala Leu Glu Ala Ala Thr Gly Val Glu Ile Val Val Asp
 225 230 235 240
 Asp Thr Pro Glu Ala Ile Val Leu Ser Ala Phe Asp Pro Val Arg Arg
 245 250 255
 Glu Ile Ala Arg Leu Ala Leu His Gln Leu Val Thr Asp Gly Arg Ile
 260 265 270
 His Pro Ala Arg Ile Glu Glu Val Val Ala Lys Val Arg Lys Gln Val
 275 280 285
 Glu Glu Glu Ile Ile Glu Thr Gly Lys Arg Thr Thr Ile Asp Leu Gly
 290 295 300
 Ile His Gly Leu His Pro Glu Leu Ile Arg Ile Ile Gly Lys Met Lys
 305 310 315 320
 Tyr Arg Ser Ser Tyr Gly Gln Asn Leu Leu Gln His Ala Arg Glu Thr
 325 330 335
 Ala Asn Leu Cys Ala Val Met Ala Ser Glu Leu Gly Leu Asn Pro Lys
 340 345 350
 Lys Ala Lys Arg Ala Gly Leu Leu His Asp Ile Gly Lys Val Pro Asp
 355 360 365
 Glu Glu Pro Glu Leu Pro His Ala Leu Leu Gly Met Lys Leu Ala Glu
 370 375 380
 Lys Phe Lys Glu Lys Pro Asp Ile Cys Asn Ala Ile Gly Ala His His
 385 390 395 400
 Asp Glu Ile Glu Met Thr Ser Leu Leu Ala Pro Ile Val Gln Val Cys
 405 410 415
 Asp Ala Ile Ser Gly Ala Arg Pro Gly Ala Arg Arg Glu Ile Val Glu
 420 425 430
 Ala Tyr Ile Lys Arg Leu Asn Asp Leu Glu Gln Leu Ala Met Ser Tyr
 435 440 445
 Pro Gly Val Thr Lys Thr Tyr Ala Ile Gln Ala Gly Arg Glu Leu Arg
 450 455 460
 Val Ile Val Gly Ala Asp Lys Ile Asp Asp Lys Gln Thr Glu Asn Leu
 465 470 475 480
 Ser Gly Glu Ile Ala Lys Lys Ile Gln Asp Glu Met Thr Tyr Pro Gly
 485 490 495
 Gln Val Lys Ile Thr Val Ile Arg Glu Thr Arg Ala Val Ser Phe Ala
 500 505 510
 Lys

<210> 8665

<211> 61

<212> PRT

<213> B.fragilis

<400> 8665

Gly Tyr Phe Pro Pro Ser Ile Asn Phe Ile Phe His Ile Cys Asp Met
 1 5 10 15

Phe Met Ile Arg Lys Tyr Thr His His Leu Met Ser Cys Lys Gly Met
 20 25 30
 Ser Glu Asn Phe Glu Met Asn Leu Phe Cys Ser Lys Ile Lys Lys Val
 35 40 45
 Trp Val Val Tyr Gly Ile Cys Val Glu Ser Ala Ser Leu
 50 55 60

<210> 8666
 <211> 251
 <212> PRT
 <213> B.fragilis

<400> 8666
 Phe Tyr Leu Pro Asp Ala Gly Cys Phe His Phe Ile Ser Val Phe Leu
 1 5 10 15
 Gln Glu Ser Lys Glu Arg Asp Met Gln Gln Ile Lys Val Ile Ala Phe
 20 25 30
 Asp Ala Asp Asp Thr Leu Trp Asp Asn Gln Val Phe Tyr Asp Lys Val
 35 40 45
 Glu Ser Glu Phe Cys His Leu Leu Ala Gly Tyr Gly Thr Ala Glu Glu
 50 55 60
 Ile Ser Ser Arg Leu Phe Ala Ile Glu Met Glu Asn Met Asp Ile Tyr
 65 70 75 80
 Lys Tyr Gly Ala Lys Pro Phe Thr Leu Ser Met Val Glu Ala Ala Val
 85 90 95
 Lys Ile Ser Arg Asn Arg Val Pro Ala Glu Val Ile Gly Arg Ile Val
 100 105 110
 Glu Met Gly Lys Glu Leu Leu Glu Met Pro Ile Arg Leu Leu Gly Gly
 115 120 125
 Val Thr Glu Ala Leu Glu Thr Leu Lys Asp Asp Tyr Lys Leu Val Val
 130 135 140
 Ala Thr Lys Gly Asp Leu Leu Asp Gln Glu Arg Lys Leu Gln Arg Ser
 145 150 155 160
 Gly Ile Ser His Tyr Phe Asp His Thr Glu Ile Met Thr Asp Lys Ala
 165 170 175
 Pro Gln Asp Tyr Gln Arg Leu Ile Ser Ser Leu Asp Val Ala Pro Gln
 180 185 190
 Ser Phe Leu Met Val Gly Asn Ser Leu Lys Ser Asp Val Leu Pro Val
 195 200 205
 Leu Ser Leu Gly Gly His Ala Ile His Val Pro Ala Glu Ala Met Trp
 210 215 220
 Lys His Glu Val Ile Ser Gly Thr Glu Arg Glu Tyr Leu Met Ile His
 225 230 235 240
 Ser Leu Ala Glu Leu Pro Ala Val Leu Arg Gly
 245 250

<210> 8667
 <211> 1445
 <212> PRT
 <213> B.fragilis

<400> 8667
 Leu Ile Ser Phe Ile Met Ser Gln Glu Asn Pro Ser Ser Gln Leu Asp
 1 5 10 15
 Val Glu Phe Ile Tyr Leu Pro Val Ile Asn Tyr Ser Met Gln Gln Asn
 20 25 30
 Arg Ile Pro Val Val Arg Leu Leu Ser Ile Lys Asn Asn Thr Glu His
 35 40 45
 Pro Leu Ala Asp Leu Lys Val Phe Leu Thr Leu Glu Pro Glu Phe Ala

50		55		60	
Ser Val Ser Pro Val Met Val Glu Lys Leu Ala Ser Gly Glu Ile Ile					
65		70		75	80
Thr Ile Thr Gly Leu Asn Leu Met Leu Asp Pro Ser Phe Phe Ile Gln					
	85		90		95
Gln Thr Glu Arg Leu Ser Gly Thr Ile Val Leu Val Val Ser Asp Glu					
	100		105		110
Glu Asn Val Phe Phe Gln Glu Lys Tyr Pro Val Asp Ile Leu Ala Phe					
	115		120		125
Asp Gln Trp Gly Gly Ile Gln Val Leu Pro Glu Leu Leu Ser Ala Phe					
	130		135		140
Val Val Pro Asn His Pro Val Leu Thr Gly Val Leu Ser Arg Ala Ser					
145		150		155	160
Ser Ile Leu Lys Glu Trp Ser Gly Asn Ser Ser Leu Asp Ala Tyr Gln					
	165		170		175
Ser Cys Asn Pro Asn Arg Val Lys Leu Gln Leu Ala Ala Leu Tyr Glu					
	180		185		190
Ala Ile Lys Glu Gln His Ile Ala Tyr Cys Thr Pro Pro Ser Ser Phe					
	195		200		205
Gly Asp Ala Gly Gln Arg Val Arg Leu Ser Asp Asn Val Leu Ser Gly					
	210		215		220
Lys Leu Gly Thr Cys Leu Asp Leu Ser Leu Leu Tyr Ala Ser Cys Ala					
225		230		235	240
Glu Ala Met Gly Leu His Pro Leu Leu Val Ile Ile Gln Gly His Ala					
	245		250		255
Phe Val Gly Cys Trp Leu Ile Asp Gly Thr Phe Pro Asp Ala Val Asn					
	260		265		270
Asp Asp Pro Ser Leu Leu Thr Lys Arg Thr Ala Asp Gly Ile Asn Glu					
	275		280		285
Val Ile Leu Leu Glu Ala Thr Cys Met Thr Asp Gly Asn Asn Val Thr					
	290		295		300
Phe Asp Thr Ala Val Gly Met Ala Asn Asp Lys Met Leu Ala Val Asn					
305		310		315	320
Asp Phe Thr Cys Phe Ile Asp Val Val Arg Ser Arg Phe Ala His Ile					
	325		330		335
Leu Pro Leu Pro Gln Arg Val Met His Gly Lys Ala Trp Thr Val Gly					
	340		345		350
Pro Glu Val Ala Gln Ile Pro Lys Ser Gly Leu Tyr Ile Ser Pro Val					
	355		360		365
Ser Ala Pro Glu Glu Ile Lys Gln Tyr Asp Leu Asp Asn Gln Asp Ser					
	370		375		380
Tyr Val Glu Phe Thr Lys Gln Leu Leu Trp Glu Arg Lys Leu Leu Asp					
385		390		395	400
Leu Ser Leu Arg Asn Asn Phe Leu Asn Leu Arg Ile Thr Arg Asn Ala					
	405		410		415
Leu Gln Val Ile Ser Ala Asp Ile Asp Lys Met Glu Asp Ala Phe Ser					
	420		425		430
Asp Gly Thr Glu Phe Gln Ile Leu Gly Lys Pro Ser Asp Trp Asp Asn					
	435		440		445
Pro Leu Tyr Asp Phe Gly Leu Tyr Gly Thr Leu Thr Glu Ser Asp Pro					
	450		455		460
Met Ile Gly Leu Ile Lys Gln Glu Leu Thr Gln Lys Arg Leu Arg Thr					
465		470		475	480
Tyr Leu Thr Glu Gln Asp Leu Lys Lys Ser Leu Thr Tyr Leu Tyr Arg					
	485		490		495
Ser Ser Arg Ile Ala Leu Glu Glu Asn Gly Ala Asn Thr Leu Tyr Leu					
	500		505		510
Ala Leu Gly Leu Leu Arg Trp Tyr Glu Thr Glu His Ser Glu Arg Pro					
	515		520		525

Arg	Tyr	Ala	Pro	Ile	Leu	Leu	Leu	Pro	Val	Glu	Met	Ile	Arg	Lys	Ser
530						535					540				
Val	Ser	Lys	Gly	Tyr	Ile	Ile	Arg	Ala	Arg	Glu	Glu	Glu	Ser	Met	Leu
545					550					555					560
Asn	Ile	Thr	Leu	Leu	Glu	Met	Leu	Arg	Gln	Asn	Phe	Gly	Ile	Thr	Ile
			565						570					575	
Ser	Gly	Leu	Asp	Ser	Leu	Pro	Lys	Asp	Glu	Asn	Gly	Thr	Asp	Val	Lys
			580					585					590		
Arg	Ile	Phe	Ser	Ile	Phe	Arg	Lys	Ala	Val	Met	Asn	Glu	Lys	Arg	Trp
		595					600					605			
Asp	Val	Glu	Glu	Gln	Ala	Ile	Leu	Gly	Thr	Phe	Ser	Phe	Ser	Lys	Phe
	610					615					620				
Ile	Met	Trp	Asn	Asp	Ile	His	Ser	Asn	Ala	Glu	Glu	Leu	Ser	Lys	Asn
625					630					635					640
Lys	Ile	Val	Gly	Ser	Leu	Met	Ser	Gly	Lys	Met	Glu	Trp	Glu	Val	Ala
			645						650					655	
Glu	Val	Asp	Ala	Asn	Ala	Ile	Glu	Leu	Asp	His	Ala	Leu	Thr	Pro	Ala
		660						665					670		
Asp	Ile	Ala	Leu	Pro	Val	Ser	Ala	Asp	Ser	Ser	Gln	Leu	Glu	Ala	Val
	675						680					685			
Tyr	Glu	Ala	Val	Asn	Glu	Lys	Ser	Phe	Ile	Leu	His	Gly	Pro	Pro	Gly
690						695					700				
Thr	Gly	Lys	Ser	Gln	Thr	Ile	Thr	Asn	Ile	Ile	Ala	Asn	Ala	Leu	Tyr
705					710					715					720
Gln	Gly	Lys	Arg	Val	Leu	Phe	Val	Ala	Glu	Lys	Met	Ala	Ala	Leu	Ser
			725						730					735	
Val	Val	Gln	Lys	Arg	Leu	Met	Asn	Ile	Gly	Leu	Ala	Pro	Phe	Cys	Leu
		740						745					750		
Glu	Leu	His	Ser	Asn	Lys	Ala	Arg	Lys	Thr	Asp	Val	Leu	Ser	Gln	Leu
	755					760					765				
Lys	Glu	Ser	Thr	Glu	Ile	Phe	Arg	Tyr	Lys	Glu	Pro	Glu	Glu	Phe	Lys
	770					775					780				
Glu	Glu	Ser	Glu	Arg	Leu	Phe	Lys	Met	Arg	Gln	Gln	Ile	Asn	Gly	Tyr
785					790					795					800
Val	Glu	Ala	Leu	His	Arg	Ile	Tyr	Pro	Cys	Gly	Ile	Ser	Val	Tyr	Glu
			805						810					815	
Ala	Ile	Thr	Arg	Tyr	Ser	Ser	Ile	Asp	Glu	Thr	Glu	Glu	Ile	Met	Ile
		820						825					830		
Pro	Ala	Ser	Leu	Leu	Ala	Ser	Leu	Thr	Lys	Glu	Gln	Phe	Asn	Glu	Trp
		835					840					845			
Asn	His	Ala	Val	Glu	Glu	Leu	Ile	Gly	Val	Gly	Lys	Val	Ser	Gly	His
	850					855					860				
Ser	His	Gln	His	Pro	Leu	Thr	Gly	Ile	Asn	Ile	Met	Glu	Tyr	Ser	Ser
865					870					875					880
Gln	Leu	Lys	Glu	Glu	Ala	Asp	Lys	Leu	Leu	Lys	Asp	Tyr	Met	Ile	Leu
			885						890					895	
Leu	Gln	Lys	Met	Glu	Glu	Lys	Met	Asn	Arg	Cys	Phe	Ser	Asn	Tyr	Gly
		900						905					910		
Ile	Gly	Asn	Lys	Cys	Thr	Glu	Lys	Leu	Leu	Asp	Asn	Phe	Val	Arg	Phe
	915						920					925			
Ile	Arg	Ile	Leu	Met	Gln	Leu	Pro	Gly	Met	Thr	Gly	Asn	Leu	Met	Leu
	930					935					940				
Leu	Thr	Asp	Leu	Asp	Glu	Asn	Val	Asp	Lys	Ile	Gly	Arg	Ile	Ile	Glu
945					950					955					960
His	Gly	Arg	Lys	Arg	Asp	Glu	Phe	Cys	Asn	Leu	Leu	Lys	Gln	Ser	Phe
			965						970					975	
Glu	Asp	Thr	Phe	Leu	Thr	Leu	Pro	Val	Gln	Gln	Lys	Ile	Ser	Glu	Trp
		980						985					990		
Lys	Asp	Ile	Thr	Gln	Ser	Trp	Phe	Leu	Pro	Arg	Leu	Leu	Lys	Gln	Arg

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          995              1000              1005
Lys Phe Cys Lys Glu Leu Ser Leu Phe Ser Leu Gln Gly Arg Val Asn
1010              1015              1020
Lys Glu Gln Val Leu Pro Ala Leu Gln Gln Leu Leu Phe Tyr Gln Gln
1025              1030              1035              1040
Gln Lys Gln Glu Val Asp Ser Ser Ser Arg Trp Phe Glu Asp Leu Phe
          1045              1050              1055
Gly Asn Lys Ser His Pro Gly Glu Glu Gln Trp Asp Asp Ile Glu Val
          1060              1065              1070
Met Ser Lys Ala Ile Leu Gln Leu Asn Arg Leu Leu Val Glu Val Val
          1075              1080              1085
Asp Asp Pro Met Ser Ile Arg Arg Val Lys Glu Lys Leu Ala Glu Gln
          1090              1095              1100
Leu Ser Glu Gly Tyr Ser Leu Phe Arg Gln Met Asn Arg Glu Leu Leu
1105              1110              1115              1120
Glu Gly Leu Val Tyr Asp Trp Glu Cys Ile Lys Gln Leu Glu Lys Ser
          1125              1130              1135
Met Leu Gln Leu Leu Gly Val Ser Lys Glu Val Leu His Ala Cys Glu
          1140              1145              1150
Asp Asp Trp Leu Ala Gly Ala Ser Arg Gln Cys Glu Ile Trp Ala Arg
          1155              1160              1165
Asn Thr Asp Lys Leu Lys Asp Trp Tyr Arg Trp Leu Asn Val Ser Arg
          1170              1175              1180
Arg Phe Glu Ala Cys Gly Leu Thr Ser Val Phe Ala Ala Tyr Thr Glu
1185              1190              1195              1200
Arg Asn Leu Pro Ala Glu Arg Met Met Asn Ile Tyr Leu Lys Gly Phe
          1205              1210              1215
Tyr His Ser Phe Ile Glu Tyr Ala Ile Gly Lys Glu Gln Val Leu Gln
          1220              1225              1230
Phe Phe Asn Gly Glu Leu Phe Asn Asp Ser Ile Arg Arg Phe Arg Glu
          1235              1240              1245
Leu Asn Thr Glu Tyr Gln Glu Leu Ile Lys Lys Glu Leu Tyr Thr Lys
          1250              1255              1260
Leu Ala Ser Asn Ile Pro Ser Phe Val Leu Ala Ala Ala Gln Ser Ser
1265              1270              1275              1280
Glu Val Gly Ile Leu Gln Lys Cys Ile Arg Ser Asn Gly Arg Gly Met
          1285              1290              1295
Ser Ile Arg Lys Leu Phe Asp Ser Ile Ser Asn Leu Leu Ser Arg Met
          1300              1305              1310
Cys Pro Cys Met Leu Met Ser Pro Met Ser Val Ala Gln Tyr Ile Asn
          1315              1320              1325
Val Asn His Asp Lys Phe Asp Leu Val Val Phe Asp Glu Ala Ser Gln
          1330              1335              1340
Met Pro Thr Cys Glu Ala Val Gly Ala Ile Ala Arg Gly Asn His Val
1345              1350              1355              1360
Val Val Val Gly Asp Pro Lys Gln Met Pro Pro Thr Asn Phe Phe Thr
          1365              1370              1375
Ser Asn Ser Val Asp Glu Glu His Ile Glu Ile Glu Asp Leu Glu Ser
          1380              1385              1390
Ile Leu Asp Asp Cys Leu Ala Leu Ser Met Pro Ser Lys Tyr Leu Leu
          1395              1400              1405
Trp His Tyr Arg Ser Lys His Glu Ser Leu Ile Ala Phe Ser Lys Ser
          1410              1415              1420
Gln Tyr Tyr Asp Asn Lys Leu Leu Thr Phe Gln Ser Arg Met Ile Trp
1425              1430              1435              1440
Leu Pro Lys Leu Leu
          1445

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<211> 343
 <212> PRT
 <213> B.fragilis

<400> 8668

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Ser Val Thr Pro Asn Cys Leu Ile Tyr Ile Lys Ala Ile Lys Met Lys
1          5          10          15
Asn Tyr Ile Gln Arg Ile Ile Arg Leu Phe Ala Thr Ser Asp Pro Asp
          20          25          30
Pro Lys Leu Thr Gly Glu Ile His Arg Trp Leu Leu Asp Gln Glu His
          35          40          45
Ala Gly Glu Lys Glu Thr Ala Leu His Asp Leu Trp Asn Glu Thr Glu
          50          55          60
Gly Lys Val Asp Arg Thr Thr Trp Asp Ser Leu Ala Ser Val Tyr Thr
65          70          75          80
Lys Val Gly Ala Asn Ser Gly Asp Arg His Gln Pro Arg Ile Arg Phe
          85          90          95
Ala His Tyr Ala Ala Ala Ile Ala Leu Leu Ile Val Ser Val Ser Val
          100          105          110
Thr Phe Gln Met Thr Lys Gln His Phe Ala Glu Ala Pro Leu Ile Glu
          115          120          125
Asn Ile Thr Pro Asp Gly Arg Leu Ser Ser Leu Arg Leu Pro Asp Gly
          130          135          140
Ser Ile Val Gln Thr Asn Ser Gly Ser Ile Leu Leu Tyr Pro Glu Lys
145          150          155          160
Phe Lys Gly Glu Thr Arg Thr Val Tyr Leu Ile Gly Glu Ala Asn Phe
          165          170          175
Lys Val Lys Lys Asn Ser Gly Gln Pro Phe Ile Val Arg Ser Gly Thr
          180          185          190
Met Ser Val Thr Ala Leu Gly Thr Glu Phe Asn Val Ala Ala Tyr Pro
          195          200          205
Glu Glu Asn Glu Met Ile Ala Thr Leu Ile His Gly Lys Ile Lys Val
          210          215          220
Glu Cys Asp Asn Gly Lys Glu Ser Tyr Ile Val Thr Pro Gly Gln Gln
225          230          235          240
Val Thr Tyr Arg Lys Ser Thr Gly Glu Ser Arg Leu Ala Glu Ala Asn
          245          250          255
Ile Glu Asp Val Thr Ala Trp Gln Lys Gly Met Tyr Val Phe Arg Gly
          260          265          270
Val Thr Met Ser Glu Ile Leu Asn Glu Leu Glu Arg Arg Tyr Ala Val
          275          280          285
Thr Phe Gln Tyr Asn Ala Asn Leu Phe Asn Asp Asp Lys Phe Asn Phe
          290          295          300
Arg Phe Arg Glu Lys Ser Thr Leu Glu Asp Ile Leu Asn Ile Met Gln
305          310          315          320
Glu Val Val Gly Gly Phe Ser His Glu Leu Lys Gly Asn Ile Cys Tyr
          325          330          335
Ile Lys Pro Glu Thr Lys Lys
          340

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<210> 8669
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8669

```

Met Pro Lys Pro His Trp Val Ile Leu Ala Asn Thr Leu Met Thr Val
1          5          10          15
Glu Leu Val Met Thr Thr Phe Cys Asn Ser Lys Lys Val Ala Lys Val

```

	20		25		30										
Ile	Ser	Ser	Thr	Leu	Gly	Leu	Gln	Lys	Val	Lys	Lys	Ser	Ser	Ile	Ser
	35						40					45			
Val	Ser	Val	Ala	Leu	Gly	Phe	Asp	Ala	Val	Val	Leu	Asn	Pro	Val	
	50					55					60				

<210> 8670
 <211> 289
 <212> PRT
 <213> B.fragilis

<400> 8670

Leu	His	Arg	Pro	Tyr	Val	Ala	Cys	Tyr	Cys	Pro	Asn	Leu	Leu	Arg	Lys
1				5					10					15	
Arg	Arg	Met	Lys	Ile	Ser	Tyr	His	Leu	Phe	Leu	Thr	Ile	Glu	Ile	Val
			20					25				30			
Met	Ile	Leu	Phe	Ile	Tyr	Asp	Lys	Thr	Leu	Asp	Gly	Leu	Leu	Thr	Ala
		35					40				45				
Leu	Phe	Asp	Ala	Tyr	Asn	Arg	Lys	Thr	Phe	Pro	Asp	Val	Leu	Leu	Ser
	50					55					60				
Lys	Gly	Asp	Thr	Leu	Pro	Leu	Phe	Tyr	Asp	Asp	Ile	Phe	Thr	Val	Ile
65				70					75					80	
Thr	Asp	Glu	Glu	Lys	Ala	Gly	Arg	Val	Trp	Arg	Gly	Leu	Gln	Lys	Lys
				85					90				95		
Ile	Ser	Ala	Ser	Ala	Leu	Ser	Ala	Ile	Thr	Trp	Cys	Trp	Leu	Ser	Glu
			100					105					110		
Leu	Pro	Glu	Val	Gly	Met	Leu	Leu	Phe	Arg	Tyr	Ile	Arg	Lys	Ala	Ile
		115					120					125			
Asp	Ser	Pro	Val	Ser	Ile	Glu	Thr	Asn	Phe	Gly	Asp	Pro	Asp	Val	Leu
	130					135					140				
Ala	Leu	Ser	Lys	Ile	Trp	Lys	Arg	Val	Asp	Trp	Glu	Arg	Leu	Arg	Met
145					150					155				160	
Leu	Gln	Phe	Val	Arg	Phe	Gln	Lys	Ala	Val	Asp	Gly	Thr	Phe	Phe	Ala
				165					170					175	
Ala	Phe	Glu	Pro	Gln	His	Asn	Ala	Leu	Pro	Leu	Thr	Val	Gly	His	Phe
		180					185						190		
Lys	Asp	Arg	Phe	Ala	Asp	Gln	Arg	Trp	Leu	Ile	Tyr	Asp	Met	Lys	Arg
	195					200						205			
Arg	Tyr	Gly	Phe	Tyr	Tyr	Asp	Leu	His	Thr	Val	Glu	Glu	Val	Thr	Phe
	210					215					220				
Asp	Asp	Asp	Gly	Gln	Ala	His	Leu	Ile	Thr	Gly	Met	Leu	Asp	Glu	
225				230					235					240	
Ser	Leu	Met	Asp	Lys	Asp	Glu	Lys	Leu	Phe	Gln	Gln	Leu	Trp	Lys	Thr
				245					250					255	
Tyr	Phe	Lys	Ser	Ile	Thr	Ile	Lys	Glu	Arg	Leu	Asn	Pro	Arg	Lys	His
		260					265					270			
Lys	Gln	Asp	Met	Pro	Val	Arg	Tyr	Trp	Lys	Tyr	Ile	Thr	Glu	Lys	Gln
		275					280					285			

Lys

<210> 8671
 <211> 373
 <212> PRT
 <213> B.fragilis

<400> 8671

Ile	His	Lys	Phe	Met	Pro	Arg	Thr	Ala	Lys	Lys	Gly	Phe	Thr	Tyr	Tyr
1				5					10					15	

Gly Phe Asp Thr Asp His Phe Tyr Asp Pro Lys Val Lys Arg Leu Lys
 20 25 30
 Asn Lys Phe Gly Met Glu Gly Trp Ala Val Phe His Phe Ile Val Asn
 35 40 45
 Glu Ile His Arg Val Glu Gly Tyr Tyr Met Ile Met Asp Ser Asp Gly
 50 55 60
 Leu Phe Asp Val Ser Asp Tyr Ser Arg Met Asp Glu Gln Arg Ile Ala
 65 70 75 80
 Gly Ile Val Asp Tyr Cys Ala Glu Leu Gly Leu Phe Asp Lys Gly Leu
 85 90 95
 Trp Arg Ser Arg Gln Val Leu Thr Ser Glu Glu Ile Gln Asn Arg Tyr
 100 105 110
 Met Gly Ile Cys Lys Ser Ile His Arg Lys Pro Ser Ile Ser Asp Asp
 115 120 125
 Tyr Leu Leu Leu Asn Ala Ala Ala Pro Ala Ala Thr Ser Ser Pro Gln
 130 135 140
 Val Ala Ala Pro Cys Pro Ala Thr His Thr Ala Pro Val Ala Glu Pro
 145 150 155 160
 Ala Arg Thr Gly Glu Lys Glu Lys Asp Thr Glu Leu Met Gln Ala Ile
 165 170 175
 Ala Asp Phe Lys Arg Arg Leu Gln Glu Pro Glu Ser Ala Ala Gly Val
 180 185 190
 Val Arg Glu Glu Ser Gly Ile Ile Arg Glu Asn Arg Pro Gln Asn Lys
 195 200 205
 Ile Lys Glu Asn Ile Ser Ser Pro Asn Pro Ser Gly Glu Gly Gly Tyr
 210 215 220
 Thr Pro Glu Arg Glu Glu Glu Arg Asn Ser Leu Ser Gly Lys Leu Gln
 225 230 235 240
 Tyr Leu Gly Val Asp Ser Asn Ile Ile Gln Trp Val Arg Leu Leu Lys
 245 250 255
 Ser Arg Tyr Pro Asp Phe Pro Ile Glu Lys Ala Ile Arg Asp Met Glu
 260 265 270
 Gln Ser Asn Phe Gln Leu Thr Lys Glu Asn Tyr Leu Tyr Pro Leu Ile
 275 280 285
 Lys Asn Tyr Ile Ala Lys Tyr Asn Ala Glu His Gly Ser Glu Glu Arg
 290 295 300
 Ala Arg Gln Gln Glu Lys Ile Leu Arg Thr Arg Arg Lys Thr Leu Glu
 305 310 315 320
 Leu Leu Gly Val Pro Val Lys Asp Gln Gln Glu Ile Leu Gln Leu Ala
 325 330 335
 Ser Val Ala Pro Leu Val Leu Asp Thr Ala Leu Lys Glu Thr Trp Gly
 340 345 350
 Asn Lys Lys Ile Lys Ser Pro Thr Met Phe Leu Leu Ser Arg Met Arg
 355 360 365
 Arg Ala Val Pro Ala
 370

<210> 8672

<211> 125

<212> PRT

<213> B.fragilis

<400> 8672

Ile Met Asp Thr Glu Ile Leu Arg Lys Lys Tyr Thr Leu Trp Ser Asn
 1 5 10 15
 Ile Ile Asp Leu Arg Ser Arg Gly Leu Asn Ile Thr Arg Thr Ala Lys
 20 25 30
 Arg Leu Gly Val Ser Arg Asp Thr Val Lys Arg Leu Gln Ser Leu Ser
 35 40 45

Ser Asp Glu Leu Phe Arg Lys Tyr Gln Glu Ser Arg Arg Cys Lys Leu
 50 55 60
 Gln Asn Tyr Glu Gln Ala Val Val Ser Leu Leu Phe Thr Phe Pro Ser
 65 70 75 80
 Thr Ser Ser Ser Arg Val His Asp Tyr Leu Lys Glu His Tyr Pro Asp
 85 90 95
 Phe Pro Asn Val Cys Asp Lys Thr Val Arg Asn Tyr Val Gln Phe Ile
 100 105 110
 Arg Lys Lys His His Leu Pro Phe Arg Ser Cys Arg Leu
 115 120 125

<210> 8673

<211> 303

<212> PRT

<213> B.fragilis

<400> 8673

Tyr Ile Gly Thr Leu Lys Ser Asp Ser Trp Leu His Arg Phe Leu His
 1 5 10 15
 Asn Gln Pro Leu Lys His Lys Leu Tyr Val Ile Ile Phe Glu Ser Asp
 20 25 30
 Thr Pro Ala Gly Lys Ala Phe Asp Val Thr Leu Ile Ile Cys Ile Leu
 35 40 45
 Leu Ser Ile Leu Leu Ala Ile Ile Glu Ser Leu Gln Gly Leu Pro Ser
 50 55 60
 Trp Leu Ser Thr Pro Phe Ile Val Leu Glu Tyr Leu Phe Thr Val Phe
 65 70 75 80
 Phe Thr Phe Glu Tyr Val Thr Arg Ile Tyr Cys Ser Pro Asn Pro Arg
 85 90 95
 Lys Tyr Ile Phe Ser Phe Phe Gly Ile Val Asp Leu Leu Ala Thr Leu
 100 105 110
 Pro Leu Tyr Leu Ala Phe Phe Leu Pro Gly Ala Arg Tyr Leu Leu Ile
 115 120 125
 Ile Arg Ala Phe Arg Ile Ile Arg Val Phe Arg Ile Phe Lys Leu Phe
 130 135 140
 Asn Phe Trp Leu Glu Gly Glu Arg Leu Leu Thr Ser Leu Arg Glu Ser
 145 150 155 160
 Ser Lys Lys Ile Ala Val Phe Phe Leu Phe Val Val Ile Leu Val Val
 165 170 175
 Ala Ile Gly Thr Leu Met Tyr Met Ile Glu Gly Thr Gln Pro Asn Thr
 180 185 190
 Gln Phe Asn Asn Ile Pro Asn Ser Ile Tyr Trp Ala Ile Val Thr Met
 195 200 205
 Thr Thr Val Gly Tyr Gly Asp Ile Thr Pro Ala Thr Ala Leu Gly Lys
 210 215 220
 Phe Leu Ser Ala Cys Val Met Leu Ile Gly Tyr Thr Ile Ile Ala Val
 225 230 235 240
 Pro Thr Gly Ile Val Ser Ala Ser Met Met Lys Glu Tyr Lys Lys Leu
 245 250 255
 Lys Asp Leu Gln Cys Pro Asn Cys His Lys Thr Gly His Glu Glu Asn
 260 265 270
 Ala Thr Tyr Cys Lys Tyr Cys Gly His Lys Leu Lys Asn Asp Glu Ile
 275 280 285
 Tyr Arg Gln Glu Asn Thr Ala Thr Asp Pro Asp Arg Thr Thr Ser
 290 295 300

<210> 8674

<211> 149

<212> PRT

<213> B.fragilis

<400> 8674

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Leu Tyr Val Thr Gly Ile Gly Ser Ile Gly Val Asp Thr Tyr Phe Arg
1          5          10          15
Ser Leu Lys Met His Met Lys Lys Phe Ile Leu Ile Thr Leu Thr Leu
          20          25          30
Leu Tyr Ala Val Val Ser Ser Gly Ile Thr Ile Asn Phe His Tyr Cys
          35          40          45
Met Gly Arg Leu Ala Asp Val Glu Trp Gly Ser Ala Ser Val Cys Ala
          50          55          60
Ser Cys Gly Glu Lys Lys Met Thr Ser His Cys Cys Lys Asp Glu Ala
65          70          75          80
His Tyr Val Lys Leu Ala Val Asp Gln Asp Val Asn His Val Pro Val
          85          90          95
Thr Asn Leu Leu Pro Ala Val Thr Glu Leu Leu Pro Val Met Tyr Ser
          100          105          110
Ala Phe Ile Pro Leu Glu Ala Glu Ser Leu Arg Arg Ser Val Ala Ser
          115          120          125
Phe Asn Phe Pro Pro Trp Gln Thr Asp Ile Pro Leu Phe Val His His
130          135          140
Cys Thr Tyr Leu Ile
145

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<210> 8675

<211> 88

<212> PRT

<213> B.fragilis

<400> 8675

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Met Arg Arg Thr Ser Asp Ile Pro Pro Thr Thr Thr Phe Pro Ile Asp
1          5          10          15
Pro Pro Pro Met Pro Asp Met Ser Leu Pro Glu Glu Leu Pro Ala Glu
          20          25          30
Thr Pro Gly Val Pro Ala Gly Ala Gly Leu Pro Ile Pro Pro Ile Pro
          35          40          45
Asp Met Pro Leu Pro Glu Glu Ser Ala Gly Gly Ile Glu Ala Thr Asp
50          55          60
Val Thr Glu Val Asp Glu Gly Ala Ala Cys Ala Asp Glu Ala Glu Lys
65          70          75          80
Arg Phe Ser Ala Asn Cys Ser Ser
          85

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<210> 8676

<211> 68

<212> PRT

<213> B.fragilis

<400> 8676

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Lys Ser Thr Thr Gly Ser Thr Ser Ile Tyr Lys Glu Thr Gly Asn Phe
1          5          10          15
Gly Lys Gly Lys Gly Leu Leu His Lys Arg Glu Thr Asn Ala Leu Ser
          20          25          30
Lys Gly Arg Lys Arg Pro Val Glu Arg Glu Trp Gln Thr Ser Pro Lys
          35          40          45
Gly Lys Ile Ala Arg Pro Lys Glu Gly Ser Gln Pro Ala Glu Glu Lys
50          55          60
Lys Pro Thr Ile
65

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<210> 8677
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8677

Asn	Arg	Arg	Thr	Asp	Ala	Asp	Ser	Arg	Trp	Gly	Thr	Tyr	Pro	Pro	Glu
1				5					10				15		
Val	Arg	Phe	Ser	Pro	Pro	Val	Pro	Tyr	Gln	Met	Phe	Thr	Glu	Arg	Lys
			20					25					30		
Met	Ser	Val	Val	Leu	Phe	Leu	Asn	Asp	Cys	Ser	Arg	Lys	Thr	Lys	Ile
		35					40					45			
Leu	Ser	Phe	Arg	Ile	Asn	Lys	Pro	Thr	Gln	Lys	Asn	Glu	Thr	Cys	Phe
		50				55					60				
Ala	Cys	Leu	Ser	Thr	Val	Lys	Lys	Tyr	Gly	Arg	Ser	His	Ala	Ala	Leu
65					70					75					80
Phe	Tyr	Ser	Arg	Leu											
				85											

<210> 8678
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 8678

Thr	Val	Asp	Ala	Ser	Arg	Gly	Glu	Trp	Arg	Tyr	Arg	Ile	Lys	Asp	Arg
1				5					10				15		
Asn	Pro	Leu	Asn	Asn	Ser	His	Met	Tyr	Phe	Ile	His	Ser	Ile	Gln	Thr
			20					25					30		
Tyr	Ala	Ser	Val	Asn	Arg	Lys	Gly	Ser	Glu	Leu	Gln	Glu	Tyr	Val	Leu
		35					40					45			
Gln	Leu	Lys	Asp	Ser	Leu	Ile	Lys	Asn	Arg	Glu	Phe	Leu	Asp	Asp	Leu
		50				55					60				
Lys	Glu	Glu	Leu	His	Cys	Arg	Ile	Gly	Glu	Leu	Asp	Ala	Lys	Tyr	Pro
65					70					75					80
Arg	Thr	Gln	Pro	Leu	His	Leu	Asp	Ala	Ala	Ser	Cys	Arg	Glu	Ile	Ile
				85					90					95	
Gln	Trp	Ile	Ile	His	Val	Lys	Gly	Lys	Pro	Asp	Asn	Leu	Ile	Cys	Ile
		100						105					110		
Ile	Ser	Ile	Thr	Lys	Val	Arg	Asn	Leu	Leu	Gly	Glu	Gly	Thr	Gly	Phe
		115					120					125			
Phe	Pro	Arg	Ala	Lys	Thr	Gly	Gly	Lys	Gly						
		130					135								

<210> 8679
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 8679

Asn	Ala	Leu	Ala	Met	Ile	Lys	Leu	Arg	Phe	Ser	Leu	Leu	Met	Ala	Leu
1				5					10				15		
Leu	Val	Val	Ala	Val	Ser	Val	Phe	Ala	Asp	Asn	Ala	Pro	Ala	Lys	Val
			20					25					30		
Gln	Thr	Ala	Leu	Lys	Lys	Met	Tyr	Pro	Lys	Ala	Asp	Gly	Ile	Ala	Trp
		35					40					45			
Ser	Gln	Asp	Gly	Gly	Tyr	Tyr	Cys	Ala	Asp	Phe	Met	Met	Asn	Gly	Tyr
		50					55				60				

Glu Lys Asn Val Trp Phe Asn Ala Gln Gly Gln Trp Gln Met Thr Gln
 65 70 75 80
 Thr Glu Trp Gly Asp Thr Asp Glu Leu Ser Ala Thr Val Tyr Asn Ala
 85 90 95
 Tyr Ala Ser Gly Pro Tyr Ser Gly Trp Gln Val Glu Asp Val Thr Tyr
 100 105 110
 Val Glu Phe Pro Lys Trp Gln Pro Ile Ile Val Ile Lys Val Gly Gln
 115 120 125
 Gln Asn Val Asp Ile Gln Tyr Gln Leu Phe Tyr Ser Ser Asn Gly Thr
 130 135 140
 Leu Leu Arg Thr Arg Asn Val Ser Tyr Met Asp Asp Ile Leu Gly Pro
 145 150 155 160
 Gly Thr Phe Leu

<210> 8680

<211> 61

<212> PRT

<213> B.fragilis

<400> 8680

Asn His Thr Ala Met Lys Thr Lys Phe Val Lys Thr Thr Asp Arg Lys
 1 5 10 15
 Gly Thr Tyr Ile Ile Glu Gly Ser Ser Asp Gly Gln Phe Phe Asn Ile
 20 25 30
 Lys Arg Phe Ile Cys Gln Val Gln Lys Gln Glu Thr Glu Lys Glu Thr
 35 40 45
 Gln Glu Leu Ala Asp Phe Ile Leu Ser Lys Leu Asn Ser
 50 55 60

<210> 8681

<211> 119

<212> PRT

<213> B.fragilis

<400> 8681

Ala Val Thr Ala Cys Arg Arg Glu Cys Glu Asn Lys Gln Thr Ile Lys
 1 5 10 15
 Asn Pro Ile Leu Ile Lys Met Glu Ile Arg Gly Lys Ile Ile Ala Val
 20 25 30
 Leu Pro Val Lys Asp Gly Ile Gly Lys Thr Thr Gly Asn Glu Trp Lys
 35 40 45
 Ser Arg Glu Phe Val Leu Glu Thr Glu Glu Ser Lys Pro Gln Ser Val
 50 55 60
 Cys Leu Gln Leu Met Asn Ala Asn Ile Glu Arg Tyr Ala Val Glu Val
 65 70 75 80
 Gly Met Thr Val His Val Lys Phe Asp Ile Ser Ala Arg Gln Trp Glu
 85 90 95
 Asn Arg Trp Phe Asn Thr Leu Thr Ala Trp Glu Val Thr Val Ile Lys
 100 105 110
 Gln Lys Glu Glu Gln Pro Ala
 115

<210> 8682

<211> 63

<212> PRT

<213> B.fragilis

<400> 8682

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Ser Asn Ala Ala Ser Leu Val Ile Leu Ala Met Ile Met Arg Phe Asn
1      5      10      15
Lys Gly Tyr His Leu Pro Ala Asn Val Gly Ile Lys Val Arg Asn Arg
20      25      30
Ser Leu Ser Asp Ile Asn Ser Ile Lys Leu Ile Thr Lys Ser His Lys
35      40      45
Lys Met Lys Met Tyr Pro Val Phe Cys Ala Leu Ile Ala Tyr Leu
50      55      60

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<210> 8683

<211> 450

<212> PRT

<213> B.fragilis

<400> 8683

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Thr Asn Asn Phe Leu Tyr Phe Cys Val Asp Ile Thr Phe Leu Arg Gln
1      5      10      15
Tyr Asn Arg Lys Leu Asn Ile Ile Met Ala Lys Gln Phe Lys Pro Glu
20      25      30
Thr Leu Cys Val Gln Ala Gly Trp Thr Pro Lys Lys Gly Glu Pro Arg
35      40      45
Val Leu Pro Ile Tyr Gln Ser Thr Thr Phe Lys Tyr Glu Thr Ser Glu
50      55      60
Gln Met Ala Arg Leu Phe Asp Leu Glu Asp Ser Gly Tyr Phe Tyr Thr
65      70      75      80
Arg Leu Gln Asn Pro Thr Asn Asp Ala Val Ala Ala Lys Ile Ala Ala
85      90      95
Leu Glu Gly Gly Val Gly Ala Met Leu Thr Ser Ser Gly Gln Ala Ala
100      105      110
Asn Phe Tyr Ala Ile Phe Asn Ile Cys Gln Ala Gly Asp His Phe Val
115      120      125
Cys Ser Ser Ala Ile Tyr Gly Gly Thr Phe Asn Leu Phe Gly Val Thr
130      135      140
Met Lys Lys Leu Gly Ile Asp Val Thr Phe Val Ser Pro Asp Ala Gly
145      150      155      160
Glu Glu Glu Ile Ser Ala Ala Phe Arg Pro Asn Thr Lys Ala Leu Phe
165      170      175
Gly Glu Thr Ile Ser Asn Pro Ser Leu Glu Val Leu Asp Ile Glu Lys
180      185      190
Phe Ala Arg Ile Ala His Ser His Gly Val Pro Leu Ile Val Asp Asn
195      200      205
Thr Phe Pro Thr Pro Ile Asn Cys Arg Pro Phe Glu Trp Gly Ala Asp
210      215      220
Ile Val Val His Ser Thr Thr Lys Tyr Met Asp Gly His Ala Thr Ser
225      230      235      240
Val Gly Gly Cys Ile Val Asp Ser Gly Asn Phe Asp Trp Glu Ala His
245      250      255
Ala Asp Lys Phe Pro Gly Leu Cys Thr Pro Asp Glu Ser Tyr His Gly
260      265      270
Leu Thr Tyr Thr Lys Ala Phe Gly Lys Gly Ala Tyr Met Thr Lys Ala
275      280      285
Thr Ala Gln Leu Met Arg Asp Leu Gly Ser Ile Gln Ser Pro Gln Asn
290      295      300
Ala Phe Leu Leu Asn Leu Gly Leu Glu Thr Leu His Leu Arg Met Pro
305      310      315      320
Gln His Cys Gly Asn Ala Gln Lys Val Ala Glu Tyr Leu Ala Gln Asn
325      330      335
Asp Lys Val Ala Trp Val Asn Tyr Cys Gly Leu Pro Gly Asn Lys Tyr
340      345      350

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Tyr Glu Leu Ala Gln Lys Tyr Met Pro Asn Gly Ser Cys Gly Val Ile
 355 360 365
 Ser Phe Gly Leu Lys Gly Gly Arg Glu Leu Ser Ile Lys Phe Met Asp
 370 375 380
 Ser Leu Lys Leu Ala Ala Ile Val Thr His Val Ala Asp Ala Arg Thr
 385 390 395 400
 Cys Val Leu His Pro Ala Ser His Thr His Arg Gln Leu Thr Asp Glu
 405 410 415
 Gln Leu Ile Glu Ala Gly Val Arg Pro Asp Leu Ile Arg Leu Ser Val
 420 425 430
 Gly Ile Glu Asn Ala Asp Asp Ile Ile Ala Asp Ile Glu Gln Ala Leu
 435 440 445
 Asn Ala
 450

<210> 8684

<211> 227

<212> PRT

<213> B.fragilis

<400> 8684

Lys Gly Asn Leu Arg Met Met Leu Asn Phe Asp Phe Val Leu Arg Leu
 1 5 10 15
 Leu Val Ala Gly Ile Leu Gly Ala Ile Ile Gly Leu Asp Arg Glu Tyr
 20 25 30
 Arg Ala Lys Glu Ala Gly Tyr Arg Thr His Phe Leu Val Ser Leu Gly
 35 40 45
 Ser Ala Leu Ile Met Ile Val Ser Gln Tyr Gly Phe Gln Glu Ile Ile
 50 55 60
 Lys Glu Asn Ser Val Thr Leu Asp Pro Ser Arg Val Ala Ala Gln Val
 65 70 75 80
 Val Ser Gly Ile Gly Phe Ile Gly Ala Gly Thr Ile Ile Phe Gln Lys
 85 90 95
 Gln Ile Val Arg Gly Leu Thr Thr Ala Ala Gly Ile Trp Ala Thr Ala
 100 105 110
 Gly Ile Gly Leu Ala Val Gly Ala Gly Met Tyr Val Ile Gly Ile Ala
 115 120 125
 Ala Met Val Leu Thr Leu Ile Gly Leu Glu Val Leu Ser Tyr Leu Phe
 130 135 140
 Lys Ser Ile Gly Met Lys Ser Ser Met Ile Thr Phe Ser Thr Asp Asn
 145 150 155 160
 Lys Gln Val Leu Lys Gly Val Ala Asp Arg Phe Asn Ser Lys Asp Tyr
 165 170 175
 Leu Ile Val Ser Tyr Gln Met Asp Thr Gln Lys His Gly Ser Ile Glu
 180 185 190
 Thr Tyr Gln Val Thr Met Ile Ile Lys Ser Lys Arg Asn Asn Asp Glu
 195 200 205
 Gly His Leu Leu Ser Leu Ile Gln Glu Phe Pro Glu Val Thr Val Glu
 210 215 220
 Arg Ile Glu
 225

<210> 8685

<211> 91

<212> PRT

<213> B.fragilis

<400> 8685

His Gln Ile Leu Met Thr Met Ser Asp Phe Asn Pro Arg Pro Ser Asp

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1           5           10           15
Lys Leu Thr Ala Ser Glu Arg Lys Glu Leu Asp Thr Ser Glu Phe Gly
20           25           30
Ile Pro Gln Leu Arg Glu Phe Pro Ile His Asp Ala Ala His Val Arg
35           40           45
Ala Ala Glu Ala Tyr Phe Arg Tyr Ala Pro Glu Glu Tyr Lys Ala Gln
50           55           60
Leu Ala Arg Asn Ile Leu Ala Lys Ala His Leu Leu Gly Val Asn Val
65           70           75           80
Lys Ser Pro Ala Ile Leu Glu Trp Ala Glu Lys
85           90

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<210> 8686

<211> 478

<212> PRT

<213> B.fragilis

<400> 8686

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Ala Pro Ala Tyr Pro Asn Asp Ser Cys Cys Arg Asn Ile Ser Ile Thr
1           5           10           15
Ile Met Ser Thr Lys His Ala Lys Ala Ala Glu Lys Phe Leu Glu Asn
20           25           30
Pro Val Met Ala Ala Trp His Asn Glu Thr Leu Trp Met Val Arg Ala
35           40           45
Lys Arg Asp Lys Met Ser Lys Glu Val Pro Glu Trp Glu Glu Leu Arg
50           55           60
Asp Lys Ala Cys Ala Leu Lys Leu Tyr Ser Asn Ser His Leu Glu Glu
65           70           75           80
Leu Leu Leu Glu Phe Glu Lys Asn Ala Thr Ala Asn Gly Ala Ile Val
85           90           95
His Trp Ala Lys Asp Ala Glu Glu Tyr Arg Ala Ile Val Tyr Glu Ile
100          105          110
Leu Ser Ser His Gly Val Lys His Phe Val Lys Ser Lys Ser Met Leu
115          120          125
Ala Glu Glu Cys Glu Leu Asn Pro Phe Leu Ile Glu Lys Gly Ile Asp
130          135          140
Val Val Glu Ser Asp Leu Gly Glu Arg Ile Leu Gln Leu Met Asn Leu
145          150          155          160
Ala Pro Ser His Ile Val Leu Pro Ala Ile His Ile Lys Arg Glu Gln
165          170          175
Val Gly Glu Leu Phe Glu Lys Glu Met Gly Thr Glu Lys Gly Asn Phe
180          185          190
Asp Pro Thr Tyr Leu Thr His Ala Ala Arg Lys Asn Leu Arg Asn Ile
195          200          205
Phe Leu Asn Ala Glu Ala Ala Met Thr Gly Ala Asn Phe Ala Val Ala
210          215          220
Ser Thr Gly Asp Ile Val Val Cys Thr Asn Glu Gly Asn Ala Asp Met
225          230          235          240
Gly Thr Ser Cys Pro Thr Leu Asn Ile Ala Ala Phe Gly Met Glu Lys
245          250          255
Ile Val Pro Asp Met Glu Ala Leu Gly Val Phe Thr Arg Leu Leu Ala
260          265          270
Arg Ser Ala Thr Gly Gln Pro Ile Thr Thr Tyr Thr Ser Gln Tyr Arg
275          280          285
Asn Pro Arg Glu Gly Gly Glu Tyr His Ile Ile Ile Val Asp Asn Gly
290          295          300
Arg Ser Ala Leu Leu Ala His Pro Asp His Ile Lys Thr Leu Asn Cys
305          310          315          320
Ile Arg Cys Gly Ala Cys Met Asn Thr Cys Pro Val Tyr Arg Arg Ser

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          325                      330                      335
Gly Gly Tyr Ser Tyr Thr Tyr Phe Ile Pro Gly Pro Ile Gly Ile Asn
          340                      345                      350
Leu Gly Met Ala His Asp Pro Glu Lys Tyr Tyr Asp Asn Leu Ser Ala
          355                      360                      365
Cys Ser Leu Cys Met Ser Cys Ser Asp Val Cys Pro Ala Lys Val Asp
          370                      375                      380
Leu Ala Glu Gln Ile Tyr Lys Trp Arg Gln Asp Leu Asp Lys Ile Gly
385                      390                      395                      400
Lys Ala Asn Thr Gly Lys Lys Ile Met Ser Gly Gly Met Lys Val Leu
          405                      410                      415
Met Asp His Pro Thr Leu Phe Asn Ala Ala Leu Trp Ala Ala Pro Val
          420                      425                      430
Val Asn His Leu Pro Arg Phe Met Lys Tyr Asn Asp Leu Asp Ala Trp
          435                      440                      445
Gly Lys Gly Arg Glu Leu Pro Lys Phe Ala Gly Glu Ser Phe Asn Glu
          450                      455                      460
Met Trp Lys Lys Asn Lys Val Gln Gly Lys Glu Glu Asn Lys
465                      470                      475

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<210> 8687

<211> 95

<212> PRT

<213> B.fragilis

<400> 8687

```

Lys Leu Leu Tyr Met Ser Phe Ser Gly Phe Val Phe Asp Met Ile Arg
1          5          10          15
Arg Asn Lys Glu Asn Arg Asp Leu Leu Thr Leu Arg Arg Glu Arg Met
          20          25          30
Lys Asp Leu Gln Gly Lys Met Tyr Arg Lys Gly Thr Leu Gln Asn Pro
          35          40          45
Asn Val Thr Leu Glu Glu Leu Glu Lys Ile Glu Lys Ala Thr Arg Glu
          50          55          60
Lys Glu Lys Ala Glu Thr Gln Tyr Tyr Leu Arg Ala Thr Leu Ile Phe
65          70          75          80
Leu Thr Val Thr Ala Ile Leu Ala Leu Ile Leu Trp Trp Ile Leu
          85          90          95

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<210> 8688

<211> 150

<212> PRT

<213> B.fragilis

<400> 8688

```

Val Ile Val His Lys Gln Leu Tyr Thr Asn Thr Ile Ala His Pro Pro
1          5          10          15
Ser Phe Trp His Glu Ala Cys Asn Ile Ile Ile Val Ser Lys Trp Leu
          20          25          30
Thr Glu Lys Gln Thr Ser Phe Ile Asn Leu Lys Leu Thr Ile Met Lys
          35          40          45
Lys Val Leu Val Ala Val Ala Leu Val Met Gly Leu Gly Ser Ser Val
          50          55          60
Ala Phe Ala Gln Asn Ala Glu Asn Ala Asn Ala Val Val Ala Thr Ala
65          70          75          80
Gln Ala Pro Gln Asp Glu Tyr Thr Lys Ile Glu Val Lys Asp Leu Pro
          85          90          95
Ala Ala Val Thr Glu Ala Leu Gly Lys Ala Tyr Pro Glu Ser Thr Ile
          100          105          110

```

Lys Glu Ala Ser Val Thr Thr Lys Glu Glu Gly Lys Phe Tyr Lys Val
 115 120 125
 Val Val Thr Gln Lys Asp Gly Thr Asp Val Thr Val Val Leu Asn Glu
 130 135 140
 Lys Gly Glu Glu Val Lys
 145 150

<210> 8689
 <211> 543
 <212> PRT
 <213> B.fragilis

<400> 8689
 Lys Lys Thr Gln Asn Val Met Lys Lys Asn Leu Leu Ile Leu Val Ala
 1 5 10 15
 Leu Leu Thr Ser Ala Thr Ile Ser Ala Gln Asn Gly Gly Thr Ile Met
 20 25 30
 Lys Lys Tyr Glu Asn Gln Leu Pro Gln Ala Gly Arg Gly Asn Val His
 35 40 45
 Val Ala Tyr Gln Gly Lys Ala Ile Asp Gln Met Ile Tyr Asp Phe Met
 50 55 60
 Glu Glu Gln Gly Ile Pro Gly Met Thr Leu Ala Ile Val Gln Ala Pro
 65 70 75 80
 Tyr Ile Pro Arg Val Ala Gly Tyr Gly Val Thr Asp Leu Glu Lys Gly
 85 90 95
 Asn Leu Ala Ala Ala Lys Thr Leu Trp Pro Ile Gly Pro Ile Ser Gln
 100 105 110
 Gly Tyr Ala Ala Val Ala Val Met Gln Leu Tyr Glu Lys Gly Lys Leu
 115 120 125
 Asp Leu Asn Asp Pro Ile Gly Lys Tyr Leu Lys Asp Ile Pro Glu Asn
 130 135 140
 Trp Lys Pro Ile Ser Ile Leu Gln Leu Met Gln His Ser Ser Gly Ile
 145 150 155 160
 Ala Asp Tyr Arg Asn Glu Lys Gly Phe Asp Val Ser Ala Asp Tyr Arg
 165 170 175
 Pro Glu Gln Leu Ile Glu Thr Val Ala Ala Ile Pro Leu Ala Phe Glu
 180 185 190
 Pro Gly Thr Asp Val Lys Gln Ser Ala Thr Asn Phe Leu Leu Thr
 195 200 205
 Ser Ile Ile Glu Lys Ala Gly Lys Met Ser Tyr His Asp Phe Val Lys
 210 215 220
 Lys Tyr Gln Ile Asp Tyr Leu Gly Leu Lys Gln Thr Phe Phe Gly Glu
 225 230 235 240
 Asp Leu Ala Lys Val Lys Gln Glu Asp Val Thr Leu Thr Gly Asn Val
 245 250 255
 His Gln Thr Phe Lys Lys Asp Lys Asp Tyr Ile Asn Pro Ser Glu Thr
 260 265 270
 Thr Thr Gly Tyr Val Glu Lys Glu Gly Arg Leu Val Ala Ala Pro Ala
 275 280 285
 Val Ser Pro Thr Ala Leu Lys Gly Phe Ser Asp Ile Trp Ala Ser Ala
 290 295 300
 Glu Asn Val Ser His Trp Asp Ile Gly Leu Ala Gly Ser Ala Leu Ile
 305 310 315 320
 Glu Lys Pro Glu Asn Arg Asp Met Val Tyr Lys Pro Thr Arg Leu Ala
 325 330 335
 Asn Gly Lys Val Val Pro Ala Met Ala Gly Trp Gln Phe Tyr Asn His
 340 345 350
 Asn Gly Leu Met Asp Ile Lys Gly Asn Val Ser Gly His Ser Ala Phe
 355 360 365

Leu Ser Arg Phe Thr Asp Ala Ser Glu Leu Val Cys Val Thr Leu Leu
 370 375 380
 Ala Asn Lys Glu Gly Val Asp Leu Thr Asn Leu Gly Arg Arg Ile Ala
 385 390 395 400
 Ala Ala Phe Asp Ser Asp Lys Met Gly Thr Gly Ala Asn Asp Asn Leu
 405 410 415
 Leu Tyr Thr Tyr Glu Ser Gln Phe Ser Val Pro Glu Thr Met Thr Arg
 420 425 430
 Ile Glu Gln Thr Leu His Thr Met Gly Val Pro Val Phe Ala Lys Phe
 435 440 445
 Asp His Gly Lys Asn Ala Glu Glu Val Gly Leu Gln Leu Arg Pro Asn
 450 455 460
 Gln Val Ile Val Phe Gly Ser Pro Lys Val Gly Thr Lys Leu Met Gln
 465 470 475 480
 Asp Asn Pro Ser Ile Ser Ile Glu Leu Pro Leu Lys Ile Ser Val Trp
 485 490 495
 Glu Asp Lys Asn Gly Ser Val Trp Ala Thr Phe Pro Gln Met Arg Thr
 500 505 510
 Met Ala Ala Glu Tyr Gly Leu Glu Ala Glu Pro Val Ile Gly Lys Met
 515 520 525
 Gln Glu Leu Leu Glu Lys Ile Val Ile Lys Gly Ala Ser Val Tyr
 530 535 540

<210> 8690

<211> 300

<212> PRT

<213> B.fragilis

<400> 8690

Ile Ser His Gln Thr Gln Tyr Asp Met Asn Lys Lys Ser Ser Leu Asn
 1 5 10 15
 Asn Leu Leu Tyr Ile Gln Glu His Arg Ser Cys Arg Asn Tyr Leu Glu
 20 25 30
 Lys Val Glu Asn Gly Phe Lys Tyr Ile Glu Phe Ser His Glu Glu Val
 35 40 45
 Ile Leu Glu Lys Glu Ile Ser Trp Asn Tyr Leu Leu Phe Val Leu Glu
 50 55 60
 Gly Glu Cys Ile Ile Asn Cys Asn Gln Phe Arg Glu Arg Leu Phe Gln
 65 70 75 80
 Ala Asn Cys Met Val Leu Leu Pro Lys Thr Ala Met Val Glu Ile Lys
 85 90 95
 Val Ile Ala Gly Thr Arg Leu Leu Ser Leu Ser Phe Asp Val Pro Leu
 100 105 110
 Asn Val Cys Asp Lys Phe Ile Leu Gln Ser Leu Thr Gly Leu Cys Arg
 115 120 125
 Lys Leu Asp Tyr Asn Phe Gln Ser Leu Ala Ile Arg Tyr Pro Leu Pro
 130 135 140
 Pro Tyr Leu Glu Ile Val Thr Tyr Cys Leu Thr Asn Lys Met Asp Cys
 145 150 155 160
 Gly His Phe His Thr Leu Leu Gln Gln Glu Leu Phe Phe Leu Leu Arg
 165 170 175
 Gly Phe Tyr Leu Lys Glu Glu Leu Ala Leu Leu Phe His Pro Ile Ile
 180 185 190
 Ser Ala Glu Leu Thr Phe Lys Asp Phe Val Ile Gly Asn Tyr Phe Lys
 195 200 205
 Val Ser Asn Val Asn Asp Leu Ile Ser Leu Ser Asn Met Cys Lys Ser
 210 215 220
 Ser Phe Tyr Cys Lys Phe Lys Glu Val Phe Gly Met Thr Ala Lys Gln
 225 230 235 240

Trp Leu Leu Lys Gln Arg Asn Thr His Ile Leu Asn Lys Val Met Thr
 245 250 255
 Ser Glu Thr Thr Val Gly Glu Leu Met Glu Glu Phe Arg Phe Glu Ser
 260 265 270
 Gln Ala His Phe Thr His Tyr Cys Lys Gln His Phe Asn Cys Thr Pro
 275 280 285
 Arg Glu Leu Ile Met Lys Tyr Gln Val Val Asn Gln
 290 295 300

<210> 8691
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8691
 Leu Asn Gly Gln Thr Ser Gly Glu Cys Asp Ile Val Arg Arg Trp Phe
 1 5 10 15
 Thr Trp Arg Ala Phe Arg Ser Glu Ser Pro Leu Tyr Cys Pro Asp Val
 20 25 30
 Ile Lys Asn Lys Leu Leu Arg Gly Leu Leu Lys Lys Ser Pro Phe Pro
 35 40 45
 Ser His Ile Ile Lys Lys Lys Asp Val Ile Leu His Ala Lys Lys
 50 55 60

<210> 8692
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 8692
 Asn Arg Phe Asn Cys Lys Thr Thr Gln Asp His Leu Ser Ile His Asn
 1 5 10 15
 His Tyr Arg Met Ala Lys Lys His Arg Lys Glu Ser Leu Asp Ala Leu
 20 25 30
 Phe Arg Glu Lys Val Leu Leu Glu Met Leu Lys Ile Ala Gly Val Gly
 35 40 45
 Met Trp Thr Tyr Ser Thr Glu Thr Gly Arg Leu Arg Tyr Ile Gly Phe
 50 55 60
 Ala Asp Thr Ile His Arg His Asp Glu Leu Gln Tyr Val Asp Pro Ala
 65 70 75 80
 Asp Tyr Leu Lys Leu Met Asn Gly Glu Asp Leu Gln Thr Val Thr Gln
 85 90 95
 Phe Met Ala Asp Ile His Ala Gly Arg Pro Pro Gln Glu Gly Ile Arg
 100 105 110
 Tyr Lys Ile His Gly Asn Gly Glu Asp Phe Tyr Leu Glu Asn His Val
 115 120 125
 Val Thr Cys Gln Pro Leu Gly Asn Gly Phe Tyr Tyr Leu Lys Gly Tyr
 130 135 140
 Val Lys Asn Ile Thr Ala Gln Val Met Glu Ala Asn Arg Leu Cys Ile
 145 150 155 160
 Glu Lys Glu Arg Thr Glu Gln Ala Asp Arg Leu Arg Ser Ala Phe Phe
 165 170 175
 Ala His Val Ser Arg Glu Leu Arg Gly Pro Leu Asn Arg Ile Glu Glu
 180 185 190
 Leu Ala Ser Gln Met Val His Ala Glu Ser Val Glu Glu Arg Glu Glu
 195 200 205
 Cys Phe His Arg Ile Gln Glu Asn Arg Arg Met Ala Met Lys Ile Ala
 210 215 220
 Asp Ala Leu His Ala Val Ser Gln Leu Pro Val Ser Thr Tyr Glu Pro

225 230 235 240
 Tyr His Ser Pro Met Gln Leu Cys Leu Ile Tyr Arg Asp Leu Leu Met
 245 250 255
 Glu Asn Gly Tyr Ser His Asn Pro Glu Asp Gly Glu Gln Glu Glu Asn
 260 265 270
 Ala Asn Phe Leu Ser Leu Leu Phe Ser
 275 280

<210> 8693

<211> 519

<212> PRT

<213> B.fragilis

<400> 8693

Asn Lys Ile Lys Ala Arg Ile Thr Met Glu Asp Ile Asn Lys Ala Tyr
 1 5 10 15
 Ala Thr Phe Ala Glu Arg Asp Arg Ile Ala Ser Leu Gly Gly Gly Ala
 20 25 30
 Ala Lys Ile Asp Ile Gln His Glu Ser Gly Lys Met Thr Ala Arg Glu
 35 40 45
 Arg Ile Asp Met Leu Leu Asp Lys Gly Thr Phe Val Glu Leu Asp Lys
 50 55 60
 Leu Met Val His Arg Cys Thr Asn Tyr Gly Met Asp Arg Asn Lys Ile
 65 70 75 80
 Pro Gly Asp Gly Val Val Ser Gly Tyr Gly Lys Ile Asp Gly Arg Gln
 85 90 95
 Val Phe Val Tyr Ala Tyr Asp Phe Thr Val Tyr Gly Gly Ser Leu Ser
 100 105 110
 Ala Ser Asn Ala Lys Lys Ile Val Lys Val Gln Gln Leu Ala Leu Lys
 115 120 125
 Asn Gly Ala Pro Ile Ile Ala Leu Asn Asp Ser Gly Gly Ala Arg Ile
 130 135 140
 Gln Glu Gly Ile Glu Ser Leu Ser Gly Tyr Ala Asp Ile Phe Tyr Gln
 145 150 155 160
 Asn Thr Met Ala Ser Gly Val Ile Pro Gln Ile Ser Ala Ile Leu Gly
 165 170 175
 Pro Cys Ala Gly Ala Cys Tyr Ser Pro Ala Leu Thr Asp Phe Ile
 180 185 190
 Phe Met Val Lys Glu Lys Ser His Met Phe Val Thr Gly Pro Asp Val
 195 200 205
 Val Lys Thr Val Ile His Glu Glu Val Ser Lys Glu Glu Leu Gly Gly
 210 215 220
 Ala Met Thr His Ser Ser Lys Ser Gly Val Thr His Phe Met Ala Asn
 225 230 235 240
 Thr Glu Glu Glu Leu Leu Met Ser Ile Arg Glu Leu Leu Ser Phe Leu
 245 250 255
 Pro Gln Asn Asn Met Asp Glu Ala Arg Lys Gln Asn Cys Thr Asp Asp
 260 265 270
 Val Asn Arg Glu Asp Ala Ser Leu Asn Ser Ile Val Pro Ser Asp Pro
 275 280 285
 Asn Val Pro Tyr Asp Met Lys Glu Ile Ile Glu Arg Val Val Asp Gly
 290 295 300
 Gly Tyr Phe Phe Glu Val Met Gln Asn Phe Ala Lys Asn Ile Ile Ile
 305 310 315 320
 Gly Phe Ala Arg Met Gly Gly Arg Ser Val Gly Ile Val Ala Asn Gln
 325 330 335
 Pro Ala Tyr Leu Ala Gly Val Leu Asp Ile Asp Ala Ser Asp Lys Ala
 340 345 350
 Ser Arg Phe Ile Arg Phe Cys Asp Cys Phe Asn Ile Pro Leu Ile Thr

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          355              360              365
Phe Glu Asp Val Pro Gly Phe Leu Pro Gly Tyr Thr Gln Glu Asn Asn
  370              375              380
Gly Ile Ile Arg His Gly Ala Lys Ile Val Tyr Ala Phe Ala Glu Ala
385              390              395              400
Thr Val Pro Lys Leu Thr Val Ile Thr Arg Lys Ala Tyr Gly Gly Ala
          405              410              415
Tyr Ile Val Met Asn Ser Lys Gln Thr Gly Ala Asp Val Asn Phe Ala
          420              425              430
Tyr Pro Ser Ala Glu Ile Ala Val Met Gly Ala Glu Gly Ala Val Asn
          435              440              445
Ile Leu Phe Arg Lys Ala Asp Ala Glu Thr Lys Ala Gln Glu Leu Asn
          450              455              460
Ala Tyr Lys Glu Lys Phe Ala Thr Pro Tyr Gln Ala Ala Glu Leu Gly
465              470              475              480
Phe Ile Asp Glu Ile Ile Leu Pro Lys Gln Thr Arg Lys Arg Leu Ile
          485              490              495
Gln Ala Leu Glu Met Thr Glu Asn Lys Met Gln Thr Asn Pro Pro Lys
          500              505              510
Lys His Gly Asn Met Pro Leu
          515

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<210> 8694

<211> 351

<212> PRT

<213> B.fragilis

<400> 8694

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Ile Lys Asn Lys Lys Glu Phe Lys Met Lys Arg Arg Ile Lys Ser Ala
1          5          10          15
Gln Ser Ile Leu Trp Val Leu Leu Leu Ile Leu Ser Ala Ser Cys Ser
          20          25          30
Lys Asp Glu Ile Gln Ile Val Asp Gln Asp Thr Ser Trp Gln Met Asp
          35          40          45
Asn Lys Tyr Ile Glu Glu Asp Ile Arg Glu Gln Leu Gly Ile Asp Pro
          50          55          60
Phe Thr Asp Leu Val Tyr Leu Gly Tyr Tyr Gly Asn Pro Tyr Thr Gln
65          70          75          80
Leu Glu Ala Ile Asn Asp Leu Val Asn Thr Thr Leu Val Gly Lys Asn
          85          90          95
Glu Leu Ser Phe Lys Val Lys Val Thr Lys Pro Tyr Lys Glu Asp Ile
          100          105          110
Lys Val Asn Leu Met Lys Glu Asp Lys Leu Val Thr Asp Phe Pro Glu
          115          120          125
Met Ala Glu Gly Ile Pro Leu Phe Pro Ser Glu Asn Cys Thr Phe Glu
          130          135          140
Gly Gly Val Leu Lys Ala Gly Glu Leu Glu Thr Thr Val Lys Leu Thr
145          150          155          160
Ile Lys Asp Val Glu Lys Leu Asn Asn Leu Ser Gly Tyr Val Met Ala
          165          170          175
Ile Lys Leu Thr Met Glu Gly Ser His Glu His Leu Ala Ile Ala Arg
          180          185          190
Thr Arg Ser Ala Tyr Phe Val Lys Leu Asn Leu Ser Ile Arg Leu Asp
          195          200          205
Asn Ile Asp Ser Ser Asn Lys Lys Ile Glu Gly Lys Gly Phe Asn Lys
          210          215          220
Glu Ile Ser Phe Lys Ser Asp Ile Arg Pro Asp Lys Leu Gly Ser Leu
225          230          235          240
Asn Asp Gly Asn Phe Thr Ala Asn Asn Trp Tyr Thr Ser Asn Ala Asn

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<210> 8695
<211> 1094
<212> PRT
<213> B.fragilis
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<400>	8695														
Asn	Ser	Phe	Lys	Ser	Met	Asn	Phe	Tyr	Arg	Leu	Lys	Ser	Ile	Phe	Phe
1				5					10					15	
Ile	Ile	Phe	Ser	Cys	Phe	Ile	Leu	Gln	Thr	Ala	Ala	Phe	Ala	Gln	Asn
			20					25					30		
Asn	Val	Lys	Ile	Thr	Ile	Lys	Lys	Lys	Asn	Ile	Thr	Leu	Gln	Glu	Ala
		35					40					45			
Leu	Arg	Glu	Val	Glu	Lys	Gln	Ser	Asp	Tyr	Leu	Ile	Ala	Phe	Asn	Glu
	50					55					60				
Ser	Lys	Leu	Glu	Lys	Thr	Lys	Arg	Val	Asn	Leu	Asn	Ile	Asn	Ala	Glu
65					70					75					80
Ser	Leu	Asp	Lys	Thr	Leu	Ala	Ser	Ile	Leu	Ser	Gly	Thr	Gly	Leu	Ser
				85					90					95	
Tyr	Lys	Ile	Lys	Asp	Lys	Tyr	Ile	Met	Ile	Ile	Pro	Gln	Ser	Lys	Val
			100					105					110		
Glu	Val	Glu	Ser	Lys	Lys	Leu	Ser	Gly	Ile	Val	Lys	Asp	Lys	Gly	
		115					120					125			
Asp	Pro	Leu	Ile	Gly	Val	Asn	Val	Ser	Phe	Lys	Gly	Ser	Pro	Thr	Gly
	130					135					140				
Thr	Val	Thr	Gly	Leu	Asp	Gly	Arg	Phe	Ser	Ile	Leu	Ala	Ala	Lys	Gly
145					150					155					160
Asn	Ile	Ile	Glu	Phe	Ser	Tyr	Val	Gly	Tyr	Thr	Thr	Gln	Tyr	Ile	Thr
				165					170					175	
Val	Gly	Asp	Ala	Ser	Ser	Leu	Thr	Val	Val	Leu	Glu	Glu	Asp	Ala	Lys
			180					185					190		
Ala	Leu	Asp	Glu	Val	Val	Val	Thr	Ala	Leu	Gly	Ile	Lys	Arg	Ala	Glu
		195					200					205			
Lys	Ala	Leu	Ser	Tyr	Ser	Val	Gln	Gln	Val	Lys	Ser	Asp	Ala	Ile	Asn
	210					215					220				
Asp	Val	Lys	Asp	Ala	Asn	Phe	Val	Asn	Gly	Leu	Thr	Gly	Lys	Val	Ala
225					230					235					240
Gly	Val	Ser	Ile	Asn	Arg	Ser	Ser	Ser	Gly	Ile	Gly	Gly	Ala	Thr	Arg
				245					250					255	
Val	Val	Met	Arg	Gly	Ala	Lys	Ser	Ile	Val	Gly	Asn	Asn	Asn	Val	Leu
		260						265					270		
Tyr	Val	Val	Asp	Gly	Met	Pro	Ile	Gly	Asn	Pro	Ser	Lys	Gly	Glu	Ile
		275					280					285			
Asn	Asn	Asp	Tyr	Ser	Thr	Pro	Gly	Gly	Gly	Glu	Gly	Ile	Ser	Asp	Phe
	290					295					300				
Asn	Pro	Glu	Asp	Ile	Glu	Ser	Leu	Ser	Ile	Leu	Thr	Gly	Pro	Ala	Ala

305					310					315				320	
Ala	Ala	Leu	Tyr	Gly	Ser	Ser	Ala	Ala	Asn	Gly	Val	Ile	Leu	Ile	Asn
				325					330					335	
Thr	Lys	Lys	Gly	Gln	Glu	Gly	Lys	Leu	Lys	Ile	Ser	Ile	Ser	Asn	Asn
			340					345					350		
Thr	Glu	Phe	Met	Thr	Pro	Tyr	Val	Met	Pro	Glu	Phe	Gln	Asn	Arg	Tyr
		355					360					365			
Gly	Asn	Ala	Lys	Gly	Ser	Tyr	Lys	Ser	Trp	Gly	Glu	Met	Leu	Gln	Gln
	370					375					380				
Pro	Ser	Thr	Phe	Arg	Pro	Lys	Asp	Phe	Phe	Lys	Thr	Gly	Ala	Asn	Ile
385					390					395					400
Met	Asn	Ala	Ala	Asn	Phe	Ser	Val	Gly	Asn	Lys	Asn	Asn	Gln	Thr	Phe
				405					410					415	
Val	Ser	Val	Ala	Thr	Thr	Asn	Ser	Thr	Gly	Ile	Ile	Pro	Asn	Asn	Glu
			420					425					430		
Tyr	Tyr	Arg	Tyr	Asn	Phe	Thr	Leu	Arg	Asn	Thr	Ala	Ser	Met	Leu	Asn
		435					440					445			
Asp	Lys	Leu	His	Leu	Asp	Leu	Gly	Ala	Ser	Tyr	Val	Leu	Gln	Gly	Asp
	450					455					460				
Gln	Asn	Met	Leu	Ser	Ala	Gly	Arg	Tyr	Phe	Asn	Pro	Leu	Val	Pro	Leu
465					470					475					480
Tyr	Leu	Phe	Pro	Arg	Gly	Glu	Asp	Phe	Glu	Ala	Val	Lys	Val	Tyr	Glu
				485					490					495	
Arg	Tyr	Asp	Thr	Asn	Arg	Lys	Phe	Pro	Ile	Gln	Glu	Trp	Ser	Tyr	Gly
		500						505					510		
Asp	Gln	Gly	Leu	Asn	Leu	Glu	Asn	Pro	Tyr	Trp	Ile	Val	Asn	Arg	Glu
		515					520					525			
Met	Phe	Val	Ser	Lys	Lys	Lys	Arg	Tyr	Met	Phe	Tyr	Ala	Asn	Val	Lys
	530					535					540				
Tyr	Asp	Ile	Leu	Ser	Trp	Leu	Asn	Ile	Ala	Gly	Arg	Ile	Arg	Val	Asp
545					550					555					560
Asn	Thr	Asn	Thr	Thr	Ser	Glu	Arg	Lys	Leu	His	Ala	Ser	Thr	Ile	Lys
				565					570					575	
Leu	His	Ala	Gln	Ser	Asp	Lys	Gly	Ala	Tyr	Asn	Arg	Ser	Met	Glu	Glu
		580						585					590		
Tyr	Gln	Gln	Thr	Tyr	Ala	Asp	Ile	Met	Leu	Asn	Val	Asn	Lys	Asn	Phe
		595					600					605			
Gly	Asn	Phe	Asn	Leu	Thr	Ala	Asn	Ala	Gly	Phe	Ser	Tyr	Glu	Asp	His
	610					615					620				
Leu	Thr	Thr	Gly	Met	Gly	Ile	Gly	Gly	Lys	Leu	Phe	Thr	Val	Pro	Asn
625					630					635					640
Leu	Phe	Ser	Ala	Tyr	Asn	Phe	Asp	Pro	Ala	Ser	Gly	Pro	Gly	Ser	Gln
				645					650					655	
Ser	His	Thr	His	Thr	Arg	Asn	Asn	Ser	Val	Phe	Val	Ser	Thr	Glu	Leu
		660						665					670		
Gly	Tyr	Lys	Ser	Met	Leu	Tyr	Leu	Thr	Leu	Thr	Gly	Arg	Gln	Glu	Trp
		675					680					685			
Ala	Ser	Gln	Leu	Val	Asn	Ser	Asp	Gln	Pro	Thr	Tyr	Phe	Tyr	Pro	Ser
	690					695					700				
Val	Gly	Val	Ser	Gly	Val	Ile	Ser	Glu	Met	Val	Ser	Leu	Pro	Lys	Phe
705					710					715					720
Ile	Ser	Phe	Trp	Lys	Met	Arg	Ala	Ser	Phe	Ala	Glu	Val	Gly	Gly	Pro
				725					730					735	
Ile	Asn	Tyr	Thr	Gly	Leu	Thr	Pro	Gly	Thr	Val	Thr	Asp	Pro	Met	Lys
			740					745					750		
Gly	Gly	Val	Ile	Asn	Pro	Ile	Ser	Val	Tyr	Pro	Phe	Pro	Asn	Phe	Lys
		755					760					765			
Ala	Glu	Gln	Thr	Lys	Ser	Tyr	Glu	Leu	Gly	Thr	Asn	Leu	Arg	Leu	Phe
	770					775						780			

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Asn Asn Lys Ile Asn Ile Asp Ala Thr Val Tyr Leu Thr Asp Thr Tyr
785          790          795          800
Asn Gln Thr Phe Leu Ser Ser Met Ser Pro Ala Ser Gly Tyr Ser Gly
          805          810          815
Phe Tyr Val Gln Ala Gly Lys Val Arg Asn Lys Gly Ile Glu Leu Ser
          820          825          830
Leu Gly Tyr Asn Asp Arg Phe Gly Lys Val Gly Tyr Ala Thr Asn Leu
          835          840          845
Thr Tyr Thr Ala Asn Arg Asn Lys Ile Met Lys Met Val His Asp Tyr
          850          855          860
Lys Asn Pro Ser Asp Gly Ser Leu Phe Ser Ile Thr Glu Leu Thr Leu
865          870          875          880
Gln Asp Lys Gly Gly Val Tyr Leu Arg Glu Lys Asp Ala Ile Gly Asp
          885          890          895
Val Tyr Val Lys Gly Ile Leu Ala Arg Gly Lys Asp Gly Lys Leu Ile
          900          905          910
Glu Glu Glu Gly Gly Tyr Lys Val Asp Arg Ser Gln Arg Ile Lys Ile
          915          920          925
Gly Ser Val Asn Pro Asp Phe Ser Ile Gly Trp Arg His Asn Val Thr
          930          935          940
Trp Asn Asn Ile Thr Leu Asp Leu Leu Phe Asn Gly Arg Phe Gly Gly
945          950          955          960
Ile Val Thr Ser Ser Thr Gln Ala Phe Leu Asp Asp Tyr Gly Val Ser
          965          970          975
Lys Asp Thr Tyr Lys Ala Arg Gln Asn Gly Gly Val Trp Val Asn Gly
          980          985          990
Thr Gln Tyr Asp Ala Glu Lys Tyr Tyr Thr Thr Ile Gly Gly Glu Gln
          995          1000          1005
Leu Met Ala Tyr Tyr Ala Tyr Lys Ala Thr Asn Ile Arg Leu Gln Glu
1010          1015          1020
Ala Ser Leu Ser Tyr Thr Leu Pro Gly Lys Trp Phe Ala His Val Ile
1025          1030          1035          1040
Asn Arg Leu Thr Val Ser Ala Ile Gly Arg Asn Leu Trp Met Ile Tyr
          1045          1050          1055
Asn Lys Ala Pro Phe Leu Ile Gln Ile Thr Ser Ser Thr Gly Thr Tyr
          1060          1065          1070
Asn Arg Gly Asp Val Phe Met Pro Pro Ser Leu Arg Ser Val Gly Phe
1075          1080          1085
Ser Val Lys Ile Glu Leu
1090

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<210> 8696

<211> 98

<212> PRT

<213> B.fragilis

<400> 8696

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Ser Thr Cys Phe Ala Val Arg Ser Ala Ser Glu Lys Thr Ala Met Leu
1          5          10          15
Val Ile Ser Ile Ser Arg Gln Glu Arg Ile Thr Leu Thr Ala Ile Ser
          20          25          30
Pro Arg Leu Ala Thr Lys Ile Leu Leu Ile Ile Phe Ile Ser Gln Leu
          35          40          45
Asn Ala Tyr Thr Tyr Ser Arg Phe Ser Thr Leu Arg Thr Tyr Val His
          50          55          60
Pro Met Lys Thr Gln Tyr Phe Tyr Asp Leu Gly Leu Asn Asn Asp Ala
65          70          75          80
Phe Phe Pro Asn Pro Arg Gly Glu Asn Ala Leu Ile His Glu Trp Gln
          85          90          95

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Val Phe

<210> 8697

<211> 179

<212> PRT

<213> B.fragilis

<400> 8697

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Met Ile Leu Asn Asn Glu Ser Asn Lys Lys Lys Lys Phe Glu Gln Phe
 1          5          10          15
Phe Ile Met Thr Tyr Pro Lys Val Lys Ala Phe Ala Trp Lys Leu Leu
      20          25          30
Lys Ser Glu Glu Asp Ala Glu Asp Ile Ala Gln Asp Ile Phe Ala Lys
      35          40          45
Leu Trp Thr Asn Pro Glu Ile Trp Glu Asn Gln Glu Thr Trp Asn Ser
      50          55          60
Tyr Ile Tyr Thr Met Val Arg Asn His Ile Tyr Asn Phe Leu Lys His
      65          70          75          80
Lys Ser Ile Arg Gln Thr Tyr Gln Glu Gln Cys Thr Lys Glu Glu Pro
      85          90          95
Ala Ile Ser Glu Thr Asp Ile His Asp Gln Leu Tyr Ala Lys Glu Ser
      100          105          110
Glu Leu Leu Ile Lys Leu Thr Ile Ala Asn Met Pro Glu Gln Arg Arg
      115          120          125
Lys Ile Phe Arg Met Ser Arg Thr Gln Glu Lys Ser Asn Gln Glu Ile
      130          135          140
Ala Asp Glu Leu Asp Ile Ser Ile Arg Thr Val Glu Arg His Ile Tyr
      145          150          155          160
Leu Ala Leu Ile Asp Leu Lys Lys Val Leu Leu Thr Leu Phe Phe Phe
      165          170          175

Tyr Leu Gly

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<210> 8698

<211> 769

<212> PRT

<213> B.fragilis

<400> 8698

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Pro Leu Leu Lys Arg Ile Ile Met Ala Lys Ile Thr Lys Glu Ala Ala
 1          5          10          15
Leu Leu Tyr His Ser Gln Gly Lys Pro Gly Lys Ile Glu Val Val Pro
      20          25          30
Thr Lys Pro Tyr Ser Thr Gln Thr Asp Leu Ser Leu Ala Tyr Ser Pro
      35          40          45
Gly Val Ala Glu Pro Cys Leu Glu Ile Glu Lys Asn Pro Gln Asp Ala
      50          55          60
Tyr Lys Tyr Thr Ala Lys Gly Asn Leu Val Ala Val Ile Ser Asn Gly
      65          70          75          80
Thr Ala Val Leu Gly Leu Gly Asp Ile Gly Ala Leu Ser Gly Lys Pro
      85          90          95
Val Met Glu Gly Lys Gly Leu Leu Phe Lys Ile Tyr Ala Gly Ile Asp
      100          105          110
Val Phe Asp Ile Glu Val Asn Glu Lys Asp Pro Asp Lys Phe Ile Glu
      115          120          125
Ala Val Lys Ala Ile Ala Pro Thr Phe Gly Gly Ile Asn Leu Glu Asp
      130          135          140
Ile Lys Ala Pro Glu Cys Phe Glu Ile Glu Arg Arg Leu Lys Glu Glu

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Val Arg Phe Phe Asn His Thr Pro Val Ile Ser Met Leu Ser Tyr Ser
 625 630 635 640
 Asn Phe Gly Ser Asp Gln Ala Gly Ser Pro Leu Lys Val His Glu Ala
 645 650 655
 Val Ala Tyr Met Gln Gln Glu Tyr Pro Glu Leu Ala Ile Asp Gly Glu
 660 665 670
 Met Gln Val Asn Phe Ala Met Asn Arg Glu Leu Arg Asp Ser Lys Tyr
 675 680 685
 Pro Phe Thr Arg Leu Asn Gly Lys Asp Val Asn Thr Leu Val Phe Pro
 690 695 700
 Asn Leu Ser Ser Ala Asn Ala Gly Tyr Gln Leu Leu Gln Ala Met Asp
 705 710 715 720
 Pro Asp Thr Glu Phe Ile Gly Pro Ile Gln Met Gly Leu Asn Lys Pro
 725 730 735
 Ile His Phe Thr Asp Ile Glu Ser Ser Val Arg Asp Ile Val Asn Ile
 740 745 750
 Thr Ala Val Ala Val Ile Asp Ala Ile Val Glu Lys Lys Lys Ala Asn
 755 760 765
 Lys

<210> 8699
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 8699
 Leu Ile Leu Lys Thr Lys Lys Asp Leu Ile Ser Trp Cys Phe Ser Ile
 1 5 10 15
 Phe Leu Leu Val Leu Lys Leu Asn Arg Ile Gln Thr Ile Met Gln Lys
 20 25 30
 Leu Asn Gln Gln Pro Asp Ile Cys Pro Tyr Phe Ser Pro Glu Phe Lys
 35 40 45
 Val Ile Pro Gln Tyr Ile Ile Met Lys Glu Gly Glu Cys Met Glu Leu
 50 55 60
 Asn Asn Arg Thr Thr Ser Phe Phe Ile Phe Ile Leu Ser Gly Glu Ile
 65 70 75 80
 Thr Ile Ser Phe Glu Gln Tyr Thr Asn Arg Ser Val Leu Glu Asn Glu
 85 90 95
 Met Phe Phe Leu Pro Lys Asn Asn Cys Phe Lys Trp Lys Ala Val Thr
 100 105 110
 Gln Thr Val Leu Ile Leu Thr Gly Tyr Asn Ala Thr Ile Phe Pro Cys
 115 120 125
 Thr Ser Val Arg Ala Arg Ile Leu Tyr Lys Ile Lys Ala Gly Val Lys
 130 135 140
 Phe Asp Cys Arg Gly Val Val Met Lys Asp Glu Val Lys Val Val Val
 145 150 155 160
 Asn Gln Met Lys His Tyr Leu Glu Ser Gly Ile Asn Cys His His Met
 165 170 175
 Tyr Ile Leu Lys His Lys Glu Leu Tyr Leu Met Phe Lys His Phe Tyr
 180 185 190
 Thr Tyr Glu Glu Ile Ile Gln Ile Phe Tyr Leu Ile Leu Gly Ser Asn
 195 200 205
 Pro Leu Phe Asn Glu Arg Val Leu Asp Asn Tyr Leu Lys Val Lys Thr
 210 215 220
 Val Lys Glu Leu Ala Gly Leu Leu Gly Tyr Gly Ile Lys Thr Phe Glu
 225 230 235 240
 Lys Leu Phe Arg Glu Asn Phe Asp Glu Ser Pro Tyr Lys Trp Met Gln
 245 250 255

Lys Arg Lys Ala Leu Gln Ile Gln Gln Arg Leu Met Asn Pro Ala Ile
 260 265 270
 Ser Leu Lys Gln Ile Met Tyr Glu Phe Lys Phe Ala Thr Ser Ser His
 275 280 285
 Phe Asn Phe Tyr Cys Lys Gln His Leu Gly Ala Ala Pro Met Gln Ile
 290 295 300
 Arg Asn Ser Asn Lys Asp Asp Asn Met Ser Thr Leu Pro
 305 310 315

<210> 8700

<211> 770

<212> PRT

<213> B.fragilis

<400> 8700

Thr Ser Ile Lys Arg Asn Glu Val Leu Thr Lys Tyr Thr Tyr His Thr
 1 5 10 15
 Met Ser His Leu Pro Thr Leu Ile Ala Asp Leu Ala Leu Ile Leu Met
 20 25 30
 Ser Ala Ser Ile Ile Thr Leu Leu Phe Lys Trp Leu Lys Gln Pro Leu
 35 40 45
 Val Leu Gly Tyr Ile Val Ala Gly Leu Leu Ala Gly Pro Tyr Val Arg
 50 55 60
 Ile Phe Pro Thr Val Gly Asp Met Glu Asn Ile Asn Thr Trp Ala Glu
 65 70 75 80
 Ile Gly Val Val Phe Leu Leu Phe Ala Leu Gly Leu Glu Phe Ser Phe
 85 90 95
 Lys Lys Leu Met Asn Val Gly Ser Ala Ala Phe Ile Thr Ala Thr Thr
 100 105 110
 Glu Val Ile Ser Met Leu Leu Ile Gly Phe Met Val Gly His Leu Leu
 115 120 125
 Gly Trp Ser Thr Met Asn Ser Val Phe Leu Gly Gly Met Leu Ser Met
 130 135 140
 Ser Ser Thr Thr Ile Ile Ile Lys Ala Phe Asp Asp Leu Gly Leu Arg
 145 150 155 160
 Ser Gln Arg Phe Thr Gly Ile Val Phe Gly Thr Leu Val Val Glu Asp
 165 170 175
 Leu Ile Ala Ile Leu Met Met Val Ile Leu Ser Thr Met Ala Val Ser
 180 185 190
 Lys Glu Phe Val Gly Glu Glu Leu Leu Met Ser Val Leu Lys Val Ala
 195 200 205
 Phe Phe Leu Ile Leu Trp Phe Leu Val Gly Ile Phe Ile Leu Pro Phe
 210 215 220
 Phe Leu Lys Lys Ala Lys Arg Leu Met Asn Asn Glu Thr Leu Leu Ile
 225 230 235 240
 Val Ser Leu Gly Leu Cys Leu Ala Met Val Val Leu Ala Thr Arg Thr
 245 250 255
 Gly Phe Ser Ala Ala Leu Gly Ala Phe Ile Met Gly Ser Ile Leu Ala
 260 265 270
 Glu Thr Val Glu Ala Glu His Ile Glu His Ile Ile Gln Pro Val Lys
 275 280 285
 Asp Leu Phe Gly Ala Ile Phe Phe Val Ser Val Gly Met Leu Val Asn
 290 295 300
 Pro Ser Val Leu Leu Gln Tyr Ala Trp Pro Val Val Ile Ile Thr Leu
 305 310 315 320
 Val Thr Leu Val Gly Lys Ser Ile Phe Ser Ser Leu Gly Val Leu Leu
 325 330 335
 Ser Gly Glu Pro Leu Lys Val Ser Val Lys Ser Gly Phe Ser Leu Ala
 340 345 350

Gln Ile Gly Glu Phe Ala Phe Ile Ile Ala Gly Leu Gly Ala Ser Leu
 355 360 365
 Lys Val Leu Asp Pro Phe Val Pro Pro Ile Ile Val Ala Val Ser Val
 370 375 380
 Ile Thr Thr Phe Thr Thr Pro Tyr Phe Ile Arg Leu Ala Asn Pro Phe
 385 390 395 400
 Ser Glu Trp Leu Tyr Lys Val Leu Ser Pro Arg Thr Arg Glu Phe Leu
 405 410 415
 Asp Arg Tyr Ala Ser Gly Lys Lys Thr Val Asn His Asp Ser Asp Trp
 420 425 430
 Lys Arg Leu Leu Lys Thr Ile Val Gly Arg Val Ile Ile Tyr Ser Val
 435 440 445
 Leu Leu Thr Ala Ile Trp Leu Leu Ser Val Gln Thr Val Tyr Pro Thr
 450 455 460
 Ile Asn Gly Met Phe Asp Ser Pro Gly Arg Trp Leu Ser Val Val Met
 465 470 475 480
 Cys Leu Leu Thr Leu Leu Leu Met Thr Pro Phe Leu Trp Ala Leu Val
 485 490 495
 Ser Asp Lys Tyr Asn Ser Pro Asp Val Phe Leu Lys Leu Trp Asn Asp
 500 505 510
 Asp Asn Tyr Asn His Gly Arg Leu Val Ala Leu Ile Leu Phe Arg Val
 515 520 525
 Ser Val Ala Val Phe Phe Ile Ala Gly Val Val Ile Ser Tyr Phe Ser
 530 535 540
 Leu Asn Tyr Gly Ile Gly Ile Val Ile Ala Val Ala Val Leu Gly Leu
 545 550 555 560
 Ile Leu Leu Leu Arg Glu Asn Leu Thr Gln Tyr Ser His Leu Glu Asn
 565 570 575
 His Phe Leu Thr Asn Leu Asn Gly Arg Glu Glu Ala Ala Arg Asn Arg
 580 585 590
 Tyr Pro Leu Lys Ser Arg Phe Asn Ser Glu Phe Ser Asp Lys Asp Ile
 595 600 605
 Glu Leu Thr Ser Val Trp Val Ser Pro Tyr Ser Ser Tyr Ile Gly Lys
 610 615 620
 Ser Leu Glu Glu Leu Pro Phe Arg Arg Glu Phe Gly Val Asn Val Val
 625 630 635 640
 Gly Ile Val Arg Gly Glu Arg Arg Ile Tyr Ile Pro Gln Ser Asp Glu
 645 650 655
 Cys Ile Tyr Pro Gln Asp Lys Leu Ile Val Val Gly Thr Asp Gly Gln
 660 665 670
 Leu Gln Lys Phe Arg Ser Glu Leu Asp Ile Arg Gln Asp Phe Pro Asp
 675 680 685
 Glu Lys Asn Val Arg Gln Glu Val Thr Leu His Ser Phe Thr Val Asp
 690 695 700
 Glu Glu Ser Pro Leu Leu Asn Lys Ser Ile Ala Gln Ser Arg Leu Gly
 705 710 715 720
 Lys Gln Tyr Asp Ser Leu Ile Val Ala Ile Glu Arg Glu Asp Glu Leu
 725 730 735
 Ile Ser Met Asn Gln Ser Thr Val Phe Arg Leu Gly Asp Leu Val Trp
 740 745 750
 Ile Val Gly Asp Arg Glu Lys Ile Arg Gln Leu Leu Met Arg Lys Lys
 755 760 765
 His Val
 770

<210> 8701

<211> 121

<212> PRT

<213> B.fragilis

<400> 8701

Tyr Arg Ile Asn Met Lys Thr Leu Phe Leu Gln Tyr Pro Ala Cys Ser
 1 5 10 15
 Thr Cys Gln Lys Ala Lys Lys Trp Leu Thr Glu Asn Asn Ile Glu Tyr
 20 25 30
 Thr Asn Arg Leu Ile Val Asp Asp Asn Pro Thr Val Glu Glu Leu Lys
 35 40 45
 Ala Trp Ile Pro Leu Ser Gly Leu Pro Val Lys Lys Phe Phe Asn Thr
 50 55 60
 Ser Gly Val Val Tyr Lys Glu Leu Lys Leu Ser Ser Lys Leu Pro Thr
 65 70 75 80
 Met Thr Glu Glu Glu Gln Ile Ala Leu Leu Ala Thr Asn Gly Lys Leu
 85 90 95
 Val Lys Arg Pro Leu Val Val Thr Glu Arg Phe Val Leu Val Gly Phe
 100 105 110
 Lys Pro Glu Glu Trp Glu Lys Leu Lys
 115 120

<210> 8702

<211> 68

<212> PRT

<213> B.fragilis

<400> 8702

Tyr Lys Ile Lys Tyr Leu Tyr Tyr Leu Leu Ile Arg Ile Glu Val Leu
 1 5 10 15
 Glu His Glu Ile Gln Phe Phe Met Phe Gln Asn Val His Met Met Thr
 20 25 30
 Val Tyr Ser Gly Leu Lys Ile Met Leu His Leu Ile His Tyr Tyr Phe
 35 40 45
 Asp Phe Val Leu His His Tyr Ser Thr Ala Ile Glu Leu His Ala Gly
 50 55 60
 Leu Tyr Phe Ile
 65

<210> 8703

<211> 277

<212> PRT

<213> B.fragilis

<400> 8703

Glu Leu Thr Lys Ala Thr Lys His Pro Ile Met Phe Gly Trp Phe Asn
 1 5 10 15
 Ala Trp Gln Pro Asp Gly Ala Gly Lys Tyr Pro Arg Leu Ser Leu Leu
 20 25 30
 Pro Asp Ser Met Asp Val Val Ser Ile Trp Gly Asn Trp His Ser Leu
 35 40 45
 Ser Glu Glu Lys Ile Lys Glu Leu Arg Ser Val Gln Ala Lys Gly Thr
 50 55 60
 Lys Val Ile Ile Gly Trp Ile Ile Glu Asp Ile Gly Asp Gln Ile Lys
 65 70 75 80
 Trp Gly Arg Asp Gln Trp Pro Ala Asp Asp Thr Gln Ala Ile Lys Glu
 85 90 95
 Tyr Ala Gln Ala Ile Val Asp Thr Ile Asn Lys Tyr Gly Tyr Asp Gly
 100 105 110
 Phe Asp Tyr Asp Tyr Glu Pro Ser Tyr Ala Ser Pro Phe Lys Pro Gly
 115 120 125
 Asn His Cys Gly Asn Leu Thr Ser Cys Ser Arg Asp Tyr Asn Lys Glu

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      130                      135                      140
Lys Glu Ile Leu Phe Met Lys Thr Met Arg Glu Leu Leu Gly Pro Asp
145                      150                      155                      160
Lys Leu Phe His Leu Asn Gly Ser Ile His Trp Leu Asp Pro Arg Ala
      165                      170                      175
Ala Gln Tyr Phe Asp Arg Phe Val Val Gln Ser Tyr Asn Gly Ser Ala
      180                      185                      190
Ser Ser Phe Glu Arg Trp Thr Asn Asp Ile Gln Asn Arg Leu Asn Ile
      195                      200                      205
Lys Pro Glu Gln Leu Val Phe Thr Glu Ser Phe Gln Asn Lys Pro Gly
      210                      215                      220
Ala Arg Ser Arg Phe Pro Gly Thr Tyr Ala Gly Tyr Val Ala Ser Lys
225                      230                      235                      240
Gln Gly Asn Val Gly Gly Ile Gly Val Phe His Ile Asn Glu Asp Ala
      245                      250                      255
Phe Glu Asp Glu Ala Tyr Val Asn Ile Arg Lys Ala Ile Ser Ile Met
      260                      265                      270
Asn Pro Pro Val Lys
      275

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<210> 8704

<211> 296

<212> PRT

<213> B.fragilis

<400> 8704

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Phe Thr Lys Lys Thr Tyr Phe Cys Arg Gln Asn Lys Glu His Asp Met
1      5      10      15
Glu Lys Arg Asn Pro Leu Thr Leu Thr Leu Asp Gln Pro Phe Val Ala
      20      25      30
Gly Thr Asp Asp Phe Ser Pro Phe Tyr Asn Arg Leu His Lys Leu Asn
      35      40      45
Cys Ala Ile Ile Leu Tyr Cys Arg Ala Gly Arg Gly Thr Met Ala Ile
      50      55      60
Asp Leu Lys Lys Tyr Glu Ile Thr Val Asn Thr Gln Val Val Leu Leu
65      70      75      80
Pro Gly Ala Val Ile Ser Leu Asp Glu Lys Ser Asp Asp Phe Arg Val
      85      90      95
Ser Phe Phe Ala Ser His Ile Glu Met Phe Arg Glu Ala Cys Ile Arg
      100      105      110
Phe Glu Pro Ser Phe Phe His Phe Ile Lys Glu Lys Pro Cys Tyr Thr
      115      120      125
Leu Pro Ser Glu Phe Thr Ala Pro Ile Asn Gly Leu Leu His Ala Thr
      130      135      140
Ser Ala Ile Tyr Ala Asp Thr Asp His Arg Phe Arg Asn Gln Ile Ala
145      150      155      160
Arg Asn His Leu Gln Ser Phe Leu Leu Asp Val Tyr Asp Lys Val His
      165      170      175
Arg Leu Phe Thr His Lys Glu Ile Glu Gly Gly Ser Arg Pro Asn Glu
      180      185      190
Leu Phe His Lys Phe Val Ala Leu Val His Glu Tyr Cys Cys Ser Gln
      195      200      205
Arg Asp Val Val Phe Tyr Ala Gly Lys Leu Cys Ile Ser Thr Lys Tyr
210      215      220
Leu Thr Ser Ile Cys Arg Ser Leu Thr Gly His Ser Ala Lys Lys Val
225      230      235      240
Ile Asp Asp Phe Thr Ala Leu Glu Ile Lys Val Leu Leu Gln Ser Thr
      245      250      255
Asp Leu Ser Ile Gln Glu Ile Ala Asp Arg Leu Asn Phe Pro Asp Gln

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260 265 270
 Ser Tyr Leu Gly Arg Tyr Phe Lys Arg His Glu Gly Val Ser Pro Met
 275 280 285
 Glu Tyr Arg Ala Glu Leu Ala Gly
 290 295

<210> 8705
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 8705
 Asn Ser Lys Lys Val Ile Met Leu Lys Ile Leu Val Thr Tyr Ala Val
 1 5 10 15
 Gln Gly Glu Phe Thr Glu Ile Lys Trp Pro Asp Val Glu Val Tyr Tyr
 20 25 30
 Val Arg Thr Gly Ile Gly Lys Val Lys Ser Ala Phe His Leu Ser Glu
 35 40 45
 Ala Ile Gln Gln Val Lys Pro Asp Ile Val Ile Asn Gln Gly Thr Ala
 50 55 60
 Gly Thr Ile Asn His Gln Val Gly Asp Val Phe Val Cys Arg His Phe
 65 70 75 80
 Val Asp Arg Asp Met His Lys Met Thr Gly Leu Gly Met Glu Tyr Arg
 85 90 95
 Ile Asp Ser Ser Glu Leu Leu Ala Ala Arg Gly Phe Cys Gln His Trp
 100 105 110
 Thr Glu Ser Ala Thr Cys Asn Thr Gly Asp Ser Phe Leu Thr Glu Leu
 115 120 125
 Thr Asp Ile Glu Gly Asp Val Val Asp Met Glu Ala Tyr Ala Gln Ala
 130 135 140
 Phe Val Cys Arg Ala Lys Glu Ile Pro Phe Ile Ser Val Lys Tyr Val
 145 150 155 160
 Ser Asp Val Ile Gly Gln Asn Ser Val Lys His Trp Glu Asp Arg Leu
 165 170 175
 Glu Asp Ala Arg Ala Gly Leu Ser His Phe Phe Asn Val Leu Lys Glu
 180 185 190
 Ser Ile

<210> 8706
 <211> 394
 <212> PRT
 <213> B.fragilis

<400> 8706
 Gln Arg Lys Lys Asn Pro Met Ile Ile Arg Thr Ile Leu Asp Thr Asp
 1 5 10 15
 Leu Tyr Lys Phe Thr Thr Ser Tyr Ala Tyr Ile Lys Leu Phe Pro Tyr
 20 25 30
 Ala Ile Gly Thr Phe Ser Phe Lys Asp Arg Asp Gly Thr Glu Tyr Ser
 35 40 45
 Asp Glu Phe Val Glu Arg Leu Arg Thr Glu Ile Asn Gln Leu Ser His
 50 55 60
 Val Thr Leu Thr Glu Lys Glu Leu Glu Tyr Met Ile Lys Asn Cys Arg
 65 70 75 80
 Phe Leu Pro Arg Val Tyr Trp Glu Trp Leu Ser Ser Phe Arg Phe Gln
 85 90 95
 Pro Glu Lys Ile Glu Ile Arg Leu Asp Glu Asn Arg Gln Leu His Ile
 100 105 110

Glu Val Asn Asp Tyr Leu Tyr Lys Ala Thr Leu Tyr Glu Val Pro Leu
 115 120 125
 Leu Ala Ile Val Ser Glu Ile Lys Asn Gln Ser Ser Gly Asn Val Ala
 130 135 140
 Asn Leu Glu Asp Ile Leu Tyr Lys Leu Ser Glu Lys Thr Glu Leu Ser
 145 150 155 160
 Asn Lys His Gln Leu Leu Phe Ser Glu Phe Gly Thr Arg Arg Arg Phe
 165 170 175
 Ser Phe Asp Val Gln Asn Gln Val Ile Gly His Leu Lys Gln Thr Ala
 180 185 190
 His Tyr Cys Ile Gly Thr Ser Asn Cys His Phe Ala Met Lys Tyr Gly
 195 200 205
 Met Lys Pro Met Gly Thr His Pro His Glu Trp Phe Met Phe His Gly
 210 215 220
 Ala Gln Phe Gly Tyr Lys His Ala Asn Tyr Met Ala Leu Glu Asn Trp
 225 230 235 240
 Val Asn Val Tyr Asp Gly Asp Leu Gly Ile Ala Leu Ser Asp Thr Tyr
 245 250 255
 Thr Ser Ala Ile Phe Leu Ser Asn Leu Ser Arg Lys Gln Ala Lys Leu
 260 265 270
 Phe Asp Gly Val Arg Cys Asp Ser Gly Asp Glu Phe Arg Phe Ile Asp
 275 280 285
 Gln Leu Thr Ala Arg Tyr Lys Glu Leu Gly Ile Asp Pro Thr Thr Lys
 290 295 300
 Thr Ile Val Phe Ser Asn Ala Leu Asp Phe Gly Lys Ala Leu Asp Ile
 305 310 315 320
 Gln Lys Tyr Cys Arg Gly Lys Ile Arg Cys Ser Phe Gly Ile Gly Thr
 325 330 335
 Asn Leu Thr Asn Asp Thr Gly Phe Lys Pro Ser Asn Ile Val Met Lys
 340 345 350
 Leu Ser Gln Cys Lys Met Asn Met Asn Gln Glu Trp Arg Glu Cys Val
 355 360 365
 Lys Leu Ser Asp Asp Ile Gly Lys His Ile Gly Ser Pro Glu Glu Val
 370 375 380
 Arg Ala Cys Leu Tyr Asp Leu Arg Leu Glu
 385 390

<210> 8707

<211> 228

<212> PRT

<213> B.fragilis

<400> 8707

Lys Gln Lys Lys Ile Met Glu Gly Ile Asn Thr Pro Phe Val Ile Asp
 1 5 10 15
 Glu His Thr Ala Ile Val Met Thr Asp Pro Gln Asn Asp Phe Leu Ser
 20 25 30
 Glu Asn Gly Leu Gly Trp Gly Ala Phe Gly Glu Asn Ile Gln Lys Asn
 35 40 45
 Gly Thr Val Glu Asn Leu Arg Arg Ile Phe Glu Val Ala Ala Ala Lys
 50 55 60
 Gly Met Leu Val Phe Ile Ser Pro His Tyr Tyr Tyr Lys His Asp His
 65 70 75 80
 Gln Trp Leu Phe Glu Gly Pro Ile Glu Lys Leu Met His Asp Thr Gly
 85 90 95
 Met Phe Glu Arg Arg Gly Gln Leu Thr Gly Glu Gly Phe Glu Gly Ser
 100 105 110
 Gly Ala Asp Trp Leu Asp Leu Tyr Lys Pro Tyr Ile Asn Glu Gly Thr
 115 120 125

Asn Ile Ile Val Thr Ala Pro His Lys Leu Tyr Gly Pro Glu Asn Asn
 130 135 140
 Asp Leu Ile Leu Gln Leu Arg Lys Arg Gly Val Asn Lys Val Val Val
 145 150 155 160
 Cys Gly Met Ser Gly Asn Leu Cys Ala Glu Ser His Leu Arg Glu Leu
 165 170 175
 Gln Glu Arg Gly Phe Glu Ala Ala Val Val Phe Asp Ala Thr Ala Ser
 180 185 190
 Ala Lys Leu Pro Gly Met Asp Ala Asp Thr Ala Ala Phe Ile Asn Phe
 195 200 205
 Thr Leu Leu Ala Glu Lys Val Tyr Thr Thr Asp Glu Phe Val Asn Glu
 210 215 220
 Met Arg Gln Arg
 225

<210> 8708

<211> 182

<212> PRT

<213> B.fragilis

<400> 8708

Phe Met Arg Lys Ile Asn Glu Ile Phe Tyr Ser Leu Gln Gly Glu Gly
 1 5 10 15
 Tyr His Thr Gly Thr Pro Ala Val Phe Ile Arg Phe Ser Gly Cys Asn
 20 25 30
 Leu Lys Cys Asp Phe Cys Asp Thr Arg His Glu Glu Gly Glu Met Met
 35 40 45
 Thr Asp Glu Asp Ile Val Asn Glu Ile Gly Lys Tyr Pro Ala Val Met
 50 55 60
 Val Ile Leu Thr Gly Gly Glu Pro Ser Leu Trp Ile Asp Asp Ala Phe
 65 70 75 80
 Ile Asp Leu Leu His Arg Ala Gly Lys Tyr Val Cys Ile Glu Thr Asn
 85 90 95
 Gly Thr Lys Pro Leu Pro Ala Ala Ile Asp Trp Val Thr Cys Ser Pro
 100 105 110
 Lys Gln Gly Val Asn Leu Ala Leu Asn Arg Met Asp Glu Val Lys Val
 115 120 125
 Val Tyr Gly Gly Gln Asn Ile Asp Val Tyr Glu Gln Leu Pro Ala Glu
 130 135 140
 His Phe Phe Leu Gln Pro Cys Ser Cys Asn Asn Thr Ala Glu Thr Val
 145 150 155 160
 Asp Cys Val Met Arg His Pro Lys Trp Arg Leu Ser Leu Gln Thr His
 165 170 175
 Lys Leu Ile Asn Ile Leu
 180

<210> 8709

<211> 366

<212> PRT

<213> B.fragilis

<400> 8709

Lys Arg Leu Lys Ile Met Lys Lys Lys Phe Thr Ile Phe Val Met Leu
 1 5 10 15
 Leu Ala Gly Ile Ile Tyr Thr Gly His Ala Gln Gly Val Gln Trp Ile
 20 25 30
 Tyr Gln Gln Lys Gln Glu Lys Lys Asn Met Lys Asn Leu Ser Glu Ile
 35 40 45
 Tyr Phe Ala Gly Gly Cys Phe Trp Gly Thr Asp His Phe Leu Lys Gln

50		55		60	
Ile Arg Gly Val Lys	Ser Thr Gln Val Gly Tyr	Ala Asn Gly Asn Ile			
65	70	75	80		
Ala Asn Pro Thr Tyr	Gln Gln Val Cys Thr Gly Lys Thr Asn Phe Ala				
	85	90	95		
Glu Thr Val Lys Val Glu Tyr Asn Pro Gln Glu Val Pro Leu Lys Leu					
	100	105	110		
Leu Ile Asp Leu Phe Phe Lys Thr Ile Asp Pro Thr Ser Leu Asn Arg					
	115	120	125		
Gln Gly Asn Asp Lys Gly Ser Gln Tyr Arg Ile Gly Ile Tyr Tyr Thr					
	130	135	140		
Asp Glu Val Asp Leu Pro Thr Ile Arg Thr Ala Ile Asp Glu Leu Ala					
	145	150	155	160	
Lys Glu Tyr Ser Lys Pro Ile Val Ile Glu Val Lys Pro Leu Ser Asn					
	165	170	175		
Phe Tyr Lys Ala Glu Glu Tyr His Gln Asp Tyr Leu Asp Lys Asn Pro					
	180	185	190		
Gly Gly Tyr Cys His Ile Asn Pro Ala Leu Phe Glu Leu Ala Lys Lys					
	195	200	205		
Ala Asn Ala Gln Ala Glu Gln Pro Gln Thr Asn Tyr Lys Lys Pro Asp					
	210	215	220		
Asp Ala Thr Leu Arg Ser Lys Leu Thr Pro Glu Gln Tyr Ala Val Thr					
	225	230	235	240	
Gln Lys Asn Ala Thr Glu Pro Ala Phe His Asn Glu Tyr Trp Asp Glu					
	245	250	255		
Lys Arg Asp Gly Ile Tyr Val Asp Ile Thr Thr Gly Glu Pro Leu Phe					
	260	265	270		
Ile Ser Thr Asp Lys Phe Asp Ser Gly Cys Gly Trp Pro Ser Phe Thr					
	275	280	285		
Lys Pro Ile Glu Lys Glu Val Ile Lys Glu Lys Met Asp Thr Ser His					
	290	295	300		
Gly Met Ile Arg Thr Glu Val Arg Ser Lys Thr Gly Asp Ala His Leu					
	305	310	315	320	
Gly His Val Phe Thr Asp Gly Pro Lys Glu Lys Gly Gly Leu Arg Tyr					
	325	330	335		
Cys Ile Asn Ser Ala Ser Leu Arg Phe Ile Pro Lys Glu Lys Met Lys					
	340	345	350		
Glu Glu Gly Tyr Gly Glu Tyr Leu Lys Leu Leu Pro Gln Lys					
	355	360	365		

<210> 8710

<211> 248

<212> PRT

<213> B.fragilis

<400> 8710

Tyr Ile Met Lys Val Gly Leu Phe Ile Pro Cys Tyr Ile Asn Ala Ile	
1	15
Tyr Pro Gln Val Gly Val Ala Ser Tyr Lys Leu Leu Lys Asn Leu Gly	
20	30
Val Asp Val Asp Tyr Pro Leu Asp Gln Thr Cys Cys Gly Gln Pro Met	
35	45
Ala Asn Ala Gly Phe Gln Asp Glu Ser Leu Lys Met Ala Ile Arg Phe	
50	60
Asp Asp Leu Phe Arg Lys Tyr Asp Tyr Ile Val Gly Pro Ser Ala Ser	
65	80
Cys Val Ala Phe Val Lys Glu Asn His Pro Gly Ile Leu Ala Lys Glu	
85	95
Gly His Gln Cys Gln Ser Ala Gly Lys Ile Tyr Asp Leu Cys Ala Phe	

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      100              105              110
Ile His Asp Val Ile Lys Pro Thr Lys Ile Pro Ala Arg Phe Pro His
      115              120              125
Lys Val Ser Ile His Asn Ser Cys His Gly Val Arg Glu Leu Phe Leu
      130              135              140
Ser Ala Pro Ser Glu Leu Asn Ile Pro Tyr Phe Asn Lys Leu Arg Asp
145              150              155              160
Leu Leu Gln Met Val Glu Gly Ile Glu Val Phe Glu Pro Ser His Val
      165              170              175
Asp Glu Cys Cys Gly Phe Gly Gly Met Phe Ala Val Glu Glu Gln Ala
      180              185              190
Val Ser Val Cys Met Gly Arg Asp Lys Ile Arg His His Met Glu Thr
      195              200              205
Gly Ala Glu Tyr Ile Thr Gly Ala Asp Ser Ser Cys Leu Met His Met
      210              215              220
Gln Gly Ile Ile Glu Arg Glu His Leu Pro Ile Arg Met Ile His Val
225              230              235              240
Val Glu Ile Leu Ala Ser Gln Leu
      245

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<210> 8711

<211> 405

<212> PRT

<213> B.fragilis

<400> 8711

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Asn Thr Met Lys Ser Ile Leu Leu Ser Val Ile Ser Phe Leu Leu Val
1      5      10      15
Met Asn Val Cys Gly Lys Asn Asp Val Asp Met Arg Thr Tyr Leu Lys
      20      25      30
Lys Val Leu Gly Asn Leu Gly Lys Ile Glu Ser Ala Ser Tyr His Glu
      35      40      45
Gln Ser Gln Ser Trp Gln Pro Gly Asp Thr Val Ala Ile Thr Asn Phe
      50      55      60
His Arg Phe Ile Lys Glu Tyr Thr Asn Pro Ser Asp Ser Thr Ile Gly
65      70      75      80
Ala Ser Tyr Val Cys Leu Asp Ala Lys Asp Thr Thr Arg Phe Glu Phe
      85      90      95
Gly Tyr Asp Gly Asn Val Arg Met Ile Ser Tyr His Glu His Lys Gly
      100      105      110
Ile Met Ile Asp Asp Phe Thr Thr Arg Ser Leu Pro Phe Arg Leu Val
      115      120      125
Ala Pro Pro Phe Phe Cys Tyr Thr Arg Asn Ile Ile Gly Tyr Ala Leu
      130      135      140
Ser Thr Gly Asp Ser Ile Thr Thr Glu Trp Lys Asp Leu Gly Glu Ala
145      150      155      160
Tyr Tyr Phe Lys Leu Val Ile His Glu Asp Arg Gln Val Glu Phe Phe
      165      170      175
Gly Lys Ala Tyr Tyr Ile Pro Lys Pro Pro Phe Asp Leu Gly Asp Pro
      180      185      190
Thr Ser Ile Tyr Glu Leu Trp Ile Ser Lys Ala Asp Gly Leu Pro Tyr
      195      200      205
Lys Met Arg Arg Glu Met Ser His Gln Ile Ser Ala Thr Thr Cys Ser
      210      215      220
Asp Val Val Leu Asn Gln Leu Ser Ile Ala Gly Leu Asn Leu Tyr Asp
225      230      235      240
Tyr Val Pro Gln Asp Tyr Glu Ile Arg Lys Tyr Gly Glu Gln Lys Lys
      245      250      255
Val Thr Gln Pro Ala Ala Thr Asp Leu Ile Gly Gln Lys Ala Pro Asp

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260 265 270
 Trp Met Leu Lys Asp Met Tyr Glu Lys Pro Val Ala Leu Ser Glu Phe
 275 280 285
 Lys Ser Lys Val Leu Leu Val Asn Leu Thr Gly Ile Gly Cys Gly Ala
 290 295 300
 Cys His Ala Ser Ile Pro Phe Leu Asn Gly Leu Lys Gly Lys Phe Asn
 305 310 315 320
 Ala Gly Glu Phe Glu Val Val Ser Ile Glu Thr Trp Gly Arg Glu Pro
 325 330 335
 His Ser Leu Arg Thr Tyr Ala Asp Lys Asn Gln Ile Asn Tyr Ser Phe
 340 345 350
 Leu Cys Gly Asp Glu Gly Ile Val Lys Ser Tyr Arg Thr Tyr Gly Ala
 355 360 365
 Ala Pro Leu Phe Phe Ile Leu Asp Gln Asp Arg Val Ile Arg Lys Val
 370 375 380
 Ile Arg Gly Tyr Arg Met Gly Arg Thr Asp Glu Glu Ile Thr Asp Ala
 385 390 395 400
 Ile Lys Ala Leu Leu
 405

<210> 8712

<211> 477

<212> PRT

<213> B.fragilis

<400> 8712

Thr Ser Met Lys Lys Leu Ile Ile Ser Leu Ala Ala Ile Leu Ala Leu
 1 5 10 15
 Ser Ser Cys Gly Ile Tyr Ser Lys Tyr Lys Pro Val Thr Lys Ile Pro
 20 25 30
 Asp Gly Leu Tyr Gly His Glu Gly Thr Asp Thr Pro Gly Leu Thr Ser
 35 40 45
 Ala Asp Pro Glu Ile Gln Arg Ser Asp Thr Ala Ala Asn Phe Gly Asn
 50 55 60
 Leu Ser Trp Arg Glu Val Phe Thr Asp Pro Tyr Leu Arg Val Leu Ile
 65 70 75 80
 Asp Ser Ala Leu Val Arg Asn Thr Asp Leu Arg Thr Ala His Leu Arg
 85 90 95
 Val Lys Glu Ala Glu Ala Thr Leu Leu Ser Ala Arg Leu Ser Tyr Leu
 100 105 110
 Pro Ala Phe Ser Leu Ser Pro Gln Gly Thr Ala Ser Ser Phe Asp Gly
 115 120 125
 Gly Lys Ala Thr Gln Thr Tyr Ser Leu Pro Val Ser Ala Ser Trp Glu
 130 135 140
 Ile Asp Ile Phe Gly Arg Leu Thr Asn Ala Lys Arg Arg Ala Gln Ala
 145 150 155 160
 Val Val Ala Gln Ser Arg Asp Tyr Glu Gln Ala Val Gln Thr Gln Leu
 165 170 175
 Ile Ala Ala Val Ala Asn Asn Tyr Phe Thr Leu Leu Met Leu Asp Ala
 180 185 190
 Gln Ile Glu Ile Ser Thr Ala Thr Glu Ala Ala Trp Lys Glu Ser Val
 195 200 205
 Ala Thr Thr Arg Ala Met Lys Ala Ala Gly Met Val Thr Glu Ala Ala
 210 215 220
 Leu Ser Gln Thr Glu Ala Thr Tyr Tyr Asn Ile Cys Thr Thr Leu Leu
 225 230 235 240
 Asp Leu Gln Glu Gln Leu Asn Gln Ala Glu Asn Ala Leu Ser Leu Leu
 245 250 255
 Leu Ala Asp Val Pro His Arg Ile Pro Arg Gly Arg Leu Ala Asp Gln

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      260      265      270
Gln Leu Pro Glu Asn Leu Ser Val Gly Val Pro Leu Gln Ile Leu Ser
      275      280      285
Asn Arg Pro Asp Val Arg Ser Ala Glu Gln Ser Leu Ala Gln Ala Phe
      290      295      300
Tyr Thr Thr Asn Ala Ala Arg Ser Ala Phe Tyr Pro Ser Ile Thr Leu
305      310      315      320
Ser Gly Ser Ala Gly Trp Thr Asn Ser Ala Gly Ala Met Ile Val Asn
      325      330      335
Pro Gly Lys Phe Leu Ala Thr Ala Val Ala Ser Leu Thr Gln Pro Leu
      340      345      350
Phe Asn Arg Gly Ala Asn Ile Ala Gln Leu Arg Ile Ala Lys Ala Gln
      355      360      365
Gln Glu Glu Ala Arg Leu Ser Phe Glu Gln Thr Leu Leu Asn Ala Gly
      370      375      380
Ser Glu Val Asn Asn Ala Leu Val Gln Tyr Gln Thr Ala Arg Asp Lys
385      390      395      400
Ser Ala Tyr Phe Asn Arg Gln Val Ala Ser Leu Glu Asn Ala Ala Arg
      405      410      415
Ser Thr Gln Leu Leu Met Lys His Gly Asn Thr Thr Tyr Leu Glu Val
      420      425      430
Leu Thr Ala Gln Gln Thr Leu Leu Asn Ala Gln Leu Ser Gln Val Ala
      435      440      445
Asn Arg Phe Thr Glu Ile Gln Gly Val Ile Thr Leu Tyr Gln Ala Leu
      450      455      460
Gly Gly Gly Arg Glu Thr Ala Ser Gly Glu Arg Asn Ser
465      470      475

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<210> 8713

<211> 320

<212> PRT

<213> B.fragilis

<400> 8713

```

Asn Lys Met Lys Asp Leu Leu Asp Lys Ile Phe Pro Thr Leu Ser Asp
1      5      10      15
Glu Leu Ile Ile Val Ile Ser Leu Ile Ile Gly Leu Leu Val Thr Ala
      20      25      30
Ser Leu Ile Leu Phe Leu Val Lys Lys Ile Phe Pro Lys Thr Asn Ile
      35      40      45
Ser Glu Leu Ala Ala Arg Thr Arg Ser Trp Trp Ile Met Ala Gly Met
      50      55      60
Phe Ile Gly Ala Val Phe Ile Ser Tyr Asn Ile Ser Tyr Phe Phe Leu
65      70      75      80
Ala Phe Leu Ser Phe Ile Ala Phe Arg Glu Leu Tyr Ser Val Leu Gly
      85      90      95
Phe Arg Glu Ala Asp Arg Gly Ala Leu Phe Trp Gly Ile Leu Ala Ile
      100      105      110
Pro Ile Gln Tyr Tyr Leu Ala Tyr Leu Ala Trp Tyr Gly Ala Phe Ile
      115      120      125
Ile Phe Ile Pro Val Val Met Phe Leu Val Leu Pro Leu Arg Leu Val
      130      135      140
Leu Lys Gly Asp Thr His Gly Ile Thr Lys Ser Met Ala Leu Leu Gln
145      150      155      160
Trp Ile Leu Met Leu Ser Val Phe Gly Ile Ser His Leu Ala Tyr Leu
      165      170      175
Leu Ser Leu Pro Glu Leu Pro Gly Phe Ser Ser Gly Gly Arg Gly Leu
      180      185      190
Leu Leu Phe Leu Val Phe Leu Thr Glu Ile Asn Asp Val Met Gln Phe

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      195              200              205
Ile Trp Gly Lys Leu Leu Gly Arg His Lys Ile Leu Pro Lys Ile Ser
  210              215              220
Pro Asn Lys Thr Trp Glu Gly Phe Leu Gly Gly Val Ile Ser Thr Thr
  225              230              235              240
Val Ile Gly Tyr Phe Leu Gly Phe Leu Thr Pro Leu Ser Ala Pro Asn
      245              250              255
Val Ile Leu Val Ser Ala Leu Ile Ala Ile Ala Gly Phe Ser Gly Asp
      260              265              270
Val Val Ile Ser Ala Ile Lys Arg Asp Lys Gly Ile Lys Asp Met Gly
      275              280              285
Asn Ser Ile Pro Gly His Gly Gly Val Phe Asp Arg Ile Asp Ser Leu
      290              295              300
Ala Tyr Thr Ala Pro Val Phe Phe His Leu Val Tyr Tyr Ile Ala Tyr
  305              310              315              320

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<210> 8714

<211> 443

<212> PRT

<213> B.fragilis

<400> 8714

```

Lys Leu Met Lys Thr Asp Leu Ile Tyr Gly Ile Glu Asp Arg Pro Pro
  1              5              10              15
Phe Lys Asp Ala Leu Phe Ala Ala Leu Gln His Leu Leu Ala Ile Phe
      20              25              30
Val Ala Ile Ile Thr Pro Pro Leu Ile Ile Ala Ser Ala Leu Lys Leu
      35              40              45
Asp Val Glu Lys Thr Gly Phe Leu Val Ser Met Ser Leu Phe Ala Ser
      50              55              60
Gly Val Ser Thr Phe Ile Gln Cys Arg Arg Phe Gly Pro Ile Gly Ala
      65              70              75              80
Lys Leu Leu Cys Ile Gln Gly Thr Ser Phe Ser Phe Ile Gly Pro Ile
      85              90              95
Ile Ala Thr Gly Leu Val Gly Gly Leu Pro Leu Ile Phe Gly Val Cys
      100              105              110
Met Ala Ala Ala Pro Ile Glu Met Ile Ile Ser Arg Thr Phe Lys Tyr
      115              120              125
Met Arg Asn Ile Ile Thr Pro Leu Val Ser Gly Ile Val Val Leu Leu
      130              135              140
Ile Gly Leu Ser Leu Ile Lys Val Gly Ile Ile Ser Cys Gly Gly Gly
      145              150              155              160
Tyr Thr Ala Met Asp Asn Gly Thr Phe Ala Ser Trp Glu Asn Leu Ser
      165              170              175
Ile Ala Gly Ala Val Leu Leu Ser Val Leu Phe Phe Asn Arg Cys Lys
      180              185              190
Asn Lys Tyr Leu Arg Met Ser Ser Ile Val Leu Gly Leu Cys Leu Gly
      195              200              205
Tyr Gly Leu Ala Phe Val Leu Gly Lys Val Asp Met Ser Ala Leu Asn
      210              215              220
Val Glu Met Leu Met Ser Phe Asn Ile Pro Gln Pro Phe Lys Tyr Gly
      225              230              235              240
Leu Asp Phe Asn Val Ser Ser Phe Ile Ala Ile Gly Leu Val Tyr Met
      245              250              255
Ile Thr Ala Ile Glu Ala Thr Gly Asp Val Thr Ala Asn Ser Met Ile
      260              265              270
Ser Gly Leu Lys Ile Glu Gly Asp Asp Tyr Leu Lys Arg Val Ser Gly
      275              280              285
Gly Val Met Ala Asp Gly Phe Asn Ser Phe Leu Ala Gly Ile Phe Asn

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<210> 8715
<211> 252
<212> PRT
<213> B.fragilis
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<400> 8715																
Asn	Met	Lys	Asn	Tyr	Leu	Phe	Glu	Val	Cys	Thr	Asn	Ser	Val	Glu	Ser	
1				5					10					15		
Cys	Ile	Ala	Ala	Gln	Glu	Gly	Gly	Ala	Asn	Arg	Val	Glu	Leu	Cys	Ala	
			20					25					30			
Gly	Ile	Pro	Glu	Gly	Gly	Thr	Thr	Pro	Ser	Tyr	Gly	Glu	Ile	Ala	Met	
			35					40					45			
Ala	Arg	Glu	Val	Leu	Thr	Thr	Thr	Arg	Leu	His	Val	Ile	Ile	Arg	Pro	
			50				55				60					
Arg	Gly	Gly	Asp	Phe	Leu	Cys	Ser	Pro	Val	Glu	Val	Lys	Thr	Met	Leu	
65					70					75					80	
Lys	Asp	Ile	Glu	Met	Ala	Arg	Gln	Leu	Gly	Ala	Asp	Gly	Val	Val	Phe	
				85					90					95		
Gly	Cys	Leu	Thr	Thr	Asn	Gly	Gly	Ile	Asp	Val	Pro	Val	Met	Lys	Gln	
			100					105					110			
Leu	Met	Glu	Ala	Ser	Lys	Gly	Leu	Ser	Val	Thr	Phe	His	Arg	Ala	Phe	
			115				120					125				
Asp	Val	Cys	Arg	Asp	Ala	Ser	Glu	Ala	Leu	Glu	Gln	Ile	Ile	Asp	Leu	
			130			135					140					
Gly	Cys	Asp	Arg	Ile	Leu	Thr	Ser	Gly	Gln	Gln	Ala	Thr	Ala	Glu	Leu	
145					150					155					160	
Gly	Ile	Pro	Leu	Leu	Lys	Glu	Leu	Arg	Glu	Arg	Ala	Asn	Gly	Arg	Ile	
				165					170					175		
Thr	Leu	Leu	Ala	Gly	Cys	Gly	Val	Asn	Glu	Lys	Asn	Ile	Cys	Arg	Ile	
			180					185					190			
Ala	Lys	Glu	Thr	Gly	Ile	Gln	Glu	Phe	His	Phe	Ser	Ala	Arg	Glu	Ser	
			195				200					205				
Ile	Lys	Ser	Gly	Met	Glu	Tyr	Lys	Asn	Glu	Ala	Val	Ser	Met	Gly	Gly	
			210			215					220					
Thr	Val	His	Ile	Ser	Glu	Tyr	Glu	Arg	Asn	Val	Thr	Thr	Val	Lys	Arg	
225					230					235					240	
Val	Lys	Asp	Thr	Ile	Glu	Ser	Ile	Thr	Ser	Ser	Leu					
				245					250							

<210> 8716
 <211> 291
 <212> PRT
 <213> B.fragilis

<400> 8716

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Thr Arg Arg Asn Ala Cys Ile Arg His Ala Met Thr Ser Thr Ser Phe
1          5          10          15
Cys Arg Lys Ser Ser Ala Arg Gln Ala Gly Gly Lys Cys Glu Glu Pro
          20          25          30
Ala Asn Gly Thr Phe Asn Arg Pro Asp Leu Arg Thr Asp Asn Lys Thr
          35          40          45
Ile Met Lys Gln Glu Asn Asp Ile Pro Asp Lys Ile Leu Glu Arg Ile
          50          55          60
Arg Lys Leu Ile Arg Leu Lys Glu Ser Thr Thr Ser Glu Gly Glu Ala
65          70          75          80
Lys Ala Ala Ala Thr His Val Asn Arg Leu Leu Lys Glu Tyr Asn Leu
          85          90          95
Ser Leu Leu Asp Val Asn Glu Lys Arg Pro Glu Thr Val Phe Glu Ile
          100         105         110
Arg Glu Ser Gly Ala Ile Ser Tyr Lys Asp Ser Phe Gly Asn Tyr Trp
          115         120         125
Lys Arg Asp Leu Leu Arg Val Leu Cys Glu Tyr Asn Tyr Cys Arg Met
          130         135         140
Leu Arg Tyr Arg Gly Thr Thr Asp Met Leu Ile Val Gly Thr Gln Glu
145         150         155         160
Asn Ile Ala Ala Val Thr Val Leu Tyr Asp Tyr Leu Arg Thr Thr Phe
          165         170         175
Arg Arg Leu Ala Asp Lys Arg His Met Glu Tyr Val Ser Ile Lys Arg
          180         185         190
Gly Tyr Tyr Arg Thr Glu Lys Tyr Arg Lys Lys Tyr Ile Arg Ser Tyr
          195         200         205
Leu Glu Gly Val Thr Pro Gly Leu Arg Asp Gln Phe Glu Ala Met Arg
          210         215         220
Ser Thr Ser Ala Glu Glu Val Arg Glu Thr Ala Leu Val His Cys His
225         230         235         240
Asn Ala Leu Ile Glu Arg Tyr Leu Glu Thr Ile Gly Thr Cys Ser Ala
          245         250         255
Lys Val Gln Pro Arg Lys Thr Lys Thr Asp Tyr Ser Ala Tyr His Ser
          260         265         270
Gly Met Asp Asp Gly Arg Ser Ile Ser Leu His Arg Gln Ile Asn Gly
          275         280         285
Gly Asn Val
          290

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<210> 8717
 <211> 200
 <212> PRT
 <213> B.fragilis

<400> 8717

```

Ser Ala Gly Lys Gly Gly Lys Gln Met Ser Ser Lys Glu Asp Ile Leu
1          5          10          15
Ala Ser Ile Arg Lys Asn Thr Lys Asn Arg Tyr Glu Tyr Pro Asp Trp
          20          25          30
Gln Ile Asn Ala Thr Val Tyr Pro Asp Val Val Ala Lys Phe Cys Glu
          35          40          45
Met Ser Phe Ala Val Gly Gly Glu Ala Ile Val Leu Gly Glu Gly Glu
          50          55          60

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Asp Ile Asn Ala Val Ile Arg Arg Thr Tyr Pro Asp Ala Gly Ser Ile
 65 70 75 80
 Ala Ser Asp Leu Glu Glu Ile Thr Cys Ala Thr Phe Asn Pro Asp Leu
 85 90 95
 Leu Gly Arg Ala Gln Asp Leu Asn Gly Thr Asp Ile Ala Val Val Lys
 100 105 110
 Gly Glu Ile Gly Val Ala Glu Asn Ala Ala Val Trp Ile Pro Gln Thr
 115 120 125
 Val Lys Tyr Lys Ala Leu Tyr Phe Ile Ala Glu Lys Leu Val Ile Val
 130 135 140
 Leu Asp Lys Asn Arg Ile Val Ser Asn Met His Gln Ala Tyr Glu Arg
 145 150 155 160
 Ile Lys Asp Glu Lys Tyr Lys Phe Gly Thr Phe Ile Ser Gly Pro Ser
 165 170 175
 Lys Thr Ala Asp Ile Glu Gln Ala Leu Val Met Gly Ala His Gly Ala
 180 185 190
 Arg Asp Val Leu Val Ile Leu Lys
 195 200

<210> 8718

<211> 165

<212> PRT

<213> B.fragilis

<400> 8718

Met Ala Ile Glu Asn Thr Glu Gly Tyr Pro Leu Ile Ser Trp Arg Glu
 1 5 10 15
 Ile Ile Ile Lys Thr Lys Tyr Met Asn Thr Gln Arg Gln Thr Gly Thr
 20 25 30
 Cys Arg Ser Leu Ser Gly His Ala Gln Arg His Gly Arg Glu Val Arg
 35 40 45
 Pro Ser Tyr Glu Ile Ser Thr Ser Gln Phe Ser Asp Met Lys Val Arg
 50 55 60
 Arg Leu Thr Arg Asn Tyr Gly Phe Gly Gly Tyr Ser Ile Tyr Arg Tyr
 65 70 75 80
 Leu Val Ser Glu Ala Leu Tyr Lys Gly Glu Tyr Phe Leu Pro Trp Cys
 85 90 95
 Glu Glu Thr Ala Arg Ala Val Ala Ser Tyr Trp Asn Ala Ser Leu Glu
 100 105 110
 Asp Ile Thr Arg Ile Val Asp Gly Cys Val Gln Val Gly Leu Phe Asn
 115 120 125
 Asp Glu Leu Tyr Arg Lys His Arg Val Leu Thr Ser Ala Ala Ile Gln
 130 135 140
 Gln Asp Tyr Leu Lys Leu Cys Gly Met Ala Tyr Ile Gln Glu Glu Phe
 145 150 155 160
 Ala Leu Ser Ala Ser
 165

<210> 8719

<211> 505

<212> PRT

<213> B.fragilis

<400> 8719

Lys Gln Ser Asp Met Ile Asn Lys Lys His Ile Ser Leu Leu Thr Leu
 1 5 10 15
 Val Ile Phe Leu Ser Leu Ser His Phe Ala Val Ser Ala Ser Ala Gln
 20 25 30
 Pro Ser Val Val Glu Val Pro Ser Val Ser Val Gln Pro Ser Val Asp

35	40	45
Ser Leu Ser His Tyr Leu Glu Gln Ala Ala Arg Ser Asn Pro Gln Val		
50	55	60
Asn Ala Asp Phe Met Leu Tyr Lys Ala Ser Leu Glu Lys Ile Pro Gln		
65	70	75
Ala Gly Ala Phe Ala Asp Pro Glu Leu Glu Ile Gly Phe Phe Val Lys		
85	90	95
Pro Met Glu Thr Leu Met Gly Lys Gln Ile Ala Asp Phe Thr Leu Met		
100	105	110
Gln Met Phe Pro Trp Phe Gly Thr Arg Lys Ala Ala Arg Ser Glu Ala		
115	120	125
Ser Glu Met Ala Arg Met Ala Tyr Glu Gln Phe Arg Asp Thr Arg Asn		
130	135	140
Asn Leu Trp Tyr Glu Val Lys Ala Gln Trp Tyr Gln Leu Ser Ser Leu		
145	150	155
Asn Glu Gln Tyr His Ile Thr Glu Ala Asn Ile Arg Leu Leu Tyr Gln		
165	170	175
Leu Glu Gln Leu Ala Leu Asn Arg Phe Ser Ala Ser Ser Ala Gln Ala		
180	185	190
Ala Pro Ser Ser Thr Ser Val Thr Ser Val Ala Ser Met Pro Pro Ala		
195	200	205
Leu Ser Ser Gly Ser Gly Met Ser Gly Met Gly Gly Met Gly Ser Pro		
210	215	220
Ala Pro Ala Gly Thr Pro Gly Val Ser Ala Gly Ser Ser Ser Gly Arg		
225	230	235
Asp Met Ser Gly Met Gly Gly Gly Ser Met Gly Asn Val Val Val Gly		
245	250	255
Gly Met Ser Asp Val Leu Arg Ile Gln Met Glu Arg Ala Gly Leu Glu		
260	265	270
Asp Asn Leu Ala Ser Leu Leu Ser Ala Arg Leu Thr Val Gln Ala Arg		
275	280	285
Phe Asn Ala Leu Leu Asn Arg Pro Ser Asp Ala Ser Val Cys Val Pro		
290	295	300
Asp Ser Leu Thr Gln Arg Phe Tyr Arg Ile Asp Gly Gln Leu Leu Leu		
305	310	315
Asp Ser Ile Phe Thr Arg Asn Pro Met Leu Ala Met Leu Glu Ala Glu		
325	330	335
Gly Glu Ala Tyr Arg Ala Lys Ala Lys Met Asp Arg Arg Met Ser Tyr		
340	345	350
Pro Met Ile Gly Ile Gly Leu Gln Tyr Ser Val Val Asn Lys Val Ala		
355	360	365
Asp Pro Met Gly Met Pro Asp Met Asn Gly Lys Asp Met Val Met Pro		
370	375	380
Met Val Lys Val Ser Leu Pro Leu Phe Arg Arg Lys Tyr Asn Ala Arg		
385	390	395
Gln Arg Glu Ser His Asn Tyr Arg Met Ala Ser Glu Leu Lys Arg Asp		
405	410	415
Asn Val Gln Asn Gln Leu Gln Ala Glu Tyr Ile Asn Val Arg Gln Gln		
420	425	430
Leu Asp Asp Ala Ala Arg Lys Val Ser Leu Tyr Glu Arg Gln Tyr Ala		
435	440	445
Leu Ser Leu Ser Thr Trp Gln Leu Met Val Arg Glu Phe Thr Ala Gly		
450	455	460
Arg Gln Ser Leu Thr Asp Val Ile Gln Val Glu Arg Gln Met Leu Asp		
465	470	475
Tyr Lys Leu Lys Lys Ser Glu Ala Val Ala Ala Tyr Asn Thr Thr Val		
485	490	495
Ala Ala Ile Glu Lys Leu Ile Ala Asp		
500	505	

<210> 8720
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8720
 Arg Pro Ser Glu Arg Pro Phe Pro Tyr Arg Lys Asp Arg Glu Trp Pro
 1 5 10 15
 Pro Pro Ser Leu Leu Tyr Leu Gln Thr Tyr Thr Tyr Ile Asn Gln Asn
 20 25 30
 Gln Tyr Ser Ser Lys Gln Pro Ala Val Ala Ser Pro Leu Thr Leu Leu
 35 40 45
 Arg Tyr Phe Asn Ile Thr Asn Thr Ser Leu Ala Pro
 50 55 60

<210> 8721
 <211> 78
 <212> PRT
 <213> B.fragilis

<400> 8721
 Arg Ile Thr Glu Ser Glu Ser Asp Ser Leu Arg Phe Val Tyr Arg Ile
 1 5 10 15
 His Ile Lys Thr Ile Arg Tyr Asp Lys Gln Glu Thr Tyr Ile Phe Thr
 20 25 30
 His Leu Gly Asp Ile Pro Phe Ala Glu Ser Phe Cys Arg Phe Gly Phe
 35 40 45
 Gly Ala Ala Ile Arg Cys Gly Gly Ala Phe Cys Phe Gly Ala Thr Leu
 50 55 60
 Cys Arg Gln Leu Val Pro Leu Ser Gly Thr Gly Gly Thr Gln
 65 70 75

<210> 8722
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 8722
 Asn Ser Lys Asp Thr Met Asn Lys Ser Phe Phe Tyr Ala Ile Cys Phe
 1 5 10 15
 Val Val Ile Leu Val Val Glu Ile Ile Ile Gly Ile Tyr Val Arg Asp
 20 25 30
 Ser Phe Val Arg Pro Tyr Met Gly Asp Ala Leu Val Val Val Leu Ile
 35 40 45
 Tyr Cys Phe Ile Arg Ile Phe Ile Pro Asn Gly Leu Ser Gln Leu Pro
 50 55 60
 Leu Tyr Val Leu Ala Phe Ala Cys Phe Ile Glu Ile Leu Gln Tyr Phe
 65 70 75 80
 Gln Leu Val Asp Val Leu Gly Ile Ser Asn Arg Ile Leu Arg Ile Ala
 85 90 95
 Leu Gly Ser Thr Phe Asp Leu Lys Asp Met Val Ser Tyr Ala Gly Gly
 100 105 110
 Tyr Val Phe Ile Leu Leu Ala Glu Tyr Phe Leu Asp Lys Lys Arg Lys
 115 120 125

<210> 8723
 <211> 80
 <212> PRT

<213> B.fragilis

<400> 8723

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Asn Asn Arg Glu Arg Asn Lys Tyr Ile Ser Ile Tyr Arg Ile Leu Pro
1          5          10          15
Leu Asn Ser Ser Asn Lys Leu Ile Gly Phe Tyr Ile Gln Asn Lys Ile
          20          25          30
Ala Asn Val Pro Phe Phe Thr Glu Ala Pro Ile Gln Tyr Pro Arg Val
          35          40          45
Ala Gly Cys Asn Cys Ala Ile Val Asn Cys Leu Cys Ala Cys Pro His
          50          55          60
Asn Ser Lys Arg Val Phe Arg Asn Ile Leu Tyr Tyr Ile Ile Ala Ile
65          70          75          80

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<210> 8724

<211> 373

<212> PRT

<213> B.fragilis

<400> 8724

```

Gln Ile Arg Asp Gly Tyr Asp Arg Thr Ile Val Glu Phe Leu Arg Leu
1          5          10          15
Asn Phe His Pro Val Ala Ile Arg Glu Gly Tyr Leu Leu Ile Asn Asp
          20          25          30
Tyr Leu Cys Gly Ser Leu Leu Asp Phe Met Met Asp Lys Thr Lys Lys
          35          40          45
Val Arg Tyr Val Phe Ser Val Phe Met Val Met Leu Met Val Gly Ile
          50          55          60
Ala Glu Trp Thr Gly Glu Lys Glu Ile Ile Phe Pro Glu Met Ala Ala
65          70          75          80
Leu Ala Val Gly Leu Trp Val Ile Asp Lys Arg Val Trp Lys Val Gly
          85          90          95
Arg Trp Gln Leu Ile Gly Leu Met Thr Ala Gly Ala Val Ala Gly Val
          100          105          110
Cys Ile Val Arg Tyr Ser Thr Leu Pro Leu Leu Cys Asn Leu Cys Leu
          115          120          125
Ala Phe Ala Phe Ala Ala Cys Cys Leu Leu Phe Ser Arg Ala Thr Leu
          130          135          140
Ile Pro Leu Ile Ser Ala Cys Met Leu Pro Val Leu Leu His Thr Glu
145          150          155          160
Thr Trp Ile Tyr Pro Ser Ala Val Phe Leu Leu Ser Ala Val Leu Val
          165          170          175
Ala Gly Gln Arg Leu Met Glu Lys Gly Gly Leu Arg Arg Glu Thr Asp
          180          185          190
Tyr Val Leu Pro Gly Arg Glu Trp Lys Lys Glu Ile Phe Arg Trp Ala
          195          200          205
Ala Leu Leu Phe Trp Val Ser Leu Val Ala Ala Leu Ser Ile Ser Cys
          210          215          220
Gly Cys Ser Tyr Phe Ile Ile Pro Pro Leu Ile Val Thr Phe Thr Glu
225          230          235          240
Ile Val Asn Ser Lys Ala Gly Phe Arg Asn Arg Pro Met Gln Val Phe
          245          250          255
Leu Phe Leu Val Thr Gly Ala Ala Leu Gly Thr Ala Phe Gln Ile Ile
          260          265          270
Gly His Thr Phe Leu His Leu Pro Glu Thr Val Val Ala Leu Leu Ile
          275          280          285
Ile Cys Cys Leu Phe Ala Val Phe Glu Trp Thr Gly Lys Tyr Phe Ala
          290          295          300
Pro Ala Gly Ala Leu Ala Leu Ile Pro Leu Ile Val Pro Gln Glu Gly

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305              310              315              320
Val His Trp Leu Pro Leu Gln Ala Ala Ala Gly Ala Ala Leu Phe Ile
              325              330              335
Ala Ile Gly Met Leu Val Phe Gln Gln Cys Tyr Lys Trp Ser Lys Ala
              340              345              350
Gln Leu Ile Phe Cys Phe Thr Pro Thr Leu Leu Arg Arg Tyr Leu Asn
              355              360              365
Arg Arg Arg Lys Glu
              370

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<210> 8725
<211> 138
<212> PRT
<213> B.fragilis

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<400> 8725
Glu Ser Gly Glu Val Lys Glu Val Pro Arg Ile Thr Ile Phe Thr Ile
1              5              10              15
Asn Asp Tyr Phe Pro Pro Lys Ser Phe Cys Asn Ile Arg Val Asn Arg
              20              25              30
Ile Phe Val Tyr Asn Phe Gly Val Val Met Thr Glu Glu Lys Lys
              35              40              45
Leu Leu Ser Thr Phe Glu Ala Arg Leu Arg His Leu Ile Tyr Leu His
              50              55              60
Asp Glu Leu Lys Arg Glu Asn Ala Glu Leu Lys Gln Leu Leu Glu Glu
65              70              75              80
Glu Lys Ser Glu Leu Glu Lys Ala Arg Ala Glu Tyr Lys Ala Leu Glu
              85              90              95
Ser Ser Tyr Thr Asp Leu Lys Thr Ala Thr Thr Ile Ser Leu Asn Gly
              100              105              110
Ser Asp Val Lys Glu Thr Lys Leu Arg Leu Ser Lys Leu Val Arg Glu
              115              120              125
Val Asp Lys Cys Ile Ala Leu Leu Asn Glu
              130              135

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<210> 8726
<211> 390
<212> PRT
<213> B.fragilis

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<400> 8726
Gly Met Lys Leu Ser Asp Tyr Ile Arg Gly Phe Arg Lys Gly Lys Glu
1              5              10              15
Ala His Arg Leu Glu Lys Glu Ala Met Arg Asp Pro Phe Leu Ala Asp
              20              25              30
Ala Leu Glu Gly Tyr Ser Arg Val Glu Ser Gly Ala Asp Glu Gln Ile
              35              40              45
Glu Leu Leu Arg Arg Arg Val Asn Met Arg Val Thr Gln Lys Arg Arg
              50              55              60
His Thr Ile Ala Trp Ser Val Ala Ala Ser Leu Leu Ile Gly Val Cys
65              70              75              80
Ile Gly Ser Tyr Phe Leu Leu Gln Glu Asn Thr Leu Pro Asp Glu Ala
              85              90              95
Arg Ile Ala Met Glu Glu Val Ser His Leu Glu Pro Leu Ser Val Gln
              100              105              110
Lys Glu Glu Lys Lys Glu Asp Leu Val Ala Thr Val Arg Lys Asp Ser
              115              120              125
Ala Thr Ile Gln Lys Gly Leu Ile Thr Gly Asn Arg Glu Lys Lys Val
              130              135              140

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Val Val Ser Pro His Thr Glu Val Pro Gln Ala Met Thr Gln Glu Trp
 145 150 155 160
 Ile Asp Glu Ala Leu Glu Thr Thr Ile Ala Glu Glu Pro Leu Ala Ala
 165 170 175
 Thr Thr Ser Ser Ala Met Lys Ser Ile Pro Ala Asn Asp Ser Ser Leu
 180 185 190
 Thr Ala Gln Val Ala Val Gly Gly Lys Val His Gly Arg Val Thr Asp
 195 200 205
 Ser Ser Gly Tyr Pro Ile Val Gly Ala Thr Val Lys Leu Lys Gly Thr
 210 215 220
 Asn Gln Gly Thr Ile Ser Asp Val Asn Gly Asn Phe Val Leu Lys Thr
 225 230 235 240
 Gly Gly Asn Arg Glu Leu Ala Val Asp Tyr Ile Gly Tyr Glu Ser Val
 245 250 255
 Thr Leu Pro Ala Asp Thr Thr Lys Ser Leu Leu Ile Ala Met Asn Glu
 260 265 270
 Asp Gln Ala Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Ser Gln
 275 280 285
 Ser Lys Gly Ser Ile Thr Gly Ala Val Ala Ser Leu Lys Met Ser Gly
 290 295 300
 Thr Pro Gln Pro Thr Ile Gly Arg Lys Ala Phe Arg Lys Tyr Leu Lys
 305 310 315 320
 Glu Ser Leu Val His Pro Ser Asp Lys Asp Cys Ala Arg Ala Lys Gly
 325 330 335
 Lys Val Ile Leu Thr Phe Arg Val Asp Lys Glu Gly Arg Pro Gln Asp
 340 345 350
 Ile Thr Val Lys Lys Gly Leu Cys Ala Ser Ala Asp Glu Glu Ala Ile
 355 360 365
 Arg Leu Ile Glu Glu Gly Pro Asp Trp Thr Met Gly Glu Glu Pro Val
 370 375 380
 Glu Ile Ser Ile Arg Phe
 385 390

<210> 8727

<211> 311

<212> PRT

<213> B.fragilis

<400> 8727

Thr Phe Pro Cys Phe Ala Ala Glu Ile Lys Phe Ser Met Ala Lys Gln
 1 5 10 15
 Gln Phe Asn Lys Leu Ile Trp Leu Val Asp Thr Ile Phe Arg Asn Ala
 20 25 30
 Pro Val Thr Phe Ala Glu Ile Asn Arg Arg Trp Arg Ala Gly Asp Asp
 35 40 45
 Asn Arg Ser Asp Ile Pro Leu Arg Thr Phe His Asn His Arg Gln Ala
 50 55 60
 Ile Glu Glu Met Phe Asp Ile Asn Ile Glu Cys Asp Lys Arg Asn Asn
 65 70 75 80
 Thr Tyr Tyr Ile Ala Asp Ala Glu Gly Met Leu Gly Asp Lys Leu Lys
 85 90 95
 Met Trp Leu Leu Asn Ser Phe Ser Leu Asn Asn Val Leu Gln Glu Asn
 100 105 110
 Val Asp Met Lys Asn Arg Ile Val Phe Glu Glu Val Pro Ser Gly Val
 115 120 125
 Gln Phe Met Asp Leu Val Ile Asp Ala Met Arg Ser Gly Arg Val Leu
 130 135 140
 Ala Met Glu Tyr Gln Ala Tyr Asn Trp Glu His Ser Lys Asp Val Leu
 145 150 155 160

Leu Glu Pro Tyr Phe Val Lys Leu Phe Arg His Arg Trp Tyr Leu Ile
 165 170 175
 Gly Ile Asn Arg Glu Tyr Lys Ala Phe Arg Ser Tyr Ser Leu Asp Arg
 180 185 190
 Ile Lys Arg Ile Ala Leu Ser Glu Thr Phe Asn Phe Pro Arg Lys
 195 200 205
 Phe Thr Pro Gln Asp His Phe Arg Asp Ser Phe Gly Ile Ile Arg Asp
 210 215 220
 Glu Asn Leu Leu Pro Gln His Thr Val Leu Arg Thr Thr Ile Ser Gln
 225 230 235 240
 Ala Pro Tyr Leu Arg Asn Leu Pro Leu His Ser Ser Gln Lys Glu Ile
 245 250 255
 Ala Val Thr Glu Ser Tyr Val Asp Phe Glu Leu Tyr Ile Ser His Thr
 260 265 270
 Tyr Asp Phe Ile Gln Glu Leu Leu Ser Lys Gly Ala Ala Val Glu Val
 275 280 285
 Leu Lys Pro Gln Ser Leu Arg Asp Lys Ile Lys Ala Glu Ile Gln Asn
 290 295 300
 Met Gln Thr Leu Tyr Arg Leu
 305 310

<210> 8728

<211> 552

<212> PRT

<213> B.fragilis

<400> 8728

Asn Ser Asn Cys Met Lys Lys Ile Ser Asp Ile Leu Arg Lys Lys Gln
 1 5 10 15
 Val Leu Tyr Pro Leu Ile Ala Leu Ala Gly Phe Val Leu Gly Trp Leu
 20 25 30
 Leu Phe Ser Pro Ser Ser Ser Pro Glu Ser Ala Gly Gly Thr His Ala
 35 40 45
 Glu Ala His Asn His Asp Met His Gly Thr Ser His Asp Leu Val Gln
 50 55 60
 Asp Glu Ser Gly Val Trp Thr Cys Ser Met His Pro Gln Ile Arg Gln
 65 70 75 80
 Asp Lys Pro Gly Lys Cys Pro Ile Cys Gly Met Asp Leu Ile Pro Leu
 85 90 95
 Lys Lys Asn Val Ile Ser Gly Gly Asp Ala Val Ser Asp Pro Asp Ala
 100 105 110
 Ile Arg Leu Ser Asp Glu Ala Met Ala Leu Ala Asp Val Gln Thr Thr
 115 120 125
 Arg Val Ser Arg Ser Asn Pro Val Lys Gln Val Arg Leu Tyr Gly Lys
 130 135 140
 Ile Ile Pro Asp Glu Arg Ser Leu Gln Ser Gln Thr Ala Tyr Val Gly
 145 150 155 160
 Gly Arg Ile Glu Arg Leu Asp Ile Glu Phe Thr Gly Glu Thr Val Arg
 165 170 175
 Ala Gly Gln Thr Leu Ala Thr Leu Tyr Ser Pro Glu Leu Phe Thr Ala
 180 185 190
 Gln Gln Glu Leu Leu Glu Ala Val Arg Met Gln Gln Pro Ala Leu Val
 195 200 205
 Gln Ala Ala Arg Glu Lys Leu Arg Leu Trp Asn Leu Thr Asp Ala Gln
 210 215 220
 Ile Asp Ala Ile Gln Tyr Ser Gly Gln Ala Ser Pro Met Val Glu Ile
 225 230 235 240
 Lys Ser Asn Thr Asn Gly Ile Val Ile Ala Lys Arg Val Asn Arg Gly
 245 250 255

```

Asp Tyr Val Ser Gln Gly Ser Ile Leu Phe Asp Ile Ala Asn Leu Ser
      260      265      270
Arg Val Trp Ala Met Phe Asp Ala Phe Glu Val Asp Leu Pro Phe Leu
      275      280      285
Ala Lys Gly Asp Arg Val Glu Phe Thr Leu Ser Ala Phe Pro Gly Lys
      290      295      300
Thr Tyr Ser Gly Arg Ile Ser Phe Ile Asp Pro Ile Leu Asn Ala Thr
305      310      315      320
Thr Arg Thr Ala Arg Val Arg Val Asp Val Ala Asn Pro Thr Leu Glu
      325      330      335
Met Lys Pro Glu Met Tyr Ala Thr Ala Gln Val Ala Ala Pro Leu Lys
      340      345      350
Gly Tyr Lys Asp Arg Ile Val Val Pro Gln Thr Ala Val Leu Trp Thr
      355      360      365
Gly Lys Arg Ala Val Val Tyr Val Arg Leu Pro Asp Thr Asp Thr Pro
      370      375      380
Thr Phe Arg Met Arg Glu Val Thr Leu Gly Pro Ala Leu Gly Gly Ala
385      390      395      400
Tyr Val Val Leu Asp Gly Leu Ser Asp Gly Glu Glu Ile Val Thr Asn
      405      410      415
Gly Val Phe Ser Ile Asp Ala Ser Ala Gln Leu Glu Gly Lys Arg Ser
      420      425      430
Met Met Asn Glu Asp Thr Pro Gly Thr Ala Pro Met Thr Gly His Gln
      435      440      445
Gly His Ser Met Ser Gly Met Ser Gly Ser His Ala Val Ser Gln Glu
      450      455      460
Ser Glu His Val Leu Phe Ala Val Arg Gly Ser Cys Asp Met Cys Lys
465      470      475      480
Glu Arg Ile Glu Thr Ala Ala Lys Gly Val Ser Gly Val Arg Ser Ala
      485      490      495
His Trp Asp Arg Glu Lys Gln Met Ile His Leu Gln Leu Asp Pro Ser
      500      505      510
Glu Thr Ser Ala Asp Ala Val Ala Lys Ala Ile Ala Ala Ala Gly His
      515      520      525
Asp Thr Asp Lys Tyr Lys Ala Val Lys Ala Val Tyr Asp Ala Leu Pro
      530      535      540
Gly Cys Cys Lys Tyr Arg Asp Glu
545      550

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<210> 8729

<211> 394

<212> PRT

<213> B.fragilis

<400> 8729

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Asn Met Lys Cys Asn Val Ser Tyr Lys Tyr Leu Phe Ile Ala Ile Gly
1      5      10      15
Ile Leu Cys Pro Leu Phe Ser Ala Cys Asp Tyr Ala Asp Gly Glu Gly
      20      25      30
Ser Gly Ser Glu Asn Ala Val Tyr Met Glu Thr Pro Asp Asn Lys Gly
      35      40      45
Ile Val Asn Phe Thr Leu Glu Pro Asp Gly Gly Ile Thr Tyr Leu Thr
      50      55      60
Pro Arg Leu Ala Asn Ile Ser Gln Asn Pro Val Thr Ile Gln Val Gly
65      70      75      80
Tyr Asp Lys Glu Ala Leu Asp Lys Tyr Asn Lys Asp Asn Gly Ala Ser
      85      90      95
Tyr Glu Pro Leu Pro Pro Ser Ala Phe Lys Leu Ala Asp Ala Glu Gly
      100      105      110

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Asn Glu Leu Ser Ala Ser Glu Gly Ile Arg Val Pro Ala Gly Asp Phe
115 120 125
Ser Ala Lys Ile Met Val Lys Val Gly Gln Leu Asn Ser Lys Asp Phe
130 135 140
Pro Ala Asn Lys Lys Tyr Ala Ile Pro Leu Ser Ile Thr Gly Ala Ser
145 150 155 160
Asn Tyr Ser Leu Ile Pro Ser Gln Arg Ser Ala Ile Leu Leu Leu Asn
165 170 175
Arg Ser Ile Leu Ser Ser Val Ala Lys Val Ser Gly Gly Glu Gly Ile
180 185 190
Arg Ile Lys Pro Val Gly Met His Thr Lys Ala Glu Trp Thr Ile Gln
195 200 205
Met Ser Ala Ile Tyr Ser Ser Leu Thr Arg Ser Asn Leu Thr Thr Ala
210 215 220
Tyr Leu Ser Asn Gly Thr Gly Gly Ala Phe Tyr Thr Arg Ile Ser Ser
225 230 235 240
Thr Ala Gly Ile Gln Val Lys Asn Gly Arg Asp Gly Asp Asp Thr Trp
245 250 255
Thr Gln Ile Pro Leu Gln Ala Gly Lys Trp Leu His Ile Thr Tyr Val
260 265 270
His Lys Asp Lys Lys Thr Thr Val Tyr Val Asn Gly Lys Val Gln Lys
275 280 285
Val Phe Glu Asn Ser Ala Ile Thr Phe Gly Glu Asn Ser Met Ile Val
290 295 300
Val Gly Asn Ser Gly Tyr Arg Asn Asp Tyr Leu Arg Glu Ile Arg Leu
305 310 315 320
Trp Asp Lys Ala Leu Thr Glu Ser Glu Ile Asn Asp Tyr Leu Tyr Leu
325 330 335
Pro Met Asp Pro Ala Thr Pro His Leu Ile Ser Tyr Leu Pro Leu Ser
340 345 350
Lys Glu Met Glu Thr Lys Asp Leu Lys Ala Pro Ala Gly Thr Glu Asn
355 360 365
Val Thr Thr Lys Ala Arg Ile Glu Tyr Val Glu Asn Val Lys Phe Pro
370 375 380
Ala Asp Glu Leu Val Ile Val Asn Gln Glu
385 390

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<210> 8730

<211> 511

<212> PRT

<213> B.fragilis

<400> 8730

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Lys Glu Arg Cys Asn Phe Ala Cys Gln Lys Ile Thr Tyr Leu Met Ala
1 5 10 15
Val Tyr Val Glu Glu Val Ser Arg Thr Phe Gly Glu Tyr Leu Leu Ile
20 25 30
Pro Gly Leu Thr Thr Lys Gln Cys Val Pro Ser Asn Val Ser Leu Arg
35 40 45
Thr Pro Leu Val Lys His Ala Ala Gly Thr Gln Ala Ala Ile Glu Leu
50 55 60
Asn Ile Pro Phe Val Ser Ala Ile Met Gln Ser Val Ser Gly Pro Glu
65 70 75 80
Leu Ala Ile Glu Leu Ala Arg Asn Gly Gly Leu Ser Phe Ile Phe Gly
85 90 95
Ser Gln Pro Ile Ala Ser Gln Ala Glu Met Val Arg Lys Val Lys Lys
100 105 110
Phe Lys Ala Gly Phe Val Thr Ser Asp Ser Asn Leu Thr Pro Glu His
115 120 125

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Thr Leu Glu Asp Val Leu Arg Leu Leu Arg Gln Thr Gly His Ser Thr
130 135 140
Ile Gly Ile Thr Asp Asp Gly Ser Pro Asn Gly His Leu Leu Gly Leu
145 150 155 160
Val Thr Ser Arg Asp Tyr Arg Ile Ser Arg Asp Pro Leu Asp Lys Lys
165 170 175
Ile Lys Asp Phe Met Thr Pro Phe Glu Lys Leu Ile Val Gly Glu Val
180 185 190
Gly Leu Thr Leu Ser Glu Ala Asn Gln Ile Ile Trp Asp His Lys Leu
195 200 205
Asn Thr Leu Pro Ile Ile Asp Lys Glu Gly Arg Leu Ala Tyr Phe Val
210 215 220
Phe Arg Lys Asp Tyr Asp Ser His Lys Glu Asn Pro Asn Glu Val Ser
225 230 235 240
Ser Pro Asp Lys Lys Leu Leu Val Gly Ala Gly Ile Asn Thr Arg Asp
245 250 255
Tyr Gln Glu Arg Val Pro Ala Leu Val Glu Ala Gly Val Asp Val Leu
260 265 270
Cys Ile Asp Ser Ser Asp Gly Tyr Ser Glu Trp Gln Tyr Glu Thr Leu
275 280 285
Gln Trp Ile Lys Gln Gln Tyr Gly Asp Lys Val Leu Val Gly Ala Gly
290 295 300
Asn Val Val Asp Lys Glu Gly Phe Leu Tyr Leu Ala Glu Ala Gly Ala
305 310 315 320
Asp Phe Val Lys Val Gly Ile Gly Gly Gly Ser Ile Cys Ile Thr Arg
325 330 335
Glu Gln Lys Gly Ile Gly Arg Gly Gln Ala Thr Ala Leu Gln Asp Val
340 345 350
Ala Arg Ala Arg Asp Glu Tyr Gln Ala Arg Thr Gly Ile Tyr Val Pro
355 360 365
Ile Cys Ser Asp Gly Gly Leu Val His Asp Tyr His Met Val Leu Ala
370 375 380
Leu Ala Met Gly Ala Asp Phe Leu Met Met Gly Arg Tyr Phe Ala Arg
385 390 395 400
Phe Asp Glu Ser Pro Thr Lys Lys Leu Cys Ile Lys Asn Asn Tyr Val
405 410 415
Lys Glu Tyr Trp Gly Glu Gly Ser Asn Arg Ala Gln Asn Trp Gln Arg
420 425 430
Tyr Asp Met Gly Gly Thr Glu Ser Leu Lys Phe Glu Glu Gly Val Asp
435 440 445
Ser Tyr Val Pro Tyr Ala Gly Lys Met Lys Asp Asn Leu Ala Ala Thr
450 455 460
Leu Ser Lys Ile Lys Ala Thr Met Cys Ser Cys Gly Ala Val Thr Ile
465 470 475 480
Pro Asp Leu Gln Gln Asn Ala Lys Ile Thr Leu Val Ser Ser Thr Ser
485 490 495
Ile Val Glu Gly Gly Ala His Asp Val Ile Leu Lys Glu Lys Gly
500 505 510

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<210> 8731
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 8731
 Ala Asp Leu Cys Tyr Leu Cys Gly Arg Thr Lys Ile Asn Arg Ala Met
 1 5 10 15
 Phe Val Leu Ile Leu Thr Tyr Lys Ala Pro Ile Glu Lys Val Ile Glu
 20 25 30

```

Leu Leu Glu Ala His Cys Cys Tyr Leu Asp Lys Tyr Tyr Ala Ala Gly
   35          40          45
Ile Phe Leu Ala Ser Gly Pro Gln Val Pro Arg Thr Gly Gly Val Ile
   50          55          60
Leu Cys Arg Ala Gln Ser Arg Ala Glu Val Glu Lys Ile Ile Gly Glu
   65          70          75          80
Asp Pro Phe Asn Ala Val Ala Asp Tyr Arg Val Ile Glu Phe Glu Pro
      85          90          95
Asn Lys Ser Val Glu Gly Phe Lys Glu Leu Leu Lys Ile Gly
      100          105          110

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<210> 8732

<211> 435

<212> PRT

<213> B.fragilis

<400> 8732

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Asp Lys Ser Arg Asp Thr Lys His Ala Asn Ser Leu Pro Leu Met Asn
1          5          10          15
Ala Asn Val Leu Glu Lys Leu Lys Ile Leu Ala Glu Ser Ala Lys Tyr
   20          25          30
Asp Val Ser Cys Ala Ser Ser Gly Thr Val Arg Ala Asn Lys Pro Gly
   35          40          45
Thr Leu Gly Asn Thr Val Gly Gly Trp Gly Ile Cys His Ser Phe Ala
   50          55          60
Glu Asp Gly Arg Cys Ile Ser Leu Leu Lys Val Met Leu Thr Asn Tyr
   65          70          75          80
Cys Ile Tyr Asp Cys Ala Tyr Cys Ile Asn Arg Arg Ser Asn Asp Leu
      85          90          95
Pro Arg Ala Thr Leu Ser Val Ser Glu Leu Val Asp Leu Thr Ile Glu
      100          105          110
Phe Tyr Arg Arg Asn Tyr Ile Glu Gly Leu Phe Leu Ser Ser Gly Val
      115          120          125
Val Arg Asn Pro Asp Tyr Thr Met Glu Arg Leu Val Arg Val Ala Lys
      130          135          140
Asp Leu Arg Glu Val His Arg Phe Asn Gly Tyr Ile His Leu Lys Ser
      145          150          155          160
Ile Pro Gly Ala Ser Arg Glu Leu Val Asn Glu Ala Gly Arg Tyr Ala
      165          170          175
Asp Arg Leu Ser Val Asn Val Glu Ile Pro Lys Glu Glu Asn Leu Lys
      180          185          190
Leu Leu Ala Pro Glu Lys Asp His Lys Ser Val Phe Ala Pro Met Leu
      195          200          205
Tyr Ile Gln Gln Gly Val Leu Glu Ser Ser Glu Glu Arg Lys Lys Phe
      210          215          220
Arg Tyr Ala Pro Arg Phe Ala Pro Ala Gly Gln Ser Thr Gln Met Ile
      225          230          235          240
Val Gly Ala Thr Ala Glu Ser Asp Lys Asp Ile Leu Phe Leu Ser Ser
      245          250          255
Ala Leu Tyr Gln Arg Pro Thr Met Lys Arg Val Tyr Tyr Ser Gly Tyr
      260          265          270
Val Ser Val Asn Thr Tyr Asp Thr Arg Leu Pro Ala Leu Lys Gln Pro
      275          280          285
Pro Leu Val Arg Glu Asn Arg Leu Tyr Gln Ala Asp Trp Leu Met Arg
      290          295          300
Phe Tyr Gln Phe Lys Val Asn Glu Ile Val Asp Asp Thr Tyr Pro Asp
      305          310          315          320
Leu Asp Leu Glu Ile Asp Pro Lys Leu Ser Trp Ala Leu Arg His Pro
      325          330          335

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4827 8732 435 PRT B.fragilis 8732

Glu Gln Phe Pro Val Asp Ile Asn Lys Ala Asp Tyr Glu Met Ile Leu
 340 345 350
 Arg Ile Pro Gly Ile Gly Val Lys Ser Ala Lys Leu Ile Ile Ala Ser
 355 360 365
 Arg Arg Tyr Ser Lys Leu Gly Tyr Tyr Gln Leu Lys Lys Ile Gly Val
 370 375 380
 Val Met Lys Lys Ala Gln Tyr Phe Ile Thr Cys Ser Glu Leu Pro Met
 385 390 395 400
 Arg Thr Val Asn Glu Met Thr Pro Gln Thr Val Arg Ser Leu Leu Leu
 405 410 415
 Pro Lys Ser Ala Lys Lys Lys Thr Asp Glu Asn Gln Leu Ser Phe Val
 420 425 430
 Phe Asn Asp
 435

<210> 8733
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 8733
 Phe Pro Ser Arg Val His His Phe Thr Asp Leu Arg Pro Val Leu Pro
 1 5 10 15
 Thr Ser Pro Glu Tyr Val Ser Pro Phe Ser Ser Arg Arg Tyr Ser Ala
 20 25 30
 Asn Arg Ser Val Thr Lys Asn Asn Ile Asn Arg Arg Phe Lys Gln Met
 35 40 45
 Pro Tyr Gln Phe Ala Ile Lys Glu Val Ala Gly Ile Thr Lys Ile Lys
 50 55 60
 Thr Ile Val Ser Ile Phe His Lys Thr Lys Lys Arg Ser Leu Phe Phe
 65 70 75 80
 Ile Tyr

<210> 8734
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 8734
 Leu Leu Leu Arg Leu Asn Lys Lys Thr Phe Asn Met Arg Arg Thr Ala
 1 5 10 15
 Ile Ala Leu Phe Cys Leu Phe Leu Leu Ser Val Gly Ile Gly Leu Arg
 20 25 30
 Ala Gln Asn Ile Gln Leu His Tyr Asp Phe Gly Arg Ser Leu Tyr Asp
 35 40 45
 Lys Asp Leu Lys Asp Arg Pro Val Leu Thr Ser Thr Val Glu Lys Phe
 50 55 60
 His Pro Asp Lys Trp Gly Ser Thr Tyr Phe Phe Val Asp Met Asp Tyr
 65 70 75 80
 Thr Ser Asp Gly Val Ala Ala Ala Tyr Trp Glu Ile Ala Arg Glu Leu
 85 90 95
 Lys Phe Trp Lys Asn Pro Phe Ser Val His Val Glu Tyr Asn Gly Gly
 100 105 110
 Leu Ala Lys Gly Phe Ser Tyr Gln Asn Ala Tyr Leu Gly Gly Val Thr
 115 120 125
 Tyr Thr Tyr Asn Asn Thr Ala Phe Ser Arg Gly Phe Ser Leu Ser Ala
 130 135 140
 Met Tyr Lys Tyr Ile Gln Lys His His Ser Pro Asn Asn Phe Gln Leu

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145          150          155          160
Thr Gly Thr Trp Tyr Met Asn Phe Ser Asn Asn Leu Leu Thr Phe Ser
          165          170          175
Gly Phe Ala Asp Trp Trp Arg Glu Glu Thr Ala Tyr Gly Lys Thr Ile
          180          185          190
Phe Leu Thr Glu Pro Gln Phe Trp Val Asn Leu Asn Arg Ile Lys Gly
          195          200          205
Ile Ser Asp Lys Phe Lys Leu Ser Val Gly Ser Glu Val Glu Leu Ser
          210          215          220
Asn Asn Phe Gly Gly Arg Asp Gly Phe Tyr Val Ile Pro Thr Leu Ala
225          230          235          240
Leu Lys Trp Thr Ile Asn
          245

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<210> 8735

<211> 703

<212> PRT

<213> B.fragilis

<400> 8735

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Lys Gln Ser Arg Met Lys Gln Lys Lys Met Leu Ser Leu Thr Leu Ser
1          5          10          15
Gln Ile Arg Gln Leu Tyr Cys Gln Glu Leu Pro Glu Leu Thr Ala Met
          20          25          30
Ala Gln Gln Ser Leu Asp Asp Thr Asp Phe Lys Asn His Leu Gln Glu
          35          40          45
Phe Leu Thr Pro Tyr Ile Ser Gly Gly Asn Lys Ala Gly Glu Gln Ile
          50          55          60
Arg Leu Leu Ile Ser Tyr Asp Gly Lys Thr Val His Glu Leu Ser Asn
65          70          75          80
Glu Gln Asp Met Gln Ile Gln Thr Leu Ser Leu Leu Arg Arg Phe Leu
          85          90          95
Thr Gly Asn Leu Glu Asn Ala Glu Ile Pro Thr Asp Leu Phe Leu Asp
          100          105          110
Leu Tyr Tyr Leu Phe Lys Arg Leu Glu Glu Pro Glu Ser Pro Leu Pro
          115          120          125
Ser Pro Gln Arg Ile Lys Asn Arg Thr Glu Arg Trp Ala Thr Gly Leu
          130          135          140
Asp Glu Asp Val Ile Glu Leu Arg Ser Glu Asn Gln Glu Arg Met Leu
145          150          155          160
His Leu Leu Ile Gln Lys Ile Glu Asn Arg Lys Ser Lys Pro Ser Ser
          165          170          175
Arg Phe His Phe Glu Glu Gly Met Ser Tyr Glu Glu Lys Tyr Gln Gln
          180          185          190
Val Cys Gln Trp Trp Asn Asp Phe Arg Phe His Leu Ser Met Ala Ile
          195          200          205
Lys Thr Pro Thr Glu Leu Asn Arg Phe Leu Gly Asn Ser Leu Ser Ser
          210          215          220
Glu Thr Met Tyr Leu Leu Ser Arg Ala Arg Lys Lys Gly Met Pro Phe
225          230          235          240
Phe Ala Thr Pro Tyr Tyr Leu Ser Leu Leu Asn Thr Ser Gly Glu Gly
          245          250          255
Tyr Asn Asp Glu Ala Ile Arg Ser Tyr Ile Leu Tyr Ser Pro Arg Leu
          260          265          270
Val Glu Thr Tyr Gly Asn Ile Arg Ala Trp Glu Arg Glu Asp Ile Val
          275          280          285
Glu Val Gly Lys Pro Asn Ala Ala Gly Trp Leu Leu Pro Asp Gly His
          290          295          300
Asn Ile His Arg Arg Tyr Pro Glu Val Ala Ile Leu Ile Pro Asp Thr

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305 310 315 320
 Met Gly Arg Ala Cys Gly Gly Leu Cys Ala Ser Cys Gln Arg Met Tyr
 325 330 335
 Asp Phe Gln Ser Glu Arg Leu Asn Phe Glu Phe Asp Ala Leu Arg Pro
 340 345 350
 Lys Glu Ser Trp Asp Lys Lys Leu Arg Arg Leu Met Ser Tyr Phe Glu
 355 360 365
 Glu Asp Thr Gln Leu Arg Asp Ile Leu Ile Thr Gly Gly Asp Ala Leu
 370 375 380
 Met Ser Gln Asn Lys Thr Leu Lys Asn Ile Leu Glu Ala Val Tyr Arg
 385 390 395 400
 Met Ala Ala Arg Lys Arg Lys Ala Asn Gln Glu Arg Pro Glu Gly Glu
 405 410 415
 Lys Tyr Ala Glu Leu Gln Arg Val Arg Leu Gly Ser Arg Leu Leu Ala
 420 425 430
 Tyr Leu Pro Met Arg Ile Asn Asp Glu Leu Ile Glu Ile Leu Arg Glu
 435 440 445
 Phe Lys Glu Lys Ala Ser Val Ile Gly Val Lys Gln Phe Ile Ile Gln
 450 455 460
 Thr His Leu Gln Ser Pro Leu Glu Val Thr Pro Tyr Thr Arg Glu Ala
 465 470 475 480
 Ile Arg Lys Ile Leu Ser Ala Gly Trp Leu Ile Thr Asn Gln Leu Val
 485 490 495
 Tyr Thr Val Ala Ala Ser Arg Arg Gly His Thr Thr Arg Leu Arg Gln
 500 505 510
 Val Leu Asn Ser Leu Gly Val Val Cys Tyr Tyr Thr Phe Ser Val Lys
 515 520 525
 Gly Phe Asn Glu Asn Tyr Ala Val Phe Thr Pro Asn Ser Arg Ser Met
 530 535 540
 Gln Glu Gln His Glu Glu Lys Ala Phe Gly Lys Leu Thr Gln Glu Gln
 545 550 555 560
 Ala Asp Glu Leu Tyr Ser Leu Leu Glu Thr Gly Glu Asp Ile Ala Thr
 565 570 575
 Arg Ile Arg His Phe Met Lys Lys His His Leu Pro Phe Met Ala Thr
 580 585 590
 Asp Arg Ser Val Leu Asn Leu Pro Ala Ile Gly Lys Ser Met Thr Phe
 595 600 605
 Asn Leu Val Gly Ile Thr Glu Glu Gly Arg Arg Ile Leu Arg Phe Asp
 610 615 620
 His Asp Ser Thr Arg Arg His Ser Ser Ile Ile Asp Lys Leu Gly Lys
 625 630 635 640
 Ile Tyr Ile Val Glu Asn Lys Ser Leu Ala Ala Tyr Leu Arg Gln Leu
 645 650 655
 Ser Lys Met Gly Glu Asp Pro Glu Asp Tyr Ala Ser Ile Trp Ser Tyr
 660 665 670
 Thr Glu Gly Glu Thr Glu Pro Arg Phe Lys Leu Tyr Glu Tyr Pro Glu
 675 680 685
 Phe Glu Phe His Thr Thr Glu Arg Met Ser Asn Leu Glu Val Leu
 690 695 700

<210> 8736

<211> 134

<212> PRT

<213> B.fragilis

<400> 8736

Phe Ser Phe Ser Glu Lys Ser Tyr Phe Ser Tyr Phe Cys Arg Met Lys
 1 5 10 15
 Thr Ile Cys Ile Ile Leu Gly Thr Ile Ser Leu Gly Leu Gly Ile Leu

		20					25				30			
Gly	Ile	Phe	Leu	Pro	Leu	Leu	Pro	Thr	Thr	Pro	Phe	Leu	Leu	Thr
		35					40				45			
Ala	Ala	Leu	Tyr	Phe	Lys	Gly	Ser	Pro	Arg	Leu	Tyr	Gln	Trp	Leu
		50				55					60			
Asn	His	Lys	Tyr	Phe	Gly	Thr	Tyr	Ile	Arg	Asn	Phe	Arg	Glu	Asn
65					70					75				80
Ala	Ile	Pro	Leu	Arg	Ala	Lys	Ile	Ile	Ser	Leu	Leu	Leu	Met	Trp
				85					90					95
Thr	Met	Leu	Tyr	Cys	Ile	Phe	Phe	Leu	Ile	Pro	Leu	Val	Trp	Val
			100					105					110	Lys
Ile	Leu	Leu	Phe	Leu	Ile	Ala	Ala	Gly	Val	Thr	Tyr	His	Ile	Leu
		115					120					125		Ser
Phe	Lys	Thr	Leu	Lys	Lys									
		130												

<210> 8737

<211> 404

<212> PRT

<213> B.fragilis

<400> 8737

Lys	Asn	His	Arg	Met	Lys	Val	Lys	Lys	Ile	Leu	Leu	Ser	Met	Cys	Ala
1				5					10					15	
Ile	Ala	Ala	Leu	Ala	Ser	Cys	Ser	Gln	Asn	Asp	Asp	Val	Ala	Val	Pro
			20					25					30		
Thr	Asp	Ser	Ala	Pro	Pro	Ala	Lys	Val	Thr	Ile	Arg	Phe	Ala	Gly	Ser
		35					40					45			
Glu	Gly	Met	Thr	Arg	Ala	Ile	Gly	Ser	Glu	Asp	Ala	Val	Val	Asn	Asn
		50				55					60				
Leu	Thr	Ala	Phe	Phe	Phe	Asn	Thr	Ala	Gly	Ala	Leu	Ile	Lys	Ala	Pro
65					70					75					80
Met	Pro	Val	Ala	Gly	Asn	Asp	Leu	Lys	Pro	Glu	Ile	Thr	Leu	Ala	Thr
			85					90						95	
Thr	Thr	Asp	Ala	Ser	Gln	Val	Val	Leu	Val	Ala	Asn	Val	Pro	Ala	Gly
		100						105					110		
Thr	Ala	Phe	Ala	Gly	Val	Thr	Ser	Leu	Ser	Lys	Leu	Lys	Glu	Phe	Val
		115					120					125			
Val	Ser	Ser	Leu	Gly	Thr	Glu	Ala	Ser	Ser	Asn	Phe	Pro	Ile	Asn	Gln
		130				135					140				
Thr	Lys	Thr	Asn	Leu	Thr	Met	Ser	Gly	Trp	Gly	Ala	Ile	Asn	Met	Asn
145					150					155					160
Ala	Asp	Asn	Asn	Thr	Gly	Thr	Ala	Asn	Val	Lys	Leu	His	Phe	Met	Ala
			165						170					175	
Ala	Lys	Ile	Glu	Thr	Leu	Lys	Val	Thr	Ile	Gly	Gly	Lys	Asn	Val	Gly
		180						185					190		
His	Tyr	Ala	Asp	Thr	Glu	Asp	Gly	Val	Thr	Asp	Asp	Lys	Trp	Phe	Thr
		195					200					205			
Ile	Lys	Gln	Ala	Tyr	Leu	Met	Met	Ala	Gln	Thr	Asn	Ser	Val	Leu	Leu
		210				215					220				
Pro	Ala	Thr	Asp	Leu	Gly	Ala	Trp	Thr	Gly	Ala	Phe	Thr	Pro	Ala	Thr
225					230					235					240
Phe	Ala	Tyr	Ala	Gly	Gly	Leu	Ala	Trp	Gly	Thr	Arg	Pro	Trp	Glu	Asn
			245						250					255	
Pro	Pro	Val	Asn	Pro	Asp	Pro	Val	Lys	Ala	Thr	Asp	Tyr	Leu	Gln	Thr
		260						265					270		
Thr	Ile	Pro	Ala	Gly	Ala	Thr	Ser	Asn	Val	Ile	Asp	Asn	Ile	Leu	Val
		275					280					285			
Ser	Ala	Pro	Trp	Tyr	Val	Phe	Glu	Asn	Ala	Ser	Pro	Asn	Ala	Thr	Gly

290		295		300
Val Val Leu Glu Val Val Cys Asn Val Arg Lys Asp Asn Asn Thr Leu				
305		310		315
Glu Lys Glu Ser Arg Tyr Phe Thr Met Tyr Phe Gly Glu Lys Lys Thr				
	325		330	335
Gly Asp Ser Gly Asn Gln Pro Ile Leu Asn Ala Gly Gln Arg Tyr Ser				
	340		345	350
Ile Asn Ile Ala Leu Asn Gly Ser Phe Asp Pro Gly Asp Gly Thr Gly				
	355		360	365
Gly Gly Gly Thr Thr Asp Pro Thr Lys Pro Ser Val Asp Ala Asn Val				
	370		375	380
Glu Ile Thr Val Ala Pro Ala Glu Trp Thr Ala Val Ala Val Ile Asn				
385		390		395
Lys Glu Phe Asn				400

<210> 8738

<211> 777

<212> PRT

<213> B.fragilis

<400> 8738

Arg Lys Asn Ser Asn Arg Thr Met Ile Lys His Tyr Leu Lys Val Ala				
1	5		10	15
Leu Arg Asn Leu Met Asn Phe Lys Val His Ser Leu Ile Ser Ala Ile				
	20		25	30
Cys Leu Ala Ile Gly Ile Thr Cys Phe Ser Met Met Asn Tyr Phe Ile				
	35		40	45
Asp Ala Ile Thr Gly Lys Val Glu Leu Ser Asp Asn Asn Lys Tyr Ser				
	50		55	60
Ile Arg Leu Ser Gly Ala Ser Ser Gln Thr Ala Ala Asp Ile Tyr Leu				
	65		70	75
Phe Lys Glu Asp Phe Asp Tyr Leu Lys Glu Leu Pro Ile Ala Gly Ile				
	85		90	95
Asp Thr Leu Val Ala Ser Ser Ser Tyr Ser Asn Gly Lys Glu Ile Thr				
	100		105	110
Ala Ile Asp Lys Lys Gln Arg Glu Leu Pro Phe Leu Val Ser Phe Gln				
	115		120	125
Asn Val Ser Ser Asn Tyr Phe Thr Tyr Asn Ser Leu Gln Leu Lys Tyr				
	130		135	140
Gly Asn Gln Glu Ile Thr Ala Pro Asp Glu Val Ile Val Ser Arg Ser				
	145		150	155
Phe Ala Arg Lys Ala Phe Gly Glu Glu Asn Pro Ile Gly Gln Val Ile				
	165		170	175
Arg Gln Glu Thr Glu Ala Ala Asn Pro Ser Asp Leu Met Val Tyr Lys				
	180		185	190
Ile Val Asn Val Ala Leu Thr Glu Glu Lys Asp Phe His Gly Lys Thr				
	195		200	205
Ile Asp Cys Tyr Phe Pro Leu Ser Ala Lys Ser Arg Thr Pro Leu Cys				
	210		215	220
Ile Arg Ser Arg Leu Thr Gly Gln Thr Thr Thr Glu Ser Leu Asn Lys				
	225		230	235
Gln Leu Lys Gly Leu Thr Trp Lys His Gly Asp Gln Asp Ile Tyr Leu				
	245		250	255
Tyr Ala Ser Leu Glu Ser Glu Gln Asn Ser Ser Val Gln Arg Thr Ile				
	260		265	270
Ser Ile Leu Leu Ala Arg Phe Ile Ala Ser Leu Ile Leu Leu Ser Gly				
	275		280	285
Leu Ile Asn Phe Leu Lys Phe Ile Ile Gln Met Phe Tyr Asn Arg Gln				

290	295	300
Arg Glu Leu Val Leu	Arg Lys Cys Ile Gly Ser	Asp Ile Lys Gly Leu
305	310	315
Phe Ala Leu Leu Phe	Ala Glu Ile Phe Trp Met	Leu Ser Val Ala Phe
325	330	335
Leu Leu Ser Leu Ala Val	Thr Glu Ile Thr Leu Ser	Leu Val Tyr Thr
340	345	350
Tyr Ile Arg Pro Glu Asp	Met Ile Ser Phe Ser Leu	Val Asp Leu Tyr
355	360	365
Gly Ser Gln Leu Gly Leu	Tyr Leu Ala Leu Leu Leu	Ile Cys Met Leu
370	375	380
Ala Ile Leu Tyr Pro Ile	Tyr Arg Leu Arg Arg Leu	Ser Val Leu His
385	390	395
Ser Val Val Gln Arg Gln	Lys Arg His Val Phe Arg	Asn Phe Met Ile
405	410	415
Ala Leu Gln Leu Ala Ile	Ser Ile Leu Phe Thr Gly	Gly Val Phe Gly
420	425	430
Ile Thr Leu Leu Phe Asn	Glu Met Phe Glu Gly Met	Tyr Arg Pro Leu
435	440	445
Ser Thr Glu Glu Glu Asn	Arg Val Ile Ser Ile Ser	Val Asn Thr Ile
450	455	460
Cys Met Gln Lys Asn Met	Asp Ala Ile Leu Ser Asp	Ile Gln Ser Leu
465	470	475
Ser Glu Ile Thr Asp Arg	Thr Ser Ala Phe Asn Thr	Phe Asp Ala Asp
485	490	495
Val Tyr Thr Tyr Met Thr	Tyr Met Lys Asp Gly Lys	Pro Arg Gly Asn
500	505	510
Val Met Met Ile Gln Ala	Glu Pro His Tyr Phe Glu	Phe Phe Lys Ile
515	520	525
Pro Phe Ser Gly Lys Leu	Val Asp Lys Asp Ala Gln	Gly Phe Val Tyr
530	535	540
Ile Ser Glu Gln Phe Lys	Glu Gln Leu Gln Arg Asp	Ser Ile Ala Gly
545	550	555
Ser Val Thr Leu Asp Gly	Lys Glu Tyr Arg Ile Ala	Gly Thr Tyr Arg
565	570	575
Ala Leu Asn Arg Glu Asp	Thr Gln Ser Ser Ser Val	Gly Ser Val Phe
580	585	590
Leu Val Asn Pro Gln Ala	Tyr Thr Tyr Phe Lys Thr	Leu His Ser
595	600	605
Asp Ile Thr Pro Val Ala	Leu Glu Lys Ile Thr Glu	Ile Cys Arg Arg
610	615	620
Tyr Val Pro Glu Thr Leu	Pro Leu Asn Ile Arg Asn	Thr Gly Asp Ser
625	630	635
Lys Gln Ser Val Met Gly	Thr Val Ala Leu Leu Gln	Thr Ala Ser Leu
645	650	655
Leu Leu Ala Ile Val Ser	Ile Leu Leu Leu Ile Leu	Ser Ile Tyr Ser
660	665	670
Gly Ile Ser Met Asp Val	Ile Asn Arg Gln Lys Glu	Val Ala Ile Arg
675	680	685
Lys Ile Asn Gly Ala Thr	Pro Arg Val Ile Ala Leu	Leu Phe Gly Lys
690	695	700
Ile Tyr Leu Ile Ile Tyr	Leu Ser Val Phe Val Ile	Ile Tyr Pro Leu
705	710	715
Val Arg Leu Val Leu Ile	Ser Ile Thr Gln Lys Ser	Asn Leu Gln Ser
725	730	735
Ile Tyr Ser Trp Ser Trp	Gly Val Leu Phe Phe Thr	Met Ala Leu
740	745	750
Leu Ile Phe Leu Val Thr	Ala Tyr Lys Ile Tyr Lys	Val Met His Leu
755	760	765

Asn Pro Ala Ser Val Leu Lys Lys Glu
770 775

<210> 8739
<211> 316
<212> PRT
<213> B.fragilis

<400> 8739
Gln Pro Gly Arg Gln Glu Gly Pro Asp Arg Pro His Tyr Asn Lys Arg
1 5 10 15
Ser His Asn Thr Gln Val Val Gln Glu Met Ala Thr Ala Ile Ser Ala
20 25 30
Gln Ser Val Thr Ser Arg Lys Lys Gly Ala Met Lys Arg Thr Ile Leu
35 40 45
Ile Leu Leu Gly Trp Met Leu Leu Ser Gln Gly Cys Ser Tyr Gly Val
50 55 60
Gly Asp Asp Cys Leu Pro Pro Glu Glu Pro Val Pro Ile Arg Met Ala
65 70 75 80
Ile Ala Glu Gly Lys Leu Ser Thr Arg Ala Pro Val Thr Thr Ile Asp
85 90 95
Ala Ser Asn Leu Ser Asn Val Gly Ile Tyr Ala Val Ser Glu Gly Ser
100 105 110
Ile Ala Gly Gln Tyr Pro Trp Thr Ser Thr Pro Phe Ala Leu Asn Leu
115 120 125
Val Pro Ser Gly Ile Ser Gly Ser Gln Leu Ser Phe Asn Pro Lys Leu
130 135 140
Tyr Tyr Pro Leu Gly Gly Lys Arg Val Ile Phe Tyr Ser Tyr Tyr Pro
145 150 155 160
Arg Thr Thr Ala Thr Ser Gly Ser Asn Tyr Ile Thr Ala Pro Gly Asn
165 170 175
Gly Val Ala Pro Ala Tyr His Phe Thr Leu Thr Gly Ala Glu Asp Ile
180 185 190
Met Tyr Ala Ala Gly Thr Pro Thr Gly Ser Thr Ser Thr Met Pro Val
195 200 205
Ser Leu Thr Phe Asn His Val Leu Thr Gln Leu Gln Leu Asn Thr Ser
210 215 220
Leu Leu Gly Ala Leu Ser Ser Ile Lys Leu Leu Gly Val Tyr Asn Lys
225 230 235 240
Gly Thr Leu Asp Ile Gly Asn Gly Asn Val Thr Tyr Asp Ser Ser Thr
245 250 255
Thr Asp Ile Thr Leu Thr Val Pro Leu Leu Gly Ser Val Thr Asn Thr
260 265 270
Val Met Val Pro Ala Gly Val Ala Ser Tyr Lys Val Glu Val Val Leu
275 280 285
Leu Leu Ser Leu Leu Lys Arg Thr Tyr Leu Val Lys Pro Thr Ser Gly
290 295 300
Asn Phe Gln Pro Gly Val Ile Tyr Thr Ile Ser Leu
305 310 315

<210> 8740
<211> 170
<212> PRT
<213> B.fragilis

<400> 8740
Glu Tyr Lys Ser Met Glu Ile His Ile Gly Asn Arg Val Ala Glu Ile
1 5 10 15
Glu Leu Val Ser Lys Glu Asp Asn Lys Val Val Leu Thr Ile Asp Gly

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<210> 8741
<211> 449
<212> PRT
<213> B.fragilis
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<400> 8741															
Lys 1	Glu	Lys	Arg	Ile 5	Met	Asn	Ala	Ala	Lys 10	Val	Leu	Glu	Asp	Leu 15	Lys
Arg	Arg	Phe	Pro	Asn 20	Glu	Pro	Glu	Tyr 25	His	Gln	Ala	Val	Glu 30	Glu	Val
Leu	Ser	Thr	Ile	Glu	Glu	Glu	Tyr	Asn 40	Lys	His	Pro	Glu	Phe 45	Asp	Lys
Ala	Asn	Leu	Ile	Glu	Arg	Leu	Cys	Ile 55	Pro	Asp	Arg	Val	Tyr 60	Gln	Phe
Arg 65	Val	Thr	Trp	Val	Asp 70	Asp	Lys	Gly	Asn 75	Val	Gln	Thr	Asn	Met	Gly 80
Tyr	Arg	Val	Gln	His 85	Asn	Asn	Ala	Ile	Gly 90	Pro	Tyr	Lys	Gly 95	Gly	Ile
Arg	Phe	His	Ala	Ser 100	Val	Asn	Leu	Gly 105	Ile	Leu	Lys	Phe	Leu 110	Ala	Phe
Glu	Gln	Thr	Phe	Lys	Asn	Ser	Leu	Thr 120	Thr	Leu	Pro	Met	Gly 125	Gly	Gly
Lys	Gly	Gly	Ser	Asp	Phe	Ser	Pro	Arg	Gly	Lys	Ser	Asn	Ala	Glu	Val
Met 145	Arg	Phe	Thr	Gln	Ala 150	Phe	Met	Leu	Glu	Leu	Trp	Arg	His	Ile	Gly 160
Pro	Glu	Thr	Asp	Val	Pro	Ala	Gly	Asp	Ile 170	Gly	Val	Gly	Gly	Arg 175	Glu
Val	Gly	Phe	Met	Phe 180	Gly	Met	Tyr	Lys 185	Lys	Leu	Ser	His	Glu 190	Phe	Thr
Gly	Thr	Phe	Thr	Gly	Lys	Gly	Arg	Glu	Phe	Gly	Gly	Ser	Leu 205	Ile	Arg
Pro	Glu	Ala	Thr	Gly	Tyr	Gly	Asn	Ile 215	Tyr	Phe	Leu	Met	Glu	Met	Leu
Lys 225	Thr	Lys	Gly	Thr	Asp 230	Leu	Lys	Gly	Lys	Val	Cys	Leu	Ile	Ser	Gly 240
Ser	Gly	Asn	Val	Ala	Gln	Tyr	Thr	Ala	Glu	Lys	Val	Leu	Glu	Leu	Gly
Gly	Lys	Val	Val	Thr	Met	Ser	Asp	Ser	Asp	Gly	Tyr	Ile	Tyr	Asp	Pro

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      260      265      270
Asp Gly Ile Asp Arg Ala Lys Leu Asp Tyr Ile Met Glu Leu Lys Asn
      275      280      285
Leu Tyr Arg Gly Arg Ile Arg Glu Tyr Ala Glu Thr Tyr Gly Cys Lys
      290      295      300
Tyr Val Glu Gly Ala Arg Pro Trp Gly Glu Lys Gly Asp Ile Ala Leu
      305      310      315      320
Pro Ser Ala Thr Gln Asn Glu Leu Asn Gly Asp Asp Ala Arg Lys Leu
      325      330      335
Val Ala Asn Gly Val Ile Ala Val Ser Glu Gly Ala Asn Met Pro Ser
      340      345      350
Thr Pro Glu Ala Ile Lys Val Phe Gln Asp Ala Lys Ile Leu Tyr Ala
      355      360      365
Pro Gly Lys Ala Ala Asn Ala Gly Gly Val Ser Val Ser Gly Leu Glu
      370      375      380
Met Thr Gln Asn Ser Ile Lys Leu Ser Trp Ser Ser Glu Glu Val Asp
      385      390      395      400
Glu Lys Leu Lys Ser Ile Met Lys Asn Ile His Glu Ala Cys Val Gln
      405      410      415
Tyr Gly Thr Glu Pro Asp Gly Tyr Val Asn Tyr Val Lys Gly Ala Asn
      420      425      430
Val Ala Gly Phe Met Lys Val Ala Lys Ala Met Met Ala Gln Gly Ile
      435      440      445
Val

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<210> 8742
 <211> 294
 <212> PRT
 <213> B.fragilis

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<400> 8742
Asn Asn Arg Ser Met Lys Lys Leu Met Phe Ala Val Ile Ala Cys Ala
1      5      10      15
Met Gly Leu Ser Gly Cys Ser Ser Glu Asp Asp Cys Ala Thr Asn Pro
20      25      30
Glu Pro Ala Gly Asp Val Thr Glu Ile Lys Leu Ser Ala Gly Ile Gln
35      40      45
Gly Val Ala Thr Arg Ser Pro Val Ser Thr Asn Asp Asn Ile Thr Ala
50      55      60
Pro Phe Val Ala Ser Ala Thr Thr Gly Asp Tyr Thr Thr Asn Ala Trp
65      70      75      80
Ser Ser Thr Val Thr Phe Val Ala Ser Pro Thr Pro Thr Ala Ala Leu
85      90      95
Ser Phe Ser Pro Ala Arg Tyr Tyr Pro Val Asp Asn Ser Pro Ile Tyr
100     105     110
Ile Arg Gly Tyr Tyr Pro Ala Gly Thr Leu Ser Gly Lys Thr Val Thr
115     120     125
Leu Ala Gly Asp Gly Thr Glu Asp Val Met Leu Thr Ala Gln Ala Ser
130     135     140
Gly Thr Lys Ala Thr Ala Gly Ala Leu Ser Phe Val Phe Asn His Leu
145     150     155     160
Leu Thr Gln Leu Gln Phe Lys Leu Val Ala Gly Ala Gly Tyr Pro Ala
165     170     175
Ser Gly Val Asn Val Thr Ser Leu Val Ile Lys Gln Gln Lys Thr Pro
180     185     190
Ala Thr Leu Asp Leu Asn Thr Ser Ser Leu Thr Tyr Thr Thr Lys Asp
195     200     205
Leu Thr Leu Ser Gly Thr Phe Pro Ile Leu Thr Ala Gly Ser Thr Ile

```

210		215		220
Asn Asn Tyr Pro Met Val Lys Ser Gly Glu Ala Leu Thr Val Ala Val				
225		230		235
Thr Thr Ser Asp Gly Val Thr Tyr Pro Glu Ser Thr Ile Ser Val Thr				
	245		250	255
Thr Glu Val Gly Lys Ser His Leu Ile Thr Leu Thr Phe Thr Pro Lys				
	260		265	270
Glu Ile Thr Ser Ser Ile Ser Val Thr Ala Trp Gln Thr Gly Gly Thr				
	275		280	285
Gly Ser Ser Thr Leu Gln				
290				

<210> 8743

<211> 936

<212> PRT

<213> B.fragilis

<400> 8743

Arg Gln Thr Ser Ile Leu Gln Met Phe Ser Leu His Ser Pro Asp Asp				
1	5	10	15	
Ser Tyr Asp Glu Ala Phe Leu Ala Asn Tyr Ile Ser Ile Asn Leu Lys				
	20	25	30	
Pro Glu Ile Leu Arg Ile Ser Gly Val Gly Asp Met Met Ile Met Glu				
	35	40	45	
Gly Asp Tyr Ser Leu Arg Ile Trp Met Lys Pro Asp Val Met Ala Gln				
	50	55	60	
Tyr Arg Leu Ile Pro Ser Asp Val Ser Thr Val Leu Ala Glu Gln Asn				
	65	70	75	80
Ile Glu Ser Ala Thr Gly Ser Phe Gly Glu Asn Ser Asp Glu Thr Tyr				
	85	90	95	
Gln Tyr Thr Met Lys Tyr Lys Gly Arg Arg Ile Thr Pro Glu Glu Phe				
	100	105	110	
Gly Glu Ile Val Ile Arg Ser Thr Asp Asp Gly Gln Val Leu Lys Leu				
	115	120	125	
Lys Asp Ile Ala Thr Ile Glu Leu Gly Gln Glu Ser Tyr Ala Tyr Ser				
	130	135	140	
Gly Thr Thr Asp Gly His Asn Gly Val Ser Cys Met Leu Phe Gln Thr				
	145	150	155	160
Ala Gly Ser Asn Ala Thr Glu Val Asn Asn Gln Ile Asn Arg Phe Leu				
	165	170	175	
Glu Glu Ala Arg Lys Glu Leu Pro Gln Gly Val Glu Leu Thr Gln Leu				
	180	185	190	
Met Ser Ser Asn Asp Phe Leu Tyr Ala Ser Ile His Glu Val Val Lys				
	195	200	205	
Thr Leu Leu Glu Ala Ile Leu Leu Val Ile Leu Val Val Tyr Val Phe				
	210	215	220	
Leu Gln Asp Ile Arg Ser Thr Leu Ile Pro Leu Val Gly Ile Ile Val				
	225	230	235	240
Ser Leu Ile Gly Thr Phe Ala Phe Met Ala Ile Ala Gly Phe Ser Ile				
	245	250	255	
Asn Leu Ile Thr Leu Phe Ala Leu Val Leu Val Ile Gly Thr Val Val				
	260	265	270	
Asp Asp Ala Ile Val Val Val Glu Ala Val Gln Ala Arg Phe Asp Val				
	275	280	285	
Gly Tyr Lys Ser Ser Tyr Met Ala Ser Val Asp Ala Met Lys Gly Ile				
	290	295	300	
Ser Asn Ala Val Ile Thr Ser Ser Leu Val Phe Met Ala Val Phe Ile				
	305	310	315	320
Pro Val Ser Phe Met Ser Gly Thr Ser Gly Thr Phe Tyr Thr Gln Phe				

				325					330					335		
Gly	Leu	Thr	Met	Ala	Val	Ala	Val	Gly	Ile	Ser	Ala	Val	Asn	Ala	Leu	
			340					345					350			
Thr	Leu	Ser	Pro	Ala	Leu	Cys	Ala	Leu	Leu	Leu	Lys	Pro	Tyr	Ile	Asn	
		355					360					365				
Glu	Asp	Gly	Thr	Gln	Lys	Gln	Asn	Phe	Ala	Ala	Arg	Phe	Arg	Lys	Ala	
	370					375					380					
Phe	Asn	Ala	Ala	Phe	Asp	Val	Val	Val	Glu	Lys	Tyr	Lys	Gly	Ile	Val	
385					390					395					400	
Leu	Phe	Phe	Ile	Lys	Arg	Arg	Trp	Leu	Thr	Gly	Ser	Leu	Leu	Ile	Ala	
			405						410						415	
Ser	Ile	Ala	Leu	Leu	Val	Val	Leu	Met	Asn	Thr	Thr	Lys	Thr	Ser	Leu	
			420					425					430			
Val	Pro	Asp	Glu	Asp	Gln	Gly	Val	Val	Phe	Val	Asn	Val	Ser	Thr	Ala	
		435					440					445				
Ala	Gly	Ser	Ser	Leu	Arg	Thr	Thr	Asp	Asp	Val	Met	Lys	Arg	Ile	Glu	
	450					455					460					
Glu	Arg	Met	Glu	Gln	Ile	Pro	Gln	Val	Lys	His	Val	Gln	Lys	Val	Ala	
465					470					475					480	
Gly	Tyr	Gly	Leu	Leu	Ala	Gly	Gln	Gly	Ser	Ser	Phe	Gly	Met	Leu	Ile	
			485						490						495	
Leu	Lys	Leu	Lys	Pro	Trp	Asp	Glu	Arg	Pro	Gly	Lys	Glu	Asp	Asp	Val	
			500					505					510			
Gln	Ala	Val	Ile	Gly	Gln	Val	Tyr	Gly	Arg	Thr	Ala	Asp	Ile	Lys	Asp	
		515					520					525				
Ala	Ser	Val	Phe	Ala	Ile	Ser	Pro	Gly	Met	Ile	Pro	Gly	Tyr	Gly	Met	
	530					535					540					
Gly	Asn	Ala	Leu	Glu	Leu	His	Met	Gln	Asp	Lys	Thr	Gly	Gly	Asp	Val	
545					550					555					560	
Asn	Glu	Phe	Phe	Gln	Thr	Thr	Gln	Gln	Tyr	Leu	Gly	Ala	Leu	Asn	Gln	
			565						570						575	
Arg	Pro	Glu	Ile	Ala	Met	Ala	Tyr	Ser	Thr	Phe	Asp	Val	Arg	Tyr	Pro	
			580					585					590			
Gln	Trp	Leu	Val	Glu	Val	Asp	Pro	Ser	Lys	Cys	Lys	Arg	Ala	Gly	Ile	
		595					600					605				
Thr	Pro	Asp	Gln	Val	Leu	Ser	Thr	Leu	Ser	Gly	Tyr	Tyr	Gly	Gly	Gln	
	610					615					620					
Tyr	Val	Ser	Asn	Phe	Asn	Arg	Phe	Ser	Lys	Val	Tyr	Lys	Val	Met	Ile	
625					630					635					640	
Gln	Ser	Asp	Pro	Gln	Tyr	Arg	Leu	Asp	Glu	Ala	Ser	Leu	Asn	Asn	Thr	
			645						650					655		
Phe	Val	Arg	Met	Ser	Asn	Gly	Glu	Met	Ala	Pro	Leu	Ser	Gln	Phe	Leu	
			660													

Met Leu Ile Gly Leu Leu Ala Lys Thr Ala Ile Leu Leu Thr Glu Tyr
805 810 815
Ala Ala Glu Arg Arg Lys Ala Gly Met Gly Leu Ile Ala Ser Ala Leu
820 825 830
Ser Ala Ala Lys Ala Arg Leu Arg Pro Ile Leu Met Thr Ala Leu Thr
835 840 845
Met Ile Phe Gly Leu Leu Pro Leu Met Val Ala Ser Gly Val Gly Ala
850 855 860
Asn Gly Asn Arg Ser Leu Gly Thr Gly Ala Val Gly Gly Met Val Ile
865 870 875 880
Gly Thr Leu Ala Leu Leu Phe Ile Val Pro Ser Leu Phe Ile Ala Phe
885 890 895
Gln Trp Leu Gln Glu Arg Ile Arg Pro Val Gln Ile Glu Pro Ser His
900 905 910
Asp Trp Gln Ile Gln Thr Glu Gln Glu Val Ser Glu His Glu Lys Glu
915 920 925
Glu Ala Lys Asn Arg Pro Leu Lys
930 935

<210> 8744

<211> 102

<212> PRT

<213> B.fragilis

<400> 8744

His Lys Lys Gly Cys Met Asn Asp Lys Ile Lys Ile Asn Leu Gln Ile
1 5 10 15
Ala Asp Ser Tyr Tyr Pro Leu Thr Ile Asn Arg Asp Glu Glu Glu Thr
20 25 30
Val Arg Glu Ala Ala Lys Gln Val Asn Ile Arg Leu Asn Ala Tyr Arg
35 40 45
Glu His Tyr Arg Asn Val Ala Pro Glu Lys Ile Ile Ala Met Val Ala
50 55 60
Tyr Gln Phe Ser Leu Glu Lys Leu Gln Leu Leu Gln Arg Asn Asp Thr
65 70 75 80
Gln Pro Tyr Thr Ala Lys Ile Glu Glu Leu Thr Glu Met Leu Glu Glu
85 90 95
Tyr Phe Arg Asn Glu Glu
100

<210> 8745

<211> 185

<212> PRT

<213> B.fragilis

<400> 8745

Lys Arg Thr Gly Leu Ile Cys Asn Arg Tyr Glu Asn Ile Leu Ser Cys
1 5 10 15
Arg Asp Asp Ile Arg Arg Ile Asn Thr Thr Phe Val Gly Ile Gln Arg
20 25 30
Phe Gln Pro Asn Ile Asn Pro Tyr Asn Met Thr Pro Asp Phe Asp Tyr
35 40 45
Ser Glu Val Pro Phe Gly Phe Asn Tyr Cys Leu Asn Lys Ser Cys Lys
50 55 60
Gln Ala Ser Thr Cys Leu Arg Tyr Arg Leu Tyr Thr His Ile Pro Ala
65 70 75 80
Ala Cys Gln Thr Ile Arg Ile Ile Asn Pro Val Tyr Ala Ala Thr Ile
85 90 95
Asp Asp Val Cys Pro Phe Phe Met Pro Asp Lys Lys Val Arg Tyr Ala

```

      100      105      110
Leu Gly Ile Thr His Leu Leu Asp His Val Pro Tyr Ser Asp Ala Val
      115      120      125
Ser Ile Lys Arg Gln Met Leu Ala His Phe Lys Gln Ala Thr Tyr Tyr
      130      135      140
Arg Cys Arg Arg Lys Glu Arg Met Leu Asp Pro Ser Glu Gln Glu Tyr
145      150      155      160
Ile Arg Lys Leu Phe Val Ser Lys Gly Ile Lys Glu Leu Pro Val Tyr
      165      170      175
Asp Glu Tyr Ile Glu Lys Tyr Asp Trp
      180      185

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<210> 8746

<211> 96

<212> PRT

<213> B.fragilis

<400> 8746

```

Gly Met Lys Gly Thr Tyr Trp Tyr Ala Val Asp Tyr Ala Gly Thr Gly
1      5      10      15
His Leu Phe Thr Tyr Lys Pro Glu Arg Asp Ala Gly Ile Trp Asn Gly
      20      25      30
Glu Glu Ala Leu Gln Val Ser Gln Gly Ala Leu Arg Glu Val Phe Pro
      35      40      45
Lys Ile Thr Trp Gln Asp Ser Pro Val Val Val Thr Leu Glu Val Leu
      50      55      60
Pro Cys Glu Glu Thr Phe Arg Leu Arg Leu Ser Lys Asn Cys Gly Tyr
65      70      75      80
Ile Leu Arg Lys Tyr Leu Arg Phe Pro Arg Lys Glu Lys Thr Asn Asp
      85      90      95

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<210> 8747

<211> 142

<212> PRT

<213> B.fragilis

<400> 8747

```

Tyr Pro Leu Ile Lys Arg Ile Thr Asn Lys Asn Ile Met Asn Leu Arg
1      5      10      15
Thr Phe Ile Glu Arg Pro Val Leu Ser Ala Val Ile Ser Ile Thr Ile
      20      25      30
Val Val Val Gly Ile Ile Gly Leu Phe Thr Leu Pro Val Glu Gln Tyr
      35      40      45
Pro Asp Ile Ala Pro Pro Thr Ile Met Val Ser Thr Ser Tyr Phe Gly
      50      55      60
Ala Ser Ala Glu Thr Leu Gln Lys Ser Val Ile Ala Pro Leu Glu Glu
65      70      75      80
Ala Ile Asn Gly Val Glu Asp Met Thr Tyr Met Thr Ser Ser Ala Thr
      85      90      95
Asn Ala Gly Thr Val Ser Ile Thr Val Tyr Phe Lys Gln Gly Thr Asp
      100      105      110
Pro Asp Met Ala Ala Val Asn Val Gln Asn Arg Val Ser Lys Ala Thr
      115      120      125
Gly Gln Leu Pro Ser Glu Val Asn Gln Val Gly Val Thr Thr
      130      135      140

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<210> 8748

<211> 374

<212> PRT

<213> B.fragilis

<400> 8748

```

Ile Gly Ile Met Ile Glu Lys Val Ser Lys Val Lys Gln Ala Ile Leu
1      5      10      15
Phe Ala Cys Cys Leu Ala Ala Thr Gly Cys Lys Gln Ala Pro Gln Ala
20      25      30
Thr Val Glu Ser Gly Tyr Lys Val Ile Thr Leu Ala Pro Thr Asp Arg
35      40      45
Thr Leu Ser Ser Thr Tyr Ser Ala Thr Ile Arg Gly Arg Gln Asp Ile
50      55      60
Glu Ile Tyr Pro Gln Val Ser Gly Thr Leu Thr Gln Val Cys Val Ser
65      70      75      80
Glu Gly Glu Arg Val Lys Arg Gly Gln Ser Leu Phe Ile Ile Asp Gln
85      90      95
Val Pro Tyr Glu Ala Ala Leu Gln Thr Ala Leu Ala Asn Val Glu Ala
100     105     110
Ala Lys Ala Ser Leu Ala Thr Ala Gln Leu Thr Tyr Asp Ser Lys Gln
115     120     125
Glu Leu Tyr Lys Gln Asn Val Ser Thr Phe Asp Leu Ser Thr Ala
130     135     140
Lys Asn Ser Leu Leu Ala Gln Ala Gln Leu Ala Gln Met Lys Ala
145     150     155     160
Gln Glu Val Asn Ala Arg Asn Asn Leu Ser Tyr Thr Leu Val Lys Ser
165     170     175
Pro Ala Asp Gly Val Val Gly Thr Leu Pro Tyr Arg Val Gly Thr Leu
180     185     190
Val Ser Ala Ser Leu Pro Glu Pro Leu Thr Thr Val Ser Asp Asn Ser
195     200     205
Asp Met Tyr Val Tyr Phe Ser Met Thr Glu Asn Gln Leu Leu Gly Leu
210     215     220
Ile Arg Arg Tyr Gly Ser Lys Glu Glu Ala Leu Lys Gln Met Pro Glu
225     230     235     240
Ile Gly Leu Gln Leu Asn Asp Arg Ser Asp Tyr Pro Gln Gln Gly Arg
245     250     255
Ile Glu Thr Ile Ser Gly Val Ile Asp Arg Asn Thr Gly Thr Val Ser
260     265     270
Leu Arg Ala Val Phe Pro Asn Arg Glu Gly Leu Leu His Ser Gly Gly
275     280     285
Ala Gly Asn Val Ile Val Pro Thr Glu Lys Ala Gly Ala Leu Val Ile
290     295     300
Pro Gln Ala Ala Thr Phe Glu Val Gln Asp Lys Val Phe Ala Tyr Lys
305     310     315     320
Val Val Asp Gly Lys Ala Gln Ser Ala Pro Val Gln Val Thr Arg Val
325     330     335
Asn Gly Gly Gln Glu Tyr Ile Val Glu Ser Gly Leu Gln Pro Gly Asp
340     345     350
Val Ile Val Ala Glu Gly Val Gly Leu Leu Arg Glu Gly Thr Glu Ile
355     360     365
Lys Thr Ile Asn Gly Glu
370

```

<210> 8749

<211> 61

<212> PRT

<213> B.fragilis

<400> 8749

Ile Arg Ile Met Lys Glu Leu Val Glu Lys Ile Ala Thr Leu Val Ala

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1           5           10           15
Glu Phe Asn Lys Asp Ala Asn Ala Gln Ile Glu Asn Gly Asn Lys Ala
      20           25           30
Ala Gly Thr Arg Ala Arg Lys Ala Ser Leu Glu Ile Glu Lys Ala Met
      35           40           45
Lys Glu Phe Arg Lys Val Ser Leu Glu Glu Ser Lys Lys
      50           55           60

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<210> 8750
 <211> 226
 <212> PRT
 <213> B.fragilis

```

<400> 8750
Arg Gly Val Met Gly Arg Arg Asn Arg Ile Met His Lys Met Thr Glu
1           5           10           15
Met Glu Ile Thr Tyr Asn Ile Gln Thr Ile Tyr Thr Tyr Arg Asn Glu
      20           25           30
Asn Met Pro Glu Asp Ser Thr Lys Val Tyr Arg Phe Ser Arg Lys Val
      35           40           45
Ser Arg Arg Ile Trp Lys Tyr Ala Leu Ser Thr Pro Asp Phe Arg Ser
      50           55           60
Phe Leu Glu Ala Lys Ser Arg Glu Cys Ser Asp Thr Ile Ser Arg Met
65           70           75           80
Asn Gln Glu Leu Gln Asn Val Val Val Thr Phe His Ile Ser Phe Asn
      85           90           95
Gly Asp Ile Pro Phe Val Gly Ser Ala Val Cys Phe Phe Lys Thr Val
      100          105          110
Ser Gly Gly Glu Leu Arg Cys Arg Tyr Asn Gln Ser Ile Leu Phe Glu
      115          120          125
Glu Thr Leu Pro Gly Gly Lys Tyr Leu Arg Asp Ser Ser Ile Glu Gly
      130          135          140
Met Ile Gln Lys Glu Arg Pro Glu Asn Ser Ala Phe Gly Leu Leu Leu
145          150          155          160
Phe Ala Val Ser Leu Val Ser Val Phe Gly Ile Leu Thr Val Pro Phe
      165          170          175
Ala Phe Asn Leu Ala Arg Phe Pro Leu Val Pro Ala Gly Phe Thr Val
      180          185          190
Ile Ala Val Leu Ile Leu Leu Thr Val Cys Leu Arg His Met Asn Arg
      195          200          205
Arg Arg Ile Thr Arg Arg Met Glu Ile Gln Asp Lys Arg Gln Glu Pro
      210          215          220
Ile Lys
225

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<210> 8751
 <211> 411
 <212> PRT
 <213> B.fragilis

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<400> 8751
Phe Cys Tyr Ile Lys Leu Lys Leu Met Thr Ser Val Lys Leu Lys Leu
1           5           10           15
Asn Lys Thr Arg Ala Leu Lys Asp Gly Asn Tyr Pro Val Val Phe Gln
      20           25           30
Leu Ile His Gln Lys Arg Lys Lys Ile Ile Tyr Thr Lys Tyr Arg Met
      35           40           45
Lys Glu Glu Asp Phe Ile Ile Ile Ala Gly Asn Val Val Ser Gly Cys
      50           55           60

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His Thr Gly Cys Lys Ile Ser Arg Glu Leu Leu Arg Ile Tyr Lys Gln
65      70      75      80
Leu Thr Ala Arg Val Arg Arg Leu Glu Ser Arg Gly Glu Glu Tyr Thr
      85      90      95
Ile Asn Asp Ile Thr Thr Val Met Phe Ser Lys Val Thr Gly Lys Phe
      100     105     110
Leu Leu Leu Pro Tyr Ile Asp Thr Gln Ile Glu Trp Lys Lys Ser Ile
      115     120     125
Met Lys Asn Gly Thr Ala Ala Ala Tyr Gln Ser Thr Tyr Ala Ser Leu
      130     135     140
Ala Lys Tyr Ile Gly Lys Lys Glu Val Lys Ile Ser Gln Val Asn His
145      150     155     160
Arg Phe Val Thr Cys Tyr Arg Asp Phe Leu Ser Lys Asn Gly Ala Thr
      165     170     175
Glu Asn Thr Ile Gly Tyr Tyr Leu Arg Asn Phe Arg Ala Leu Tyr Asn
      180     185     190
Leu Ala Val Lys Asp Gly Leu Val Pro Pro Cys Asp Tyr Pro Phe Lys
      195     200     205
Glu Ile Cys Thr Lys Pro Cys Lys Thr Val Lys Arg Ala Leu Asp Arg
      210     215     220
Glu Gln Met Val Lys Leu Ala Cys Leu Ser Leu His Ser Asp Ala Glu
225      230     235     240
Leu Lys Arg Ser Leu Asp Leu Phe Leu Phe Gly Phe Tyr Ala Gln Gly
      245     250     255
Met Ala Phe Val Asp Ile Ala Tyr Leu Lys Trp Lys Asn Ile Ser Gly
      260     265     270
Asn Arg Ile Ile Tyr Arg Arg His Lys Ser Lys Gln Leu Ile Gln Ile
      275     280     285
Val Ile Thr Pro Gln Ile Lys Ser Ile Ile Asp Glu His Gly Asn Asn
      290     295     300
Thr Asn Asn Ala Glu Glu Tyr Val Phe Ser Val Ile Lys Asn Asn Ala
305      310     315     320
Asn Glu Tyr Thr Gln Tyr Arg Thr Ala Leu Gly Arg Thr Asn Arg His
      325     330     335
Leu Lys Ile Ile Ser Ala Lys Leu Lys Ile Asp Pro Pro Leu Thr Thr
      340     345     350
Tyr Thr Ala Arg His Thr Trp Ala Thr Leu Ala Arg Glu Tyr Gly Ala
      355     360     365
Pro Val Ser Ala Ile Ser Ala Gly Leu Gly His Thr Lys Glu Glu Met
      370     375     380
Thr Leu Val Tyr Leu Lys Glu Leu Asp Leu Ala Pro Leu His Arg Ile
385      390     395     400
Asn Lys Met Val Asn Asn Leu Leu Glu Arg Lys
      405     410

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<210> 8752

<211> 65

<212> PRT

<213> B.fragilis

<400> 8752

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Arg Ile Asn Met Ala Trp Met Val Thr Gln Lys Asn Ile Lys Ile His
1      5      10      15
Thr Cys Ile Asp Gly Ile Asp Ser Val Glu Asp Val Arg Val Val Ile
      20      25      30
Ser His Lys Lys Leu Lys Ala Leu Gly Ala Lys Arg Arg Val Tyr Lys
      35      40      45
Asp Thr Arg Glu Ser Phe Phe Leu Ile Glu Ser Asp Cys Glu Ile Ile
50      55      60

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<210> 8754
 <211> 507
 <212> PRT
 <213> B.fragilis

<400> 8754

Glu	Met	Asn	Met	Ile	Lys	Arg	Ile	Leu	Val	Ala	Asn	Arg	Gly	Glu	Ile	1	5	10	15
Ala	Val	Arg	Val	Met	Arg	Ser	Cys	Arg	Glu	Met	Glu	Ile	Thr	Ser	Ile	20	25	30	
Ala	Val	Phe	Ser	Glu	Ala	Asp	Arg	Thr	Ala	Lys	His	Val	Leu	Tyr	Ala	35	40	45	
Asp	Glu	Ala	Tyr	Cys	Ile	Gly	Pro	Ala	Ala	Ser	Lys	Glu	Ser	Tyr	Leu	50	55	60	
Asn	Ile	Glu	Lys	Ile	Ile	Glu	Val	Ala	Lys	Ser	Cys	His	Ala	Asp	Ala	65	70	75	80
Ile	His	Pro	Gly	Tyr	Gly	Phe	Leu	Ser	Glu	Asn	Ala	Thr	Phe	Ala	Arg	85	90	95	
Arg	Cys	Arg	Glu	Gly	Ile	Thr	Phe	Ile	Gly	Pro	Asp	Pro	Glu	Thr		100	105	110	
Met	Glu	Ala	Met	Gly	Asp	Lys	Ile	Ser	Ala	Arg	Ile	Lys	Met	Ile	Glu	115	120	125	
Ala	Gly	Val	Pro	Val	Val	Pro	Gly	Thr	Gln	Asp	Asn	Leu	Lys	Ser	Val	130	135	140	
Glu	Glu	Ala	Val	Glu	Leu	Cys	Asn	Gln	Ile	Gly	Tyr	Pro	Val	Met	Leu	145	150	155	160
Lys	Ala	Ser	Met	Gly	Gly	Gly	Gly	Lys	Gly	Met	Arg	Leu	Ile	His	His	165	170	175	
Ala	Asp	Glu	Val	Ala	Glu	Ala	Tyr	Thr	Thr	Ala	Lys	Ser	Glu	Ser	Leu	180	185	190	
Ser	Ser	Phe	Gly	Asp	Asp	Thr	Val	Tyr	Leu	Glu	Lys	Phe	Val	Glu	Glu	195	200	205	
Pro	His	His	Ile	Glu	Phe	Gln	Ile	Leu	Gly	Asp	Lys	His	Gly	Asn	Val	210	215	220	
Ile	His	Leu	Cys	Glu	Arg	Glu	Cys	Ser	Val	Gln	Arg	Arg	Asn	Gln	Lys	225	230	235	240
Ile	Val	Glu	Glu	Ser	Pro	Ser	Val	Phe	Ile	Thr	Pro	Glu	Leu	Arg	Arg	245	250	255	
Asp	Met	Gly	Glu	Lys	Ala	Val	Ala	Ala	Lys	Ala	Val	Asn	Tyr	Ile		260	265	270	
Gly	Ala	Gly	Thr	Ile	Glu	Phe	Leu	Val	Asp	Lys	His	Arg	Asn	Tyr	Tyr	275	280	285	
Phe	Leu	Glu	Met	Asn	Thr	Arg	Leu	Gln	Val	Glu	His	Pro	Ile	Thr	Glu	290	295	300	
Glu	Val	Val	Gly	Val	Asp	Leu	Val	Lys	Glu	Gln	Ile	Lys	Val	Ala	Asp	305	310	315	320
Gly	Gln	Val	Leu	Gln	Leu	Arg	Gln	Glu	Asp	Ile	Gln	Gln	Arg	Gly	His	325	330	335	
Ala	Ile	Glu	Cys	Arg	Ile	Cys	Ala	Glu	Asp	Thr	Glu	Met	Asn	Phe	Met	340	345	350	
Pro	Ser	Pro	Gly	Val	Ile	Lys	Gln	Ile	Thr	Glu	Pro	Asn	Gly	Ile	Gly	355	360	365	
Val	Arg	Ile	Asp	Ser	Tyr	Val	Tyr	Glu	Gly	Tyr	Glu	Ile	Pro	Ile	Tyr	370	375	380	
Tyr	Asp	Pro	Met	Ile	Gly	Lys	Leu	Ile	Val	Trp	Ala	Thr	Thr	Arg	Glu	385	390	395	400
Tyr	Ala	Ile	Glu	Arg	Met	Arg	Arg	Val	Leu	His	Glu	Tyr	Lys	Leu	Thr	405	410	415	

Gly Val Lys Asn Asn Ile Ser Tyr Leu Arg Ala Ile Met Asp Thr Pro
 420 425 430
 Asp Phe Val Glu Gly His Tyr Asp Thr Gly Phe Ile Ala Lys Asn Gly
 435 440 445
 Glu Val Leu Gln Gln Cys Ile Thr Arg Thr Ser Glu Arg Ala Glu Asn
 450 455 460
 Ile Ala Leu Ile Ala Ala Tyr Met Asp Tyr Leu Met Asn Leu Glu Glu
 465 470 475 480
 Asn Asn Ser Gly Leu Ala Ala Asp Asn Arg Pro Ile Ser Lys Trp Lys
 485 490 495
 Glu Phe Gly Leu His Lys Gly Val Leu Arg Ile
 500 505

<210> 8755
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 8755
 Ile Arg Asn Ile Ser Phe Lys Leu Thr Gly Asn Asn Thr Thr Trp Gln
 1 5 10 15
 Thr Leu Ser Tyr Leu Arg Cys Tyr Thr Ser Thr Tyr Lys Lys Gln Pro
 20 25 30
 Pro Met Ser Gln Glu Met Lys Ala Phe Pro Gly Met Lys Ala Ser Gln
 35 40 45
 Lys Leu Asn Phe Asn His Ser Glu Val Ile Ile Asn Ser Ala Pro Asp
 50 55 60
 Arg Lys Val Ile Leu Glu Ser Thr Leu Leu Glu Gln Ser Phe Val Glu
 65 70 75 80
 Lys Gly Cys Gly Glu Thr Thr Pro His Ala Trp Lys Thr Thr Ser Lys
 85 90 95
 Glu Ser Leu Lys Arg Pro Val Phe Asn Glu Ile Trp Tyr Thr
 100 105 110

<210> 8756
 <211> 462
 <212> PRT
 <213> B.fragilis

<400> 8756
 Leu Ile Asp Met Asn Leu Ile Asn Asp Ile Leu Trp Thr Tyr Ile Leu
 1 5 10 15
 Ile Ala Met Leu Leu Gly Cys Ala Ile Trp Phe Thr Ile Lys Thr Arg
 20 25 30
 Phe Val Gln Phe Arg Met Ile Gly Glu Met Leu Arg Leu Leu Lys Asp
 35 40 45
 Ser Ala Gly Lys Glu Glu His Gly Glu Lys His Ile Ser Ser Phe Gln
 50 55 60
 Ala Phe Ala Ile Ser Leu Ala Ser Arg Val Gly Thr Gly Asn Leu Ala
 65 70 75 80
 Gly Val Ala Thr Ala Ile Ala Ile Gly Gly Pro Gly Ala Ile Phe Trp
 85 90 95
 Met Trp Ile Ile Ala Leu Leu Gly Ala Ser Ser Ala Phe Val Glu Ser
 100 105 110
 Thr Leu Ala Gln Leu Tyr Lys Glu Lys Gly Lys Glu Ser Phe Ile Gly
 115 120 125
 Gly Pro Ala Tyr Tyr Met Lys Lys Gly Leu Lys Lys Pro Trp Met Gly
 130 135 140
 Ile Leu Phe Ala Ile Leu Ile Thr Val Thr Phe Gly Phe Ala Phe Asn

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145          150          155          160
Ser Val Gln Ser Asn Thr Ile Cys Ala Ala Val Glu His Ala Phe Gly
          165          170          175
Ile Ser His Val Pro Met Gly Ile Ile Leu Thr Gly Leu Thr Leu Leu
          180          185          190
Ile Ile Phe Gly Gly Ile Gln Arg Ile Ala Lys Val Ser Ser Ile Ile
          195          200          205
Val Pro Val Met Ala Leu Gly Tyr Val Gly Leu Ala Leu Val Ile Val
          210          215          220
Leu Ile Asn Ile Thr His Leu Pro Asp Val Ile Gly Thr Ile Val Ser
225          230          235          240
His Ala Phe Gly Trp Gln Gln Ala Leu Gly Gly Gly Val Ala Ala Ala
          245          250          255
Leu Met Gln Gly Ile Lys Arg Gly Leu Phe Ser Asn Glu Ala Gly Met
          260          265          270
Gly Ser Ala Pro Asn Val Ala Ala Thr Ala Phe Val Ser His Pro Val
          275          280          285
Lys Gln Gly Leu Ile Gln Thr Leu Gly Val Phe Thr Asp Thr Leu Ile
          290          295          300
Ile Cys Ser Cys Thr Ala Phe Ile Ile Leu Phe Ser Gly Ala Pro Leu
305          310          315          320
Asp Gly Ser Thr Asn Gly Val Gln Leu Thr Gln His Ala Leu Asn Asn
          325          330          335
Glu Ile Gly Ser Ile Gly Gly Ile Phe Val Ala Val Ala Leu Phe Phe
          340          345          350
Phe Ala Phe Ser Ser Ile Ile Gly Asn Tyr Tyr Tyr Gly Glu Ala Asn
          355          360          365
Ile Arg Tyr Leu Thr His Lys Arg Trp Ile Val Tyr Leu Tyr Arg Leu
          370          375          380
Leu Val Gly Gly Met Val Trp Val Gly Ala Met Ser Thr Leu Asp Phe
385          390          395          400
Val Trp Gly Leu Ala Asp Ile Thr Met Gly Leu Met Ala Ile Cys Asn
          405          410          415
Leu Ile Ala Ile Ala Phe Leu Gly Lys Tyr Ala Phe Arg Leu Leu Gln
          420          425          430
Asp Tyr Arg Glu Gln Lys Lys Ser Gly Ile Lys Ser Pro Val Phe Thr
          435          440          445
Lys Asn Lys Met Lys Asp Ile Glu Lys Asp Ile Glu Cys Trp
          450          455          460

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<210> 8757

<211> 63

<212> PRT

<213> B.fragilis

<400> 8757

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Gln Thr Asp Ile Ala Ser Met Ala Asn His His Leu Asn Glu Glu Lys
1          5          10          15
Pro Ser Thr Lys Val Ser Gln Ser Leu Leu Leu Gly Asp Asn Phe Leu
          20          25          30
Ser Pro Glu Arg Lys Lys Phe Phe Thr Tyr Thr Thr Gln Ser Glu Thr
          35          40          45
Ile Glu Lys Gly Ile Asn Thr Ser Pro Ser Thr Gly Phe Phe His
          50          55          60

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<210> 8758

<211> 1255

<212> PRT

<213> B.fragilis

<400> 8758

Ser Ile Cys Met Ile Asn Lys Ile Ile Arg Tyr Phe Leu Glu Asn Arg
 1 5 10 15
 Val Ile Thr Ile Leu Leu Leu Thr Leu Val Val Val Trp Gly Ile Ser
 20 25 30
 Thr Ala Pro Phe Asn Trp His Gly Gly Ile Val Pro Arg Asn Pro Ile
 35 40 45
 Pro Val Asp Ala Ile Pro Asp Ile Gly Asp Asn Gln Gln Ile Val Ala
 50 55 60
 Thr Glu Trp Met Gly Arg Ser Pro Lys Asp Ile Gln Asp Gln Ile Thr
 65 70 75 80
 Tyr Pro Leu Thr Thr Ser Leu Leu Gly Ile Pro Gly Val Lys Thr Ile
 85 90 95
 Arg Ser Ser Ser Met Phe Gly Met Ser Phe Ile Tyr Ile Ile Phe Glu
 100 105 110
 Asp Asp Ile Glu Phe Tyr Trp Ser Arg Ser Arg Ile Leu Glu Lys Leu
 115 120 125
 Asn Ser Leu Pro Pro Gly Thr Leu Pro Glu Asn Val Gln Pro Thr Leu
 130 135 140
 Gly Pro Asp Ala Thr Ala Leu Gly Gln Ile Tyr Trp Tyr Thr Leu Glu
 145 150 155 160
 Gly Arg Asp Pro Lys Thr Gly Lys Pro Ala Gly Gly Trp Asn Ala Glu
 165 170 175
 Glu Leu Arg Thr Ile Gln Asp Phe Tyr Val Lys Tyr Ser Leu Ser Ala
 180 185 190
 Ala Glu Gly Val Ser Glu Val Ala Ser Ala Gly Gly Phe Ile Lys Glu
 195 200 205
 Tyr Gln Ile Glu Leu Asn Pro Asp Ala Met Tyr Ser Phe Asn Val Ser
 210 215 220
 Val Met Asp Val Met Asn Ala Val Lys Lys Ser Asn Leu Asp Ile Gly
 225 230 235 240
 Ala Glu Thr Met Glu Val Asn Lys Val Glu Tyr Leu Ile Arg Gly Leu
 245 250 255
 Gly Tyr Val Lys Asn Val Ala Asp Ile Glu Asn Thr Val Val Thr Val
 260 265 270
 Arg Glu Gly Val Pro Val Arg Ile Ser Asp Ile Ala Phe Val Asn Ile
 275 280 285
 Gly Pro Gly Thr Arg Arg Gly Gly Leu Asp Lys Glu Gly Val Glu Ala
 290 295 300
 Val Gly Gly Val Val Ile Ala Arg Tyr Gly Ser Asn Pro Leu Glu Val
 305 310 315 320
 Ile Asn Asn Val Lys Glu Lys Ile His Glu Met Asp Ala Gly Met Pro
 325 330 335
 Gln Lys Thr Leu Ala Asp Gly Thr Val Ser Lys Val Thr Val Val Pro
 340 345 350
 Phe Tyr Asp Arg Thr Gly Leu Ile Lys Glu Thr Ile Gly Thr Leu Glu
 355 360 365
 Thr Ser Leu Ser His Glu Ile Leu Ile Cys Ile Ile Val Ile Ile Val
 370 375 380
 Leu Val Leu Asn Leu Arg Ala Ser Val Val Ile Ala Ser Met Leu Pro
 385 390 395 400
 Ile Ala Val Leu Ala Thr Phe Ile Leu Met Arg Tyr Thr Gly Ile Glu
 405 410 415
 Ala Asn Ile Val Ala Leu Ser Gly Ile Ala Ile Ala Ile Gly Val Met
 420 425 430
 Val Asp Val Gly Val Val Phe Val Glu Ser Ile Ile Arg Tyr Met Glu
 435 440 445
 Met Pro Glu Asn Lys Gly Ile Thr Arg Gly Lys Pro Phe Val Gly Leu

450	455	460
Ile Tyr Lys Ala Val	Ser Glu Val Ser Gly Ala	Ile Ala Thr Ala Met
465	470	475
Ile Thr Thr Ile Val	Ser Phe Leu Pro Val Phe	Ala Met Gln Ala Gln
485	490	495
Glu Gly Lys Met Phe	Ser Pro Leu Ala Tyr Thr	Lys Thr Tyr Ala Leu
500	505	510
Ala Ser Ala Phe Val	Leu Gly Leu Ile Val	Leu Pro Thr Leu Ala Tyr
515	520	525
Ile Leu Phe Ser Val	Arg Ile Asp Ser Arg	Leu Ile Arg Arg Val Met
530	535	540
Asn Cys Val Leu Ile	Ala Ser Ala Ile Val	Leu Phe Ala Val Tyr Asp
545	550	555
Ser Val Pro Ala Leu	Gly Leu Thr Ala Val	Gly Ile Asn Asn Leu Leu
565	570	575
Ala Tyr Arg Trp Lys	Asn Pro Lys Thr Gly	Asn Tyr Val Asn Ile Gly
580	585	590
Ile Ala Leu Thr Val	Ala Val Phe Tyr Leu	Ser Glu Glu Trp Leu Pro
595	600	605
Met Gly Pro Gln Arg	Gly Leu Ser Val Asn	Val Leu Ile Val Ala Gly
610	615	620
Cys Val Ala Ile Ile	Leu Ala Leu Leu Trp	Ile Leu Val Ile Phe Tyr
625	630	635
Glu Arg Ile Leu Arg	Trp Cys Leu Ala Asn	Arg Trp Lys Phe Met Met
645	650	655
Ile Pro Ala Ala Thr	Val Val Cys Gly Phe	Leu Ile Gly Arg Ser Ile
660	665	670
Gly Lys Glu Phe Met	Pro Ser Leu Asn Glu	Gly Ser Phe Leu Leu Met
675	680	685
Pro Thr Ser Met Pro	His Thr Gly Ile Glu	Gln Asn Leu Asp Tyr Val
690	695	700
Glu Lys Leu Asp Lys	Arg Leu Ala Ala Ile	Pro Glu Val Glu Thr Ala
705	710	715
Ile Gly Lys Trp Gly	Arg Val Asn Ser Ala	Leu Asp Pro Ala Pro Val
725	730	735
Gln Met Phe Glu Asn	Thr Ile Asn Tyr Arg	Pro Glu Tyr Ile Ile Gly
740	745	750
Glu Asp Gly Lys Arg	Ala Arg Phe Arg Val	Asn Tyr Asp Gly Ala Phe
755	760	765
Leu Leu Lys Gly Gly	Gly Thr Tyr Asn Pro	Ala Asn Gly Phe Arg Leu
770	775	780
Ile Pro Ala Asp Ser	Leu Val Pro Asp Ser	Arg Gly Asp Tyr Phe Arg
785	790	795
Gln Trp Arg Pro Glu	Ile Lys Asn Ala Asn	Asp Ile Trp Gln Gln Ile
805	810	815
Val Asn Val Thr His	Leu Pro Gly Leu Thr	Ser Ala Pro Lys Leu Gln
820	825	830
Pro Ile Glu Ala Arg	Leu Val Met Leu Ser	Thr Gly Met Arg Ala Pro
835	840	845
Met Gly Val Lys Val	Tyr Gly Pro Thr Leu	Glu Asp Ile Glu Gln Gly
850	855	860
Gly Lys Ala Ile Glu	Gln Ala Leu Lys Ser	Val Pro Ser Val Ile Pro
865	870	875
Ser Ser Val Phe Tyr	Asp Arg Ala Val Gly	Ala Pro Tyr Leu Glu Ile
885	890	895
Lys Leu Asn Arg Glu	Ser Met Ala Arg Tyr	Gly Val Ala Val Gly Asp
900	905	910
Leu Gln Glu Val Leu	Ser Ala Ala Val Gly	Gly Met Ala Leu Thr Arg
915	920	925

Thr Val Glu Gly Arg Glu Arg Phe Pro Ile Arg Leu Arg Tyr Ala Arg
 930 935 940
 Glu Leu Arg Asp Ser Pro Glu Ala Leu Ser Met Leu Leu Val Pro Thr
 945 950 955 960
 Ala Thr Gly Ile Gln Val Pro Leu Lys Glu Leu Ala Asp Ile Glu Tyr
 965 970 975
 Ser Arg Gly Ala Gln Met Ile Gln Ser Glu Asn Thr Phe Leu Val Gly
 980 985 990
 Tyr Val Ile Phe Asp Lys Leu Ser Gly Arg Ala Glu Val Asp Val Val
 995 1000 1005
 Lys Glu Ala Ser Asn Leu Leu Glu Ala Lys Val Lys Ser Gly Glu Leu
 1010 1015 1020
 Leu Leu Pro Lys Gly Val Ser Tyr Lys Phe Ala Gly Asn Tyr Glu Gln
 1025 1030 1035 1040
 Gln Gln Arg Ala Thr Asp Arg Leu Met Ile Val Val Pro Leu Ala Leu
 1045 1050 1055
 Leu Ile Val Leu Leu Val Leu Tyr Phe Gln Phe Arg Thr Val Thr Ala
 1060 1065 1070
 Ser Leu Ile His Phe Ser Gly Val Phe Val Ala Phe Ala Gly Gly Phe
 1075 1080 1085
 Ile Leu Leu Trp Leu Tyr Gly Gln Pro Trp Phe Met Asn Phe Ser Ile
 1090 1095 1100
 Ala Gly Glu Asn Met Arg Asp Leu Phe Gln Met His Pro Ile Asn Leu
 1105 1110 1115 1120
 Ser Val Ala Val Trp Val Gly Phe Ile Ala Leu Phe Gly Val Ala Thr
 1125 1130 1135
 Asp Asp Gly Val Leu Met Gly Thr Tyr Ile His His Val Phe Leu Glu
 1140 1145 1150
 Arg Asp Pro Arg Thr Lys Tyr Asp Ile Arg Glu Ala Val Val Glu Ala
 1155 1160 1165
 Gly Leu Lys Arg Val Arg Pro Ala Ala Met Thr Thr Ala Thr Thr Leu
 1170 1175 1180
 Ile Ala Leu Leu Pro Val Leu Thr Ser Thr Gly Lys Gly Ala Asp Ile
 1185 1190 1195 1200
 Met Val Pro Met Ala Ile Pro Thr Phe Gly Gly Met Leu Ile Gln Ser
 1205 1210 1215
 Met Thr Met Phe Val Val Pro Val Leu Gln Cys Trp Trp Arg Glu Thr
 1220 1225 1230
 Val Glu Arg Arg Arg Glu Lys Lys Asn Gly Ser Glu Val Ser Glu Pro
 1235 1240 1245
 Val Thr Gly Ser Pro Gly Ile
 1250 1255

<210> 8759

<211> 293

<212> PRT

<213> B.fragilis

<400> 8759

Tyr Lys Cys Met Phe Ala Asn Lys Val Lys Lys Val Ala Ala Ile His
 1 5 10 15
 Asp Leu Ser Gly Met Gly Arg Val Ser Leu Thr Val Val Ile Pro Ile
 20 25 30
 Leu Ser Ser Met Gly Phe Gln Val Cys Pro Leu Pro Thr Ala Ile Leu
 35 40 45
 Ser Asn His Thr Gln Tyr Pro Asp Phe Thr Phe Leu Asp Leu Thr Asp
 50 55 60
 Glu Met Pro Arg Ile Ile Ala Glu Trp Lys Arg Leu Glu Val Glu Phe
 65 70 75 80

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Asp Ala Ile Tyr Thr Gly Tyr Leu Gly Ser Pro Arg Gln Ile Gln Ile
      85                      90                      95
Val Ser Asp Phe Ile Arg Asp Phe Arg Arg Lys Asp Ser Leu Thr Val
      100                      105                      110
Ile Asp Pro Val Leu Gly Asp Asn Gly Lys Leu Tyr Ser Asn Phe Asn
      115                      120                      125
Glu Ser Met Val Val Glu Met Gln His Leu Val Thr His Ala Asp Val
      130                      135                      140
Ile Thr Pro Asn Leu Thr Glu Leu Phe Tyr Leu Leu Asp Arg Pro Tyr
      145                      150                      155                      160
Lys Glu Ser Asn Thr Asp Gln Glu Leu Lys Glu Tyr Leu Arg Cys Leu
      165                      170                      175
Ser Asp Lys Gly Pro Glu Val Val Ile Ile Thr Ser Val Pro Val Leu
      180                      185                      190
Asp Glu Pro His Lys Thr Ser Val Tyr Ala Tyr Asn Arg Thr Gly Asn
      195                      200                      205
Arg Tyr Trp Lys Ile Thr Cys Pro Tyr Leu Pro Ala His Tyr Pro Gly
      210                      215                      220
Thr Gly Asp Thr Phe Thr Ser Val Ile Thr Gly Ala Leu Leu Gln Gly
      225                      230                      235                      240
Asp Ser Leu Pro Ile Ala Leu Asp Arg Ala Thr Gln Phe Ile Leu Gln
      245                      250                      255
Gly Ile Arg Ala Thr Phe Gly Tyr Glu Tyr Asp Asn Arg Glu Gly Ile
      260                      265                      270
Leu Leu Glu Lys Val Leu His Asn Leu Asp Met Pro Ile Gln Ser Ser
      275                      280                      285
Ser Tyr Glu Leu Ile
      290

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<210> 8760

<211> 377

<212> PRT

<213> B.fragilis

<400> 8760

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Lys Ala Ile Phe Ala Ser Glu Lys Ala Lys Ile His Leu Arg Ser Gln
1      5                      10                      15
Thr Ile Ala Gln Gln Pro Glu Pro Ala Ser Phe Ile Arg Ser Asp Met
      20                      25                      30
Lys Arg Lys Leu Cys Leu Leu Leu Phe Phe Cys Leu Leu Leu Thr Ala
      35                      40                      45
Pro Ala Leu Arg Ala Gln Gln Lys Ala Thr Pro Arg Ser Gly Glu Gly
      50                      55                      60
Ile Ser Thr Phe Leu Leu Arg His Asn Arg Ala Pro Lys Lys Tyr Tyr
      65                      70                      75                      80
Asn Asp Phe Ile Glu Leu Asn Lys Ala Lys Leu Gly Lys Ser Arg Thr
      85                      90                      95
Leu Lys Met Gly Val Thr Tyr Leu Ile Pro Pro Val Lys Lys Ala Ser
      100                      105                      110
Ala Ala Thr Ser Gly Lys Thr Thr Glu Ala Ala Ala Glu Lys Thr Ser
      115                      120                      125
Ala His His Pro Arg Arg Thr Glu Val Asn Glu Pro Leu Phe Gly Lys
      130                      135                      140
Trp Leu Ser Asn Val Lys Val Thr Ser Asn Arg Leu Ala Gly Thr Cys
      145                      150                      155                      160
Phe Tyr Val Val Ser Gly His Gly Gly Pro Asp Pro Gly Ala Ile Gly
      165                      170                      175
Arg Val Gly Lys His Glu Leu His Glu Asp Glu Tyr Ala Tyr Asp Ile
      180                      185                      190

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Ala Leu Arg Leu Ala Arg Asn Leu Met Gln Glu Gly Ala Glu Val Arg
 195 200 205
 Ile Ile Ile Gln Asp Ala Lys Asp Gly Ile Arg Asp Glu Ala Tyr Leu
 210 215 220
 Ser Asn Ser Lys Arg Glu Thr Cys Met Gly Ser Pro Ile Pro Leu Asn
 225 230 235 240
 Gln Val Gln Arg Leu Gln Gln Arg Cys Asp Lys Ile Asn Ala Leu Tyr
 245 250 255
 Arg Lys Asp Arg Lys Lys Tyr Lys Tyr Cys Arg Ala Ile Phe Ile His
 260 265 270
 Val Asp Ser Arg Ser Lys Gly Thr Gln Thr Asp Val Phe Phe Tyr His
 275 280 285
 Ser Asn Arg Lys Ala Glu Ser Lys Arg Leu Ala Lys Asn Met Lys Glu
 290 295 300
 Thr Phe Glu Ser Lys Tyr Gly Lys His Gln Pro Asn Arg Gly Phe Ser
 305 310 315 320
 Gly Thr Val Ser Gly Arg Asn Leu Tyr Val Leu Ala His Thr Thr Pro
 325 330 335
 Ala Ser Val Phe Val Glu Leu Gly Asn Ile Gln Asn Thr Phe Asp Gln
 340 345 350
 Arg Arg Leu Val Ile Pro Ser Asn Arg Gln Ala Leu Ala Lys Trp Leu
 355 360 365
 Met Glu Gly Phe Ile Lys Asp Tyr Lys
 370 375

<210> 8761

<211> 106

<212> PRT

<213> B.fragilis

<400> 8761

Cys Leu Ile Met Val Leu Leu Leu Phe Phe Leu Tyr Asp Arg Lys Asn
 1 5 10 15
 His Ala Ile Ser Leu Asn Gly Tyr Tyr Ile Ile Gln Tyr Ile Pro Glu
 20 25 30
 His Ser Phe Ala Ile Val Arg Thr Arg Thr Lys Ala Val His Tyr Arg
 35 40 45
 Thr Ile Thr Ser Gly Tyr Pro Trp Ile Leu Asn Arg Ser Phe Cys Lys
 50 55 60
 Lys Arg Tyr Ile Arg Asn Leu Ile Leu Asn Ile Glu Ser Asp Lys Phe
 65 70 75 80
 Ile Gly Arg Ile Gln Trp Lys Asn Pro Val Asp Gly Asp Val Phe Ile
 85 90 95
 Pro Phe Ser Ile Val Ser Leu Cys Val Val
 100 105

<210> 8762

<211> 62

<212> PRT

<213> B.fragilis

<400> 8762

Thr Ser Val Ile Ser Ser Leu Val Cys Pro Asn Pro Ala Leu Ile Ala
 1 5 10 15
 Glu Thr Gly Ala Pro Tyr Ser Leu Ala Ser Val Ala His Val Trp Arg
 20 25 30
 Ala Val Tyr Val Val Asn Gly Gly Ser Ile Phe Ser Phe Ala Glu Ile
 35 40 45
 Ile Phe Lys Cys Leu Leu Val Arg Pro Lys Ala Val Arg Tyr

50

55

60

<210> 8763
 <211> 348
 <212> PRT
 <213> B.fragilis

<400> 8763

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Arg Met Asn Ile Leu Phe Gly Leu Ile Leu Leu Val Ile Phe Thr Pro
1           5           10           15
Leu Ile Asn Ile Ile Ile Val Met Lys His Ile Ser Ile Asn Tyr Ile
           20           25           30
Leu Thr Thr Ala Leu Ala Leu Gly Ile Gly Ile Ser Ile Pro Val Leu
           35           40           45
Ile Gly Ser Thr Cys Leu Ser Glu Gln His Ser Val Gln Ser Glu Val
           50           55           60
Pro Tyr Cys Val Thr Pro Pro Thr Val Pro Glu Gln Ala Val Phe Asp
65           70           75           80
Gly Asp Thr Ile Asp Leu Arg Arg Tyr Asp Arg Arg Glu Arg Met Asp
           85           90           95
Arg Glu Leu Met Ser Phe Ile Tyr Met His Ser Ser Thr Met Gln Met
           100          105          110
Ile Lys Arg Ala Asn Arg Tyr Phe Pro Val Ile Glu Pro Leu Leu Lys
           115          120          125
Ala Asn Gly Ile Pro Asp Asp Phe Lys Tyr Leu Met Val Ile Glu Ser
           130          135          140
Asn Leu Asn Pro Ile Ala Arg Ser Pro Ala Gly Ala Ala Gly Leu Trp
145          150          155          160
Gln Phe Met Pro Val Thr Ala Arg Glu Phe Gly Leu Glu Val Asn Asp
           165          170          175
Asn Val Asp Glu Arg Tyr His Ile Glu Lys Ala Thr Ala Ala Ala Cys
           180          185          190
Arg Tyr Phe Lys Gln Ala Tyr Ala Lys Tyr Gly Asp Trp Met Ala Val
           195          200          205
Ser Ala Ser Tyr Asn Ala Gly Gln Gly Arg Ile Ser Ser Gln Leu Asp
           210          215          220
Lys Gln Leu Ala Asp His Ala Met Asp Leu Trp Leu Ala Glu Glu Thr
225          230          235          240
Ser Arg Tyr Met Phe Arg Leu Leu Ala Val Lys Glu Val Phe Gly Asn
           245          250          255
Pro Gln Arg Phe Gly Phe Leu Leu Lys Arg Glu His Leu Tyr Pro Ala
           260          265          270
Ile Pro Tyr Lys Glu Val Ala Val Asp Thr Glu Ile Ser Asp Leu Ser
           275          280          285
Asn Phe Ala Gln Lys Gln Gly Ile Thr Tyr Ala Gln Leu Arg Asp Ala
           290          295          300
Asn Pro Trp Leu Arg Gly Ser Ser Leu Lys Asn Lys Thr Gly Lys Lys
305          310          315          320
Tyr Val Leu His Ile Pro Thr Gln Glu Gly Met Asn Tyr Asp Pro Arg
           325          330          335
Lys Thr Val Pro His Glu His Lys Trp Val Ile Asp
           340          345

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<210> 8764
 <211> 197
 <212> PRT
 <213> B.fragilis

<400> 8764

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Thr Met Asp Ile Glu Ile Glu Asn His Pro Leu Glu Pro Phe Leu Pro
1      5      10      15
Ala Asn Ala Arg Leu Leu Met Leu Gly Ser Phe Pro Pro Gln Lys Lys
20      25      30
Arg Trp Ser Met Asp Phe Tyr Tyr Pro Asn Leu Asn Asn Asp Met Trp
35      40      45
Arg Ile Val Gly Leu Leu Phe Phe Asn Asn Lys Asp Tyr Phe Leu Asn
50      55      60
Glu Thr Arg Lys Ala Phe Cys Arg Glu Arg Ile Ile Ser Phe Leu Asn
65      70      75      80
Asp Lys Gly Ile Ala Leu Phe Asp Thr Ala Ser Ala Ile Arg Arg Leu
85      90      95
Gln Asp Asn Ala Ser Asp Lys Phe Leu Glu Val Val Gln Pro Thr Asp
100     105     110
Ile Ser Arg Leu Leu Gly Gln Leu Pro Glu Cys Lys Ala Ile Val Thr
115     120     125
Thr Gly Gln Lys Ala Thr Asp Thr Leu Arg Ala Gln Phe Glu Val Glu
130     135     140
Glu Pro Lys Val Gly Asp Phe Ser Glu Phe Val Phe Asp Gly Arg Pro
145     150     155     160
Met Arg Leu Tyr Arg Met Pro Ser Ser Ser Arg Ala Tyr Pro Leu Ala
165     170     175
Leu Asp Lys Lys Ala Ala Ala Tyr Arg Thr Met Tyr Gln Asp Leu Gln
180     185     190
Met Leu Asn Ile Glu
195

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<210> 8765

<211> 213

<212> PRT

<213> B.fragilis

<400> 8765

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Leu Met Ser Ile Phe Ala Asn Leu Phe Lys Lys Gln Ala Asp Ala Asp
1      5      10      15
Ala Lys Val Val Gly Asn Val Glu Asp Phe Val Ser Leu Thr Arg Val
20      25      30
Tyr Phe Gln Ser Val Ile Ala Val Asn Leu Gly Ile Thr Asn Ile Arg
35      40      45
Phe Leu Pro Asp Val Ala Asn Phe Lys Arg Leu Phe Lys Val Ala Thr
50      55      60
Gln Gly Gly Lys Leu Gly Leu Ala Glu Lys Ser Ala Ser Arg Lys Met
65      70      75      80
Leu Met Gln Asp Tyr Gly Ile Ser Glu Ser Phe Phe Lys Glu Ile Asp
85      90      95
Thr Ser Ile Lys Lys Asn Cys Arg Thr Gln Asn Asp Val Gln Ala Tyr
100     105     110
Leu Phe Met Tyr Gln Gly Phe Ser Ser Asp Leu Met Met Leu Met Gly
115     120     125
Asn Leu Met Gln Trp Lys Phe Arg Met Pro Ala Ile Phe Lys Lys Ala
130     135     140
Leu Arg Ser Met Thr Glu Lys Thr Val His Asp Val Cys Thr Lys Thr
145     150     155     160
Val Trp Lys Ala Asp Asp Val His Lys Thr Ala Ala Ala Val Arg Gln
165     170     175
Tyr Lys Glu Arg Leu Gly Phe Ser Glu Gln Trp Met Ser Glu Tyr Val
180     185     190
Tyr Asn Ile Val Leu Leu Ala Lys Lys Glu Pro Lys His Lys Asp Glu
195     200     205

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Glu Ala Lys Ala Lys
210

<210> 8766

<211> 117

<212> PRT

<213> B.fragilis

<400> 8766

Pro	Leu	Ile	Ile	Ser	Thr	Thr	Met	Phe	Thr	Val	Ile	Lys	Arg	Met	Glu
1				5					10					15	
Ile	Ser	Ala	Ala	His	Lys	Leu	Ile	Leu	Pro	Tyr	Arg	Ser	Lys	Cys	Ala
		20						25					30		
Ser	Leu	His	Gly	His	Asn	Trp	Ile	Ile	Thr	Val	Tyr	Cys	Arg	Ser	Glu
		35					40					45			
Arg	Leu	Asn	Ala	Asp	Gly	Met	Val	Val	Asp	Phe	Thr	Gln	Ile	Lys	Gln
	50					55					60				
Ala	Val	Lys	Glu	Lys	Leu	Asp	His	Arg	Asn	Leu	Asn	Glu	Val	Leu	Pro
65					70					75					80
Phe	Asn	Pro	Thr	Ala	Glu	Asn	Ile	Ala	Arg	Trp	Val	Cys	Lys	Gln	Ile
				85					90					95	
Pro	Gln	Cys	Tyr	Lys	Val	Glu	Val	Gln	Glu	Ser	Glu	Ala	Asn	Thr	Val
			100					105						110	
Ile	Tyr	Glu	Lys	Asp											
			115												

<210> 8767

<211> 551

<212> PRT

<213> B.fragilis

<400> 8767

Ile	Ile	Thr	Phe	Lys	Lys	Cys	Asn	Thr	Met	Lys	Leu	Asn	Lys	Val	Lys
1				5					10					15	
Asn	Met	Trp	Arg	Ile	Leu	Ser	Val	Ile	Ala	Leu	Leu	Gly	Ser	Thr	Leu
		20						25					30		
Cys	Thr	Ser	Cys	Ile	Ser	Glu	Asp	Ile	Asn	Arg	Asn	Pro	Leu	Leu	Pro
		35					40					45			
Thr	Lys	Glu	Asp	Glu	Lys	Met	Asp	Gly	Val	Ile	Tyr	Gly	Ala	Tyr	Leu
	50					55					60				
Pro	Asn	Leu	Glu	Lys	Ser	Val	Ile	Pro	Ile	Gly	Thr	Ala	Ser	Glu	Ser
65					70					75					80
Thr	Glu	Pro	Val	Asn	Arg	Tyr	Gln	Ile	Gly	Val	Asn	Leu	Ala	Gly	Asp
				85					90					95	
Ala	Trp	Ala	Gly	Tyr	Met	Ser	Pro	Arg	Asp	Asn	Lys	Phe	Asn	Gly	Ser
		100						105					110		
Lys	Asn	Phe	Thr	Asn	Tyr	Phe	Met	Tyr	Glu	Asn	Trp	Val	Asn	Tyr	Val
		115					120					125			
Tyr	Ser	Phe	Met	Val	Thr	Asp	Val	Tyr	Ser	Pro	Trp	Met	Gln	Ile	Lys
	130					135					140				
Arg	Ile	Ser	Gln	Asp	Glu	Gly	Thr	Arg	Asn	Asp	Glu	Ile	Tyr	Ala	Leu
145					150					155					160
Ala	Gln	Ile	Ile	Lys	Ile	Ala	Ala	Leu	His	Arg	Thr	Thr	Asp	Met	Phe
				165					170					175	
Gly	Pro	Ile	Pro	Tyr	Ser	Gln	Val	Gly	Lys	Gly	Ser	Phe	Lys	Val	Ala
			180					185					190		
Tyr	Asp	Ser	Gln	Glu	Ser	Val	Tyr	Arg	Ser	Phe	Leu	Lys	Glu	Leu	Glu
	195						200					205			
Glu	Ala	Val	Gln	Thr	Leu	Asp	Asp	Tyr	Ser	Asn	Lys	Ser	Lys	Glu	Val

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      210                      215                      220
Leu Pro Ala Phe Asp Ile Val Tyr Asn Gly Asp Val Asn Lys Trp Met
225                      230                      235                      240
Arg Phe Ala Asn Ser Leu Met Leu Arg Leu Ala Ile Arg Val Arg Phe
      245                      250                      255
Ala Asp Ala Gly Leu Ala Lys Glu Tyr Ala Glu Lys Ala Glu Lys His
      260                      265                      270
Pro Ala Gly Leu Ile Asp Ser Lys Glu Leu Ala Ala His Met Gly Lys
      275                      280                      285
Gly Ala Gly Leu Gln Met Lys Asn Pro Leu Lys Val Ile Asn Glu Glu
      290                      295                      300
Tyr Asn Asp Thr Arg Met Gly Ala Thr Ile Tyr Ser Tyr Leu Ala Gly
305                      310                      315                      320
Tyr Asn Asp Ala Arg Ala Ala Ile Tyr Phe Val Lys Asn Asn Gly Phe
      325                      330                      335
Lys Ala Val Arg Cys Gly Ile Ala Lys Ser Gly Asp Ala Tyr Asn Gly
      340                      345                      350
Phe Thr Arg Pro Asn Val His Glu Asp Asp Pro Leu Tyr Trp Met Lys
      355                      360                      365
Ala Ser Glu Val Cys Phe Leu Lys Ala Glu Gly Ala Leu Ala Gly Phe
      370                      375                      380
Asp Met Gly Gly Ser Ala Gly Asp Phe Tyr Asn Ala Gly Ile Arg Met
385                      390                      395                      400
Ser Phe Ser Glu Asn Gly Leu Asp Asn Ser Ser Ala Glu Thr Tyr Leu
      405                      410                      415
Lys Asp Ser Thr Arg Lys Pro Ala Asn Tyr Thr Asp Thr Ser Asn Gly
      420                      425                      430
Glu Leu Ser Ala Asn Ala Pro Ser Ser Ile Thr Ile Arg Trp Glu Asn
      435                      440                      445
Gly Ala Thr Glu Glu Glu Lys Leu Glu Arg Ile Ile Thr Gln Lys Tyr
      450                      455                      460
Leu Ala Ile Phe Pro Asn Gly Gln Glu Ala Trp Thr Glu Trp Arg Arg
465                      470                      475                      480
Thr Gly Tyr Pro Arg Gln Ile Val Val Ala Glu Asn Lys Thr Asn Ser
      485                      490                      495
Ala Val Leu Ile Gly Asn Gly Tyr Asp Leu Gly Gly Val Arg Arg Leu
      500                      505                      510
Pro Tyr Pro Arg Thr Glu Tyr Glu Gln Asn Gly Glu Asn Leu His Asn
      515                      520                      525
Ala Ile Ser Gln Tyr Leu Gly Gly Val Asp Asn Ala Ala Pro Lys Val
      530                      535                      540
Trp Trp Asp Lys Lys Ser Lys
545                      550

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<210> 8768

<211> 226

<212> PRT

<213> B.fragilis

<400> 8768

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Glu Glu Lys Met Glu Lys Arg Phe Met Gln Ser Val Ala Met Arg Ile
1                      5                      10                      15
Ile Tyr Lys Gly Val Phe His Trp Phe Leu Lys Leu Ile Val Gly Val
      20                      25                      30
Gln Phe Thr Asp Cys Gln Phe Leu Lys Lys Glu Lys Gln Phe Ile Ile
      35                      40                      45
Leu Ala Asn His Asn Ser His Leu Asp Thr Leu Ser Leu Leu Ser Ser
      50                      55                      60
Leu Pro Gly Asn Leu Leu Trp Lys Val Lys Pro Val Ala Ala Glu Asp

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65          70          75          80
Tyr Phe Gly Lys Thr Arg Phe Gln Ala Ser Ile Ser Asn Phe Phe Ile
      85          90
Asn Thr Leu Leu Ile Arg Arg Lys Gly Glu Lys Asp Ser Glu His Asp
      100          105          110
Pro Ile Arg Lys Met Leu Glu Ala Ile Asp Ala Gly Tyr Ser Leu Ile
      115          120          125
Leu Phe Pro Glu Gly Thr Arg Gly Lys Ser Glu Gln Met Gly Lys Ile
      130          135          140
Lys Ser Gly Ile Ala Arg Ile Leu Ser Leu Arg Pro Glu Val Lys Tyr
145          150          155          160
Ile Pro Val Phe Met Thr Gly Met Gly Arg Ser Leu Pro Lys Gly Lys
      165          170          175
Met Ile Leu Leu Pro Tyr Lys Ala Ser Val Tyr Tyr Gly Ile Pro Thr
      180          185          190
Leu Val Lys Ser Thr Asp Thr His Glu Ile Leu Asp Gln Ile Thr Gly
      195          200          205
Asp Phe Glu Val Met Lys Glu Lys Tyr Gln Val Val Ile Asp Glu Glu
      210          215          220
Glu Glu
225

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<210> 8769

<211> 76

<212> PRT

<213> B.fragilis

<400> 8769

```

Ser Phe Ser Val Phe Arg Cys Leu Tyr Ser Phe Ser Thr Arg Val Leu
1          5          10          15
Pro Tyr Arg Gln Pro Pro Phe Phe Ser Thr Leu Gln Arg Ser Val Phe
      20          25          30
Gly Thr Val Arg Glu Met Ala Ile Gln Pro Asp Asn Leu Ala Ile Leu
      35          40          45
Pro Asp Tyr Thr Lys Thr Ser Ile Phe Ile Pro Glu Arg Asp Arg Tyr
      50          55          60
Arg Lys Lys Ala Gly Ala Gly Thr Pro Ile Tyr Ile
65          70          75

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<210> 8770

<211> 532

<212> PRT

<213> B.fragilis

<400> 8770

```

Val Ala Asp Phe Ser Ile Ser Asp Asp Leu Ala Ala Lys Val Thr Leu
1          5          10          15
Val Pro Ile Glu Gly Tyr Tyr Asp Lys Gly Lys Ser Arg Gln Asn Gln
      20          25          30
Ala Glu Ala Gln Ala Val Val Asp Glu Ile Val Arg Arg Leu Ser Asp
      35          40          45
Pro Glu Leu Arg Asn Gln Ser Ile Gly Val Val Thr Phe Ser Ser Val
      50          55          60
Gln Gln Thr Leu Ile Glu Asp Met Leu Ser Asp Val Val Leu Gln Asn
65          70          75          80
Ala Glu Leu Glu Asn Leu Ala Phe Asn Arg Glu Glu Pro Val Phe Ile
      85          90          95
Lys Asn Leu Glu Asn Val Gln Gly Asp Glu Arg Asp Val Ile Leu Phe
      100          105          110

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Ser Val Gly Tyr Gly Pro Asp Val Asn Gly Arg Val Ser Leu Asn Phe
 115 120 125
 Gly Pro Leu Asn Arg Asp Gly Gly Glu Arg Arg Leu Asn Val Ala Val
 130 135 140
 Ser Arg Ala Arg Tyr Glu Met Lys Val Phe Ser Thr Leu Arg Ala Asp
 145 150 155 160
 Gln Ile Asp Leu Lys Lys Thr Ser Ser Ile Gly Val Ala Gly Leu Lys
 165 170 175
 Tyr Phe Leu Glu Tyr Ala Gly Lys Gly Thr Gly Val Leu Asn His Ser
 180 185 190
 Tyr Val Ala Val Ser Glu Glu Val Glu Met Gly Glu Leu Ile Ala Ala
 195 200 205
 Ala Leu Arg Glu Lys Gly His Gln Val Lys Thr Lys Ile Gly Cys Ser
 210 215 220
 Gly Phe Lys Val Asp Val Gly Ile Ile Asp Pro Asn Asp Thr Ser Arg
 225 230 235 240
 Tyr Met Leu Gly Ile Leu Cys Asp Gly Glu Asn Tyr Arg Ala Ala Lys
 245 250 255
 Thr Ala Arg Asp Arg Glu Ile Val Gln Asp Ser Val Leu Lys Met Leu
 260 265 270
 Gly Trp Asn Ile Cys Lys Val Trp Thr Leu Asp Trp Trp Glu Asp Ser
 275 280 285
 Gln Lys Val Ile Asp His Ile Glu Ala Glu Leu Lys Arg Ala Glu Cys
 290 295 300
 Gly Lys Ser Gln Arg Ser Val Pro Val Ile Ser Leu Ala Ser Gly Ser
 305 310 315 320
 Gly Glu Val Gln Lys Glu Gly Leu Leu Cys His Ala Gln His Cys Leu
 325 330 335
 Val Lys Leu Pro Glu Gln Val Ile Arg Glu Glu Val Lys Thr Ala Ser
 340 345 350
 Pro Glu Ile Tyr Glu Lys Thr Leu Leu Asn Ser Val Asn Val Ser Ala
 355 360 365
 Trp Glu Leu Met Met Pro Arg Arg Glu Pro Arg Ile Arg Lys Gln Leu
 370 375 380
 Asn Glu Ile Met Arg Thr Glu Ala Pro Ile Ser Arg Ser Leu Leu Ser
 385 390 395 400
 Ser Arg Ile Phe Asn Ala Tyr Gly Ile Leu Arg Lys Thr Ala Arg Leu
 405 410 415
 Ile Glu Trp Met Asp Gly Ile Leu Asp Lys Thr Pro Tyr Tyr Lys Gln
 420 425 430
 Glu Ile Asp Gly Leu Val Phe Tyr Trp Asn Thr Lys Glu Glu Ala Asp
 435 440 445
 Ser Tyr Thr Gly Phe Arg Ile Asp Ser Lys Arg Glu Ala Val Asp Leu
 450 455 460
 Pro Pro Arg Glu Val Ala Asn Ala Ala Arg Asn Ile Leu Glu Gln Gln
 465 470 475 480
 Val Ala Leu Pro Leu Val Asp Leu Met Arg Val Thr Ala Gln Leu Leu
 485 490 495
 Gly Tyr Ala Arg Phe Gly Leu Asn Val Glu Thr Ala Met Arg Arg Gly
 500 505 510
 Val Gln Ile Leu Leu Asp Gly Glu Glu Val Lys Ile Glu Gly Gly Lys
 515 520 525
 Ile Leu Met Lys
 530

<210> 8771

<211> 69

<212> PRT

<213> B.fragilis

<400> 8771

```

Ile Asp Gly Val Leu Leu Lys Arg Glu Lys Ser Phe Leu Ser Asp Leu
1          5          10          15
Lys Ile Gly Ile Ser Ser Ser Ile Cys Val Arg Ala Ile Lys Val Ser
20          25          30
Leu Phe Tyr Glu Lys Leu Val Asp Ile Ile Ile Leu Leu Leu Ser Ile
35          40          45
Lys Val Gly Ile Pro Leu Val Asp Phe Cys Phe His Trp Leu Tyr Leu
50          55          60
Arg Val Ser Lys Ile
65

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<210> 8772

<211> 614

<212> PRT

<213> B.fragilis

<400> 8772

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Asn Asn Glu Val Met Lys Thr Asn Gln Phe Arg Ala Met Val Phe Ala
1          5          10          15
Leu Leu Met Ala Val Ile Ser Leu Ala Thr Val Ser Ala Gln Ala Ile
20          25          30
Thr Val Ser Gly Thr Val Thr Asp Ala Lys Asp Gly Thr Pro Leu Val
35          40          45
Gly Cys Ser Val Gln Ile Lys Gly Thr Thr Lys Gly Thr Val Thr Asn
50          55          60
Met Asn Gly Gln Tyr Thr Ile Gln Ser Lys Lys Gly Glu Thr Leu Leu
65          70          75          80
Phe Gln Tyr Ile Gly Tyr Lys Gln Glu Lys Arg Val Val Lys Ser Ser
85          90          95
Thr Leu Asp Val Lys Met Lys Ala Asp Glu Leu Val Leu Glu Glu Cys
100          105          110
Val Val Val Gly Tyr Gly His Glu Leu Arg Ala Thr Lys Ser Met Ser
115          120          125
Thr Ala Tyr Met Ala Val Cys Pro Ala Ser Gly Ile Met Tyr Asn Ala
130          135          140
Val Asn Ala Glu Glu Tyr Gly Glu Ile Gln Glu Asn Gly Phe Lys Asn
145          150          155          160
Val Ser Asp Ala Pro Leu Ser Thr Phe Ser Ile Asp Val Asp Ala Ala
165          170          175
Ser Tyr Ser Asn Met Arg Arg Phe Ile Asn Lys Gly Lys Leu Pro Pro
180          185          190
Val Asp Ala Ile Arg Thr Glu Glu Leu Val Asn Tyr Phe Ser Tyr Asp
195          200          205
Tyr Pro Lys Pro Thr Gly Ser Asp Pro Val Lys Ile Thr Met Glu Ala
210          215          220
Gly Thr Cys Pro Trp Asn Ala Asp His Arg Leu Val Arg Ile Gly Leu
225          230          235          240
Lys Ala Lys Glu Ile Pro Thr Asp Asn Leu Pro Ala Ser Asn Leu Val
245          250          255
Phe Leu Ile Asp Val Ser Gly Ser Met Trp Gly Ala Asn Arg Leu Asp
260          265          270
Leu Val Lys Ser Ser Leu Lys Leu Leu Val Asn Asn Leu Arg Asp Lys
275          280          285
Asp Lys Val Ala Ile Val Thr Tyr Ala Gly Asn Ala Gly Val Lys Leu
290          295          300
Glu Ala Thr Pro Gly Ser Asp Lys Gln Lys Ile Arg Glu Ala Ile Asp
305          310          315          320

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Glu Leu Glu Ala Ser Gly Ser Thr Ala Gly Gly Glu Gly Ile Met Leu
 325 330 335
 Ala Tyr Lys Ile Ala Gln Lys Asn Phe Ile Ser Gly Gly Asn Asn Arg
 340 345 350
 Ile Ile Leu Cys Thr Asp Gly Asp Phe Asn Val Gly Val Ser Ser Asp
 355 360 365
 Lys Glu Leu Glu Lys Leu Ile Glu Gln Lys Arg Lys Ser Gly Ile Phe
 370 375 380
 Leu Thr Val Leu Gly Tyr Gly Met Gly Asn Tyr Lys Asp Ser Lys Met
 385 390 395 400
 Gln Thr Leu Ala Glu Lys Gly Asn Gly Asn His Ala Tyr Ile Asp Asn
 405 410 415
 Leu Gln Glu Ala Asn Arg Val Leu Val Asn Glu Phe Gly Ala Thr Leu
 420 425 430
 His Thr Val Ala Lys Asp Val Lys Leu Gln Val Glu Phe Asn Pro Ala
 435 440 445
 Gln Val Gln Ala Tyr Arg Leu Ile Gly Tyr Glu Ser Arg Leu Leu Ala
 450 455 460
 Asp Glu Asp Phe Asn Asn Asp Thr Lys Asp Ala Gly Glu Met Gly Ala
 465 470 475 480
 Gly His Thr Val Thr Ala Phe Tyr Glu Val Ile Pro Thr Gly Val Lys
 485 490 495
 Ser Asp Phe Ala Gly Lys Ile Asp Asp Leu Lys Tyr Gln Lys Lys Gln
 500 505 510
 Lys Pro Ser Thr Pro Leu Asn Glu Ser Asp Glu Leu Leu Thr Ile Lys
 515 520 525
 Leu Arg Tyr Lys Ala Pro Asp Ser Asn Thr Ser Lys Lys Ile Glu Leu
 530 535 540
 Pro Leu Ile Asp His Lys Ser Asn Arg Val Ser Ala Asp Phe Arg Phe
 545 550 555 560
 Ala Ala Ala Val Ala Met Phe Gly Gln Leu Leu Arg Asp Ser Glu Phe
 565 570 575
 Lys Gly Asn Ala Thr Tyr Asp Lys Val Ile Ser Leu Ala Lys Thr Gly
 580 585 590
 Leu Glu Asn Asp Glu Lys Gly Tyr Lys Arg Glu Phe Ile Arg Leu Ala
 595 600 605
 Glu Thr Ala Lys Ser Leu
 610

<210> 8773

<211> 104

<212> PRT

<213> B.fragilis

<400> 8773

Lys Leu Leu Val Arg Asn Val Glu Phe Ile Lys Thr Arg Glu Arg Ala
 1 5 10 15
 Phe Phe Leu Leu Asn Pro Ile Val Lys Ser Ser Ser Lys Leu Glu Gly
 20 25 30
 Met Lys Lys Tyr Leu Ala Ile Glu Ile Arg Gly Glu Ile Phe Val Met
 35 40 45
 Asn Asp Asn Asp Glu Leu Gly Gly Leu Ile Asp Asn Asp Val Pro Phe
 50 55 60
 Thr Val Ile Gly His Val Cys Thr Glu Glu Cys Asn Thr Thr Cys Leu
 65 70 75 80
 His Tyr Arg Gln Gly Thr Cys Pro Cys Lys Ile Met Lys Asp Thr Phe
 85 90 95
 Gly Lys Val Ile His Val Phe Val
 100

<210> 8774
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 8774
 Met Leu Phe Phe Lys Arg Asn Ile Ser Arg Leu Ser Asp Glu Glu Leu
 1 5 10 15
 Leu Ile His Tyr Thr Lys Ser Gly Asp Thr Glu Tyr Phe Gly Glu Leu
 20 25 30
 Tyr Asn Arg Tyr Ile Pro Leu Leu Tyr Gly Leu Cys Leu Lys Tyr Leu
 35 40 45
 His Asp Glu Asp Arg Ala Gln Glu Ala Val Met Gln Leu Phe Glu Asp
 50 55 60
 Leu Leu Pro Lys Leu Gly Asn Tyr Glu Ile Lys Val Phe Lys Pro Trp
 65 70 75 80
 Leu Tyr Arg Val Ala Lys Asn His Cys Leu Gln Leu Leu Arg Lys Glu
 85 90 95
 Asn Lys Glu Ile Pro Leu Asp Tyr Thr Val Asn Ile Met Glu Ser Asp
 100 105 110
 Glu Phe Leu His Leu Leu Ser Glu Glu Ser Ser Glu Glu Gln Leu
 115 120 125
 Lys Ala Leu His His Cys Leu Glu Lys Leu Pro Glu Glu Gln Arg Thr
 130 135 140
 Ser Ile Thr Arg Phe Phe Leu Glu Glu Met Ser Tyr Ala Asp Ile Val
 145 150 155 160
 Glu Gln Thr Gly Phe Thr Leu Asn Asn Val Lys Ser Tyr Ile Gln Asn
 165 170 175
 Gly Lys Arg Asn Leu Lys Ile Cys Ile Lys Asn Gln Leu Lys Gly
 180 185 190

<210> 8775
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8775
 Ser Ala Ser Ser Leu Asn Phe Phe Ser Thr Ile Asn Ala Tyr Phe Ile
 1 5 10 15
 Ala Ser Val Ser Ser Ala Pro Gly Leu Asn Leu Ala Thr Phe Phe Ala
 20 25 30
 Gly Ile Ser Ile Ala Phe Leu Val Glu Gly Leu Ile Pro Ile Leu Ala
 35 40 45
 Asp Leu Ser Ala Thr Glu Asn Val Pro Asn Pro Thr Lys Glu Ile Leu
 50 55 60
 Ser Pro Ala Asp Lys Ala Phe Val Thr Glu Glu Lys Lys Ala Ser Ser
 65 70 75 80
 Ala Phe Leu Glu Ser Thr Leu Leu Lys Pro Asp Ser Ala Ala Ile Ala
 85 90 95
 Leu Ile Ser Ser Ala Leu Phe Ile Ile Arg Lys
 100 105

<210> 8776
 <211> 577
 <212> PRT
 <213> B.fragilis

<400> 8776

Cys Pro Leu Pro Phe Ser Ser Phe Pro Phe Ser Phe Ser Thr Phe Ala
 1 5 10 15
 Ile Asp Leu Phe Ile Asn Thr Gln Thr Met Lys Ser Leu His Ser Leu
 20 25 30
 Leu Phe Cys Gly Val Leu Leu Leu His Ala Ser Cys Ser Gly Ile Lys
 35 40 45
 Thr Ser Asp Glu Lys Ser Leu Gly Asp Cys Pro Leu Val Ala Thr Trp
 50 55 60
 Lys Gln Ala Gly Thr Asp Ser Ile Val Val Leu Asp Val Gly Leu Ile
 65 70 75 80
 Lys Asp Thr Met Gln Ile Arg Leu Ser Gln Leu Val Asp Asp Leu Glu
 85 90 95
 Ile Ile Lys Leu Glu Thr Arg Asp Thr Ala Leu Val Lys Ser Gly Tyr
 100 105 110
 Met Ala Val Ser Asp Arg Tyr Met Leu Leu Gly Ser Tyr Leu Met Pro
 115 120 125
 Cys Lys Leu Phe Asp Lys Asn Gly Thr Phe Leu Arg Gln Ile Gly Gly
 130 135 140
 Leu Gly Gln Gly Pro Gly Glu Tyr Thr Asn Ile Tyr Asp Ala Gln Ile
 145 150 155 160
 Asp Glu Val Asn Asn Arg Ile Tyr Met Leu Pro Trp Thr Ser Asn Gln
 165 170 175
 Leu Leu Val Phe Asp Leu Asp Gly Asn Ile Leu Pro Pro Ile Pro Leu
 180 185 190
 Pro Ala Arg Val Pro Lys Gly Val Phe Arg Val Asp Thr Lys Lys Asn
 195 200 205
 Leu Leu Thr Met Gly Ile Leu Pro Phe Gln Asp Leu Glu Asn Lys Phe
 210 215 220
 Val Leu Trp Gln Gln Asp Leu Lys Gly Asn Val Leu Gln Ser Ile Ser
 225 230 235 240
 Ser Thr Pro Tyr Tyr Thr Tyr Asp Asp Tyr Ser Asn Glu Val Ser Ser
 245 250 255
 Asn Arg Asn Ala Gly Ser Phe Asp Phe Phe Ile Phe Asn Trp Ser Ala
 260 265 270
 Val Gln Asp Ser Leu Tyr His Tyr Asp Ala Lys Glu Asn Arg Leu Val
 275 280 285
 Pro Val Phe Thr Ala Asn Phe Gly Thr Gln Asp Ile Pro Lys His Thr
 290 295 300
 Tyr Thr Glu Phe Pro Gly His Tyr Trp Val Asn Ile Ile Thr Glu Val
 305 310 315 320
 Val Asn Gly Gln Gly Met Pro Pro Met Asn Val Leu Ile Asp Lys His
 325 330 335
 Ser Leu Lys Gly Thr Tyr Cys Thr Leu Val Ile Asp Glu Leu Gly Gly
 340 345 350
 Ile Pro Val Glu Tyr Pro Tyr Asp Cys Phe Gln Asp Gly Arg Phe Leu
 355 360 365
 Met Asn Leu Asp Pro Gly Asp Leu Ile Asp Glu Leu Glu Lys Val Leu
 370 375 380
 Ala Arg Pro Glu Arg Phe Ser Lys Glu Glu Ser Asp Arg Leu Thr Lys
 385 390 395 400
 Leu Lys Asn Ser Ile Ser Val Asp Asp Asn Asn Tyr Ile Leu Val Gly
 405 410 415
 Lys Phe Lys Ser Lys Gly Glu Ser Leu Ile Leu Ser Ala Asn Pro Val
 420 425 430
 Gln Lys Ile Thr Glu Gln Glu Gln Gln Pro Ala Lys Glu Glu Pro Val
 435 440 445
 Lys Thr Ala Val Gln Ser Glu Val Ala Ser Glu Ala Asp Thr Val Trp
 450 455 460
 Ser Val Ser Pro Tyr Ser Ala Ile Leu Pro Asp Ala Ile Asp Tyr Phe

465 470 475 480
 Arg Thr His Asn Lys Tyr Lys Asp Trp Asp Pro Lys Lys Gly Lys Arg
 485 490 495
 Val Leu Val Arg Gly Ile Ala Glu Lys Asp Gly Thr Ile Thr Gly Val
 500 505 510
 Gly Ile Ser Tyr Gly Trp Asp Leu Asp Pro Gln Ser Gly Ala Met Lys
 515 520 525
 Asn Lys Ser Glu Gly Thr Cys Gly Leu Lys Glu Leu Asp Glu Glu Ala
 530 535 540
 Leu Arg Leu Ile Arg Gln Ala Lys Leu Leu Pro Gly Met Thr Asp Lys
 545 550 555 560
 Lys Ile Pro Val Arg Ser Lys Phe Val Ile Val Val Asp Phe Pro Pro
 565 570 575
 Lys

<210> 8777
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 8777
 Leu Arg Pro Leu Arg Leu Phe Pro Lys Ala Arg Lys Gly Arg Ile Val
 1 5 10 15
 Leu Leu Phe Met Ile His Gln Pro Cys Lys Gln Lys Asp Arg Lys Lys
 20 25 30
 Thr Asp Pro Leu Thr Arg Leu Tyr Lys Lys Asn Ala Gln Pro Glu Ala
 35 40 45
 Glu Gln Glu Glu Asn Arg Val Ile Glu Gly Ser Lys Pro Gly Ile Lys
 50 55 60

<210> 8778
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 8778
 Leu Val Phe Thr Lys Arg Met Pro Asn Arg Arg Pro Asn Arg Lys Lys
 1 5 10 15
 Thr Gly Ser Leu Lys Gly Gln Ser Arg Gly Leu Ser Lys Asn Lys Ser
 20 25 30
 Gly Phe Asp Thr Lys Ser Leu Phe Val Phe Arg Lys Arg Ser Lys His
 35 40 45
 Phe Leu Gln Lys Thr Val Thr Phe Ser Lys Asn Ala Tyr Phe Phe Ala
 50 55 60
 Leu Thr Ser Pro Tyr Val Leu Lys Thr Thr Phe Thr Ala Pro Glu Asn
 65 70 75 80
 Thr Thr Tyr Ser Gly Ser Ser Cys Ser Asn Arg Leu Leu Ser Glu Ser
 85 90 95
 Pro Thr Gly Val Ser Lys Ser Leu Lys Phe Pro Ser Leu Lys Ser Thr
 100 105 110
 Gly Asn Ile Tyr Phe Gln Ile Ala Phe Phe Leu Thr Glu Asn Lys Ser
 115 120 125
 Arg Thr Lys Gln Asn Asp Lys Pro Gly Asn Glu Ile Glu Thr Phe Phe
 130 135 140
 Arg Pro Arg Leu Ser Arg Glu Ser Lys Lys Arg Lys Leu Gly Gly Phe
 145 150 155 160
 Ile

<210> 8779
 <211> 400
 <212> PRT
 <213> B.fragilis

<400> 8779

Gly	Ile	Asp	Thr	Leu	Leu	Met	Asn	Pro	Lys	Leu	Cys	Cys	Lys	Met	Thr
1				5					10					15	
Lys	Thr	Thr	Asn	Met	Lys	Gln	Asn	Thr	Phe	Phe	Val	Asn	Val	Trp	Thr
			20					25					30		
Leu	Met	Leu	Ile	Leu	Gly	Leu	Ile	Ala	Cys	Gly	Glu	Lys	Lys	Thr	Gln
		35					40						45		
Val	Lys	Thr	Glu	Leu	Gln	Arg	Ile	Glu	Ala	Phe	Ala	Phe	Asp	Val	Asn
	50					55					60				
Asp	Asp	Tyr	Leu	Gln	Ser	Tyr	Ala	Gly	Thr	Phe	Cys	Tyr	Ser	Thr	Ser
65					70					75					80
Ala	Arg	Ile	Asp	Gly	Lys	Glu	Cys	Leu	Ile	Val	Tyr	Asn	Gly	Lys	Leu
				85					90					95	
His	Ser	Ile	Asp	Ile	Leu	Asn	Leu	Ala	Asp	Arg	Arg	Pro	Leu	Lys	Gln
			100					105						110	
Ile	Ala	Leu	Ala	Lys	Asp	Gly	Pro	Asp	Gln	Ile	Leu	Ala	Pro	Lys	Gly
		115					120						125		
Ile	Gly	Tyr	Tyr	Lys	Asp	Ser	Phe	Ile	Ile	Leu	Asn	Thr	Gly	Gly	Leu
	130					135						140			
Tyr	Arg	Val	Gly	Gln	Asp	Gly	Lys	Val	Val	Ser	Lys	Lys	Leu	Leu	Asn
145					150					155					160
Asp	Phe	Pro	Gln	Ile	Lys	Glu	Glu	Gly	Tyr	Gly	Ile	Ala	Val	Pro	Asp
				165					170					175	
Leu	Thr	Val	Tyr	Phe	Ser	Val	Tyr	Ser	Phe	Phe	Gly	Phe	Asp	Ala	Ala
			180					185					190		
Asn	Gly	Arg	Val	Ala	Leu	Pro	Leu	Tyr	Phe	Tyr	Glu	Lys	Asp	Thr	Thr
		195					200						205		
Gly	Glu	Tyr	Pro	Lys	Lys	Val	Leu	Ile	Val	Ser	Cys	Asp	Asp	Trp	Asn
	210					215					220				
Ile	Arg	Asp	Glu	Val	Glu	Ile	His	Cys	Pro	Asp	Val	Ile	Arg	Lys	Glu
225					230					235					240
Gly	Asp	Met	Gln	Leu	Gly	Cys	Val	Asn	Val	Leu	Pro	Tyr	Gly	Asp	
				245					250					255	
Trp	Leu	Ile	Tyr	Asn	Phe	Pro	Ala	Ser	Ser	Lys	Val	Tyr	Val	Tyr	Asp
		260					265							270	
Leu	Ser	Val	Lys	Lys	Ser	Lys	Glu	Tyr	Asp	Phe	Pro	Ser	Thr	Phe	Thr
		275					280					285			
Asp	Pro	Phe	Phe	His	Leu	Pro	Asp	Ile	Asn	Gly	Ser	Glu	Pro	Gly	Phe
	290					295					300				
Gly	Cys	Leu	Lys	Thr	Gly	Tyr	Tyr	Phe	Pro	Leu	Cys	Tyr	Asp	Ala	Tyr
305					310					315					320
His	Asn	Val	Phe	Trp	Arg	Ile	Gln	His	Gly	Pro	Leu	Asp	Gly	His	Gly
				325					330					335	
Val	Gly	Gly	Lys	Pro	Phe	Ser	Val	Met	Cys	Ile	Ser	Pro	Asp	Phe	Leu
			340					345					350		
Asn	Ser	Ala	Glu	Tyr	Val	Ile	Pro	Ala	Gly	Ala	Ser	Ile	Tyr	Pro	Asp
		355					360					365			
Leu	Ala	Phe	Thr	Asp	Ser	Leu	Ile	Leu	Leu	Pro	Tyr	Thr	Gly	Gly	Asp
	370					375					380				
Lys	Ile	Gly	Glu	Asn	Asn	Met	Cys	Phe	Tyr	Gly	Leu	Gln	Tyr	Arg	Glu
385				390						395					400

<210> 8780

<211> 107
 <212> PRT
 <213> B.fragilis

<400> 8780

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Asn Val Tyr Leu Ile Ile Asp Lys Lys Leu Asn Met Lys Lys Ile Asp
1          5          10          15
Leu Ile Arg Ser Ile Ala Val Lys Ser Asn Leu Lys Lys Glu His Ile
          20          25          30
Ala Ile Val Val Glu Gly Val Met Glu Ala Ile Ala Glu Ala Leu His
          35          40          45
Gln Gly Glu Ser Val Thr Leu Val Gly Phe Gly Thr Phe Glu Val Lys
          50          55          60
Glu Arg Lys Ala Arg Lys Gly Tyr Asn Leu Ser Thr Gly Glu Ile Met
65          70          75          80
Thr Ile Pro Gly Lys Lys Thr Val Arg Phe Lys Pro Gly Ala Lys Met
          85          90          95
Asn Leu Glu Thr Lys His Gln Asp Thr Ser Arg
          100          105

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<210> 8781
 <211> 612
 <212> PRT
 <213> B.fragilis

<400> 8781

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Arg Leu Leu Phe Leu Tyr Leu Cys Ala Gln Asn Asn Asn Leu Asp Met
1          5          10          15
Lys Ile Glu Asp Lys Leu Val Thr Ser Val Ile Ser Gly Leu Lys Ala
          20          25          30
Leu Tyr Gly Gln Asp Val Pro Ala Ala Gln Val Gln Leu Gln Lys Thr
          35          40          45
Lys Lys Glu Phe Glu Gly His Leu Thr Leu Val Val Phe Pro Phe Leu
          50          55          60
Lys Met Ser Lys Lys Gly Pro Glu Gln Thr Ala Gln Glu Ile Gly Glu
65          70          75          80
Tyr Leu Lys Ala Asn Glu Pro Ala Val Ala Ala Phe Asn Val Ile Lys
          85          90          95
Gly Phe Leu Asn Leu Thr Val Ala Ser Ala Thr Trp Ile Glu Leu Leu
          100          105          110
Asn Glu Ile His Ala Asp Ala Gln Tyr Gly Ile Val Ser Ala Asp Glu
          115          120          125
Asn Ala Pro Leu Val Met Ile Glu Tyr Ser Ser Pro Asn Thr Asn Lys
          130          135          140
Pro Leu His Leu Gly His Val Arg Asn Asn Leu Leu Gly Asn Ala Leu
145          150          155          160
Ala Asn Ile Val Met Ala Asn Gly Asn Lys Val Val Lys Thr Asn Ile
          165          170          175
Val Asn Asp Arg Gly Ile His Ile Cys Lys Ser Met Leu Ala Trp Gln
          180          185          190
Lys Tyr Gly Lys Gly Glu Thr Pro Glu Ser Ser Gly Lys Lys Gly Asp
          195          200          205
His Leu Val Gly Asp Tyr Tyr Val Ala Phe Asp Lys His Tyr Lys Ala
210          215          220
Glu Val Ala Glu Leu Met Glu Lys Gly Met Ser Lys Glu Glu Ala Glu
225          230          235          240
Ala Ala Ser Pro Leu Met Asn Glu Ala Arg Glu Met Leu Val Lys Trp
          245          250          255
Glu Ala Gly Asp Pro Glu Val Arg Ala Leu Trp Gln Met Met Asn Asn

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      260      265      270
Trp Val Tyr Ala Gly Phe Asp Glu Thr Tyr Arg Lys Met Gly Val Gly
      275      280      285
Phe Asp Lys Ile Tyr Tyr Glu Ser Asn Thr Tyr Leu Glu Gly Lys Glu
      290      295      300
Lys Val Met Glu Gly Leu Glu Lys Gly Phe Phe Phe Lys Lys Glu Asp
305      310      315      320
Gly Ser Val Trp Ala Asp Leu Thr Ala Glu Gly Leu Asp His Lys Leu
      325      330      335
Leu Leu Arg Gly Asp Gly Thr Ser Val Tyr Met Thr Gln Asp Ile Gly
      340      345      350
Thr Ala Lys Leu Arg Phe Ala Asp Tyr Pro Ile Asp Lys Met Ile Tyr
      355      360      365
Val Val Gly Asn Glu Gln Asn Tyr His Phe Gln Val Leu Ser Ile Leu
      370      375      380
Leu Asp Lys Leu Gly Phe Glu Trp Gly Lys Ser Leu Val His Phe Ser
385      390      395      400
Tyr Gly Met Val Glu Leu Pro Glu Gly Lys Met Lys Ser Arg Glu Gly
      405      410      415
Thr Val Val Asp Ala Asp Asp Leu Met Ala Glu Met Ile Ala Thr Ala
      420      425      430
Lys Glu Thr Ser Gln Glu Leu Gly Lys Leu Asp Gly Leu Thr Gln Glu
      435      440      445
Glu Ala Asp Asp Ile Ala Arg Ile Val Gly Leu Gly Ala Leu Lys Tyr
      450      455      460
Phe Ile Leu Lys Val Asp Ala Arg Lys Asn Met Thr Phe Asn Pro Lys
465      470      475      480
Glu Ser Ile Asp Phe Asn Gly Asn Thr Gly Pro Phe Ile Gln Tyr Thr
      485      490      495
Tyr Ala Arg Ile Arg Ser Val Leu Arg Lys Ala Ala Glu Ala Gly Ile
      500      505      510
Val Ile Pro Glu Val Leu Pro Ala Asn Ile Glu Leu Ser Glu Lys Glu
      515      520      525
Glu Gly Leu Ile Gln Met Val Ala Asp Phe Ala Ala Val Val Arg Gln
      530      535      540
Ala Gly Glu Asp Tyr Ser Pro Ser Gly Ile Ala Asn Tyr Val Tyr Asp
545      550      555      560
Leu Val Lys Glu Tyr Asn Gln Phe Tyr His Asp Phe Ser Ile Leu Arg
      565      570      575
Glu Glu Asn Glu Asp Val Lys Leu Phe Arg Ile Ala Leu Ser Ala Asn
      580      585      590
Ile Ala Lys Val Val Arg Leu Gly Met Gly Leu Leu Gly Ile Glu Val
      595      600      605
Pro Asp Arg Met
      610

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<210> 8782

<211> 450

<212> PRT

<213> B.fragilis

<400> 8782

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Trp Gly Pro Tyr Ala Gln Thr Ile Asn Leu Asn Ser Ile Val Ala Met
1      5      10      15
Lys His Met Ser Leu Leu Leu Ile Gly Val Phe Val Leu Leu Gly Cys
      20      25      30
Ser Ser Asn Lys Lys Gln Glu Pro Ile Ser Lys Ser Gly Ile Pro Val
      35      40      45
Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu Ser

```

50 55 60
 Glu Ala Ala Ser Lys Val Asp Ile Val Pro Leu Glu Val Thr Asp Glu
 65 70 75 80
 Ser Leu Leu Gly Glu Ile Tyr His Leu Gln Ile Thr Glu Asn Asp Ile
 85 90 95
 Trp Val His His Tyr Lys Asp Lys Cys Ile Cys Arg Phe Ser Arg Ser
 100 105 110
 Gly Lys Phe Leu Asn Lys Val Gly Lys Ile Gly Gln Gly Pro Gly Glu
 115 120 125
 Phe Ile Gln Leu Ser Asp Phe Phe Ile Asp Glu Lys His Arg Glu Ile
 130 135 140
 Tyr Ile Val Ser Ala Ser Arg Gly Ile Phe Val Tyr Asp Phe Asp Gly
 145 150 155 160
 Asn Phe Lys Arg Gln Pro Thr Arg Thr Ile Val Glu Thr Met Phe Gly
 165 170 175
 Ser Ile Phe Asn Gln Phe Met Ile Tyr Asn Asn His Phe Phe Ile Leu
 180 185 190
 Gln Asn Leu Pro Leu Tyr Arg Glu Ile Pro Lys Asp Ser Leu Trp Ser
 195 200 205
 Leu Ala Leu Val Asp Ser Ser Tyr Lys Lys Lys Lys Ile Phe Lys Asn
 210 215 220
 Pro Val His Ile Gly Lys Glu Asp Gln Ile Ile Glu Asn Arg Ile Gln
 225 230 235 240
 Met Asn Tyr Met Phe Asn Tyr Trp Leu Glu Ser Ser Thr Asn Ile Asp
 245 250 255
 Thr Tyr Asn Asn Gln Leu Thr Leu Lys Phe Pro Asp Thr Asp Thr Ile
 260 265 270
 Tyr Ser Tyr Asp Ser Ile Lys Glu Glu Leu Val Pro Gln Tyr Ala Ile
 275 280 285
 Trp Val Asp Glu Glu Lys Gly Asp Tyr Glu Tyr Thr His Leu Trp Phe
 290 295 300
 Arg Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile His Ser Tyr Tyr Ser
 305 310 315 320
 Thr Lys Glu Asn Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu Val Tyr
 325 330 335
 Ile Tyr Cys Tyr Asn Lys Gln Glu Lys Asn Val Arg Leu Gln Lys Gln
 340 345 350
 Gln Gly Glu Ile Thr Glu Arg Asp Val Ser Trp Phe Ser Ile Pro Phe
 355 360 365
 Arg Arg Met Glu Cys Pro Phe Val Leu Ser Asn Asp Leu Cys Gly Gly
 370 375 380
 Asp Phe Ile Ile Asp Phe Arg Ser Ser Gly Lys Tyr Trp Val Asp Val
 385 390 395 400
 Leu Tyr Leu Gly Asn Asp Gly Asn Arg Val Asp Leu Asn Gln Ile Lys
 405 410 415
 Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile Gln Val
 420 425 430
 Leu Glu Ser Ala Thr Glu Asp Ser Asn Pro Val Leu Met Ile Ala Thr
 435 440 445
 Leu Lys
 450

<210> 8783

<211> 68

<212> PRT

<213> B.fragilis

<400> 8783

Thr Thr Val Tyr Lys His Asn Arg His Glu Ser His Asp Phe Asn Pro

```

1           5           10           15
Lys Tyr Pro Asp Ser Tyr Lys Leu Val Ile Gln Val Asn Phe Thr Ile
20           25           30
Ile Pro Thr Phe Ala Leu Tyr Ile His Gln Tyr Asn Ala Asn Gly Ser
35           40           45
Ser Lys Asn Leu Leu Met Val His Ser Tyr Lys Arg Gln Tyr Leu Val
50           55           60
Tyr Thr Phe Phe
65

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<210> 8784

<211> 366

<212> PRT

<213> B.fragilis

<400> 8784

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His Met Lys His Ile Gly Arg Leu Ala Leu Phe Leu Cys Leu Ala Val
1           5           10           15
Asn Ala Phe Phe Ile Gly Met Leu Leu Leu Thr Ala Tyr Ser Pro Tyr
20           25           30
Ile Asn Pro Glu Val His Pro Val Gln Ser Cys Leu Gly Leu Thr Phe
35           40           45
Pro Ile Phe Leu Val Ile Asn Phe Cys Phe Leu Ile Phe Trp Leu Ile
50           55           60
Val Arg Tyr Arg Phe Ala Leu Val Pro Leu Leu Gly Phe Leu Leu Cys
65           70           75           80
Tyr Pro Gln Leu Arg Thr Tyr Met Pro Val Asn Pro Gly Thr Ala Gly
85           90           95
Gln Pro Glu Asn Ser Ile Lys Leu Leu Ser Tyr Asn Ile Met Ser Phe
100          105          110
Gly Asn Met Lys Lys Glu Asn Gly Gln Asn Pro Ile Leu Asn Tyr Ile
115          120          125
Lys Asn Ser Asn Ala Asp Ile Val Cys Met Gln Glu Tyr Ala Gly Ser
130          135          140
Glu Thr Ala Lys Ile His Leu Ser Asn Lys Glu Ile Arg Gln Ala Leu
145          150          155          160
Lys Asp Tyr Pro Tyr His Asn Ile Lys Gln Val Gly Lys Thr Gly Ala
165          170          175
Gly Ser Gln Leu Ala Cys Tyr Ser Lys Phe Pro Ile Leu Ser Ala Arg
180          185          190
Met Leu Asp Tyr Arg Ser Asn Tyr Asn Gly Ser Met Val Tyr Glu Ile
195          200          205
Lys Ile Gly Lys Asp Thr Val Leu Leu Ile Asn Asn His Leu Glu Ser
210          215          220
Asn Lys Leu Thr Arg Glu Asp Lys Val Val Tyr Glu Asp Met Leu Lys
225          230          235          240
Asp Pro Lys Ala Gly Lys Val Lys Ser Gly Val Arg Gln Leu Val Asn
245          250          255
Lys Leu Ala Glu Ala Ser Ala Ile Arg Ser Ala Gln Ala Arg Thr Ile
260          265          270
Ala Gln Glu Ile Ala His Ser Pro Tyr Pro Ser Val Ile Val Cys Gly
275          280          285
Asp Phe Asn Asp Ser Pro Ile Ser Tyr Ala His Arg Val Ile Ser Gln
290          295          300
Asp Met Asp Asp Ala Phe Thr Glu Ser Gly Cys Gly Leu Gly Ile Ser
305          310          315          320
Tyr Asn Gln Asn Lys Phe Tyr Phe Arg Ile Asp Asn Ile Leu Val Ser
325          330          335
Lys Asn Leu Lys Ala Ser Gly Cys Thr Val Asp Asn Ser Ile Lys Asp

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	340		345		350								
Ser	Asp	His	Tyr	Pro	Ile	Trp	Cys	Tyr	Ile	Thr	Leu	Pro	Asp
	355						360					365	

<210> 8785
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 8785
 Lys Arg Thr Asn Ser Arg Leu Phe Phe Cys Cys Arg Thr Glu Phe Ile
 1 5 10 15
 Arg Ile Phe Ala Phe Ile Met Met Arg Glu Glu Ala Asn Thr His Ile
 20 25 30
 Ile Thr Leu Ile Thr Leu Thr Asn Lys Lys Asp Ala Tyr Cys Asn Lys
 35 40 45
 Lys Pro Asp Asn Tyr Gln Cys Ser Pro Val Pro Arg Thr Ile Cys Ser
 50 55 60
 Thr Lys Leu Trp Asp Gln Leu Ile Arg Leu Ser Gly Ser Ala Leu Phe
 65 70 75 80
 Pro Cys Arg Gln Phe
 85

<210> 8786
 <211> 608
 <212> PRT
 <213> B.fragilis

<400> 8786
 Glu Leu Asn Lys Gly Ser Asp Met Gln Ala Ile Ile Leu Ala Ala Gly
 1 5 10 15
 Met Gly Arg Arg Leu Gly Glu Leu Thr Arg Tyr Asp Thr Lys Cys Met
 20 25 30
 Ile Glu Val Asn Gly Ile Arg Ile Ile Asp Arg Leu Leu Ala Asn Leu
 35 40 45
 Ala Val Ala Arg Leu Ser Arg Ile Val Leu Val Ile Gly Phe Gln Gly
 50 55 60
 Asp Lys Leu Arg Ala Tyr Leu Gly Asn Glu Tyr Cys Gly Ile Pro Ile
 65 70 75 80
 Tyr Tyr Leu Glu Asn Pro Tyr Tyr Ala His Thr Asn Asn Ile Tyr Ser
 85 90 95
 Leu Phe Leu Ala Arg His His Leu Ala Ser Asp Asp Thr Leu Leu Leu
 100 105 110
 Glu Ser Asp Ile Val Phe Glu Lys Arg Ile Leu Glu Arg Val Leu Glu
 115 120 125
 Glu Pro Tyr Pro Asn Val Ala Val Val Asp Arg Tyr Lys Ser Trp Met
 130 135 140
 Asp Gly Thr Met Val Thr Val Asp Glu Lys Gln Phe Ile Val Asp Phe
 145 150 155 160
 Val Ser Lys His Thr Phe Ser Tyr Glu Lys Thr Ser Thr Tyr Phe Lys
 165 170 175
 Thr Val Asn Ile Tyr Arg Phe Ser Lys Glu Phe Ser Val Gly Lys Tyr
 180 185 190
 Val Pro Phe Leu Glu Ala Tyr Cys Lys Cys Phe Asp Asn Ser Ala Tyr
 195 200 205
 Tyr Glu Gln Ile Leu Ala Val Leu Ser Leu Leu Asp Lys Ala Gly Leu
 210 215 220
 Lys Ala Leu Pro Leu Glu Gly Glu Lys Trp Tyr Glu Ile Asp Asp Met
 225 230 235 240

Gln Asp Leu Asp Ile Ala Glu Thr Leu Phe Gly Lys Lys Glu Gly Leu
 245 250 255
 Leu Pro Gly Tyr Gln Lys Arg Tyr Gly Gly Tyr Trp Arg Phe Pro Phe
 260 265 270
 Leu Leu Asp Phe Ala Tyr Leu Val Asn Pro His Phe Pro Thr Glu Arg
 275 280 285
 Met Leu Glu Glu Leu Lys Ala Asn Leu Asp Lys Leu Leu Arg Gln Tyr
 290 295 300
 Pro Ser Gly Ser Tyr Val Asn Arg Arg Leu Val Ala Lys His Trp Asn
 305 310 315 320
 Ile Pro Ala Glu Ala Val Ala Val Gly Asn Gly Ala Ala Glu Leu Ile
 325 330 335
 Arg Lys Leu Met Glu Leu Leu Pro Gly Arg Met Gly Val Ile Leu Pro
 340 345 350
 Thr Phe Glu Glu Tyr Leu Val Arg Asp Asp Arg Ile Glu Thr Phe Leu
 355 360 365
 Pro Leu Gly Pro Gly Tyr Arg Tyr Thr Val Ser Asp Leu Lys Ile Phe
 370 375 380
 Phe Glu Asp Lys Gly Val Thr Ser Leu Leu Leu Leu Asn Pro Asp Asn
 385 390 395 400
 Pro Ser Gly Asn Ser Ile Pro Tyr Glu Asp Leu Ile Ser Leu Ala Gly
 405 410 415
 Trp Thr Gln Glu Arg Ser Ile Arg Leu Ile Val Asp Glu Ser Phe Ile
 420 425 430
 Asp Phe Ser Glu Gly Gly Glu Glu Thr Ser Leu Ile Gly Asp Lys Ile
 435 440 445
 Leu Lys Glu Tyr Asn His Leu Val Val Ile Lys Ser Leu Ser Lys Ser
 450 455 460
 His Gly Ile Pro Gly Leu Arg Leu Gly Ile Ala Val Ser Gly Asp His
 465 470 475 480
 Lys Leu Met Asp Glu Leu Gln Gln Lys Leu Pro Val Trp Asn Ile Asn
 485 490 495
 Ser Leu Ala Glu Tyr Tyr Leu Gln Ile Leu Asp Lys Tyr Thr Ile Asp
 500 505 510
 Tyr Arg Gln Ala Cys Ala Arg Phe Arg Glu Glu Arg Thr Leu Phe Phe
 515 520 525
 Glu Glu Leu Gln Glu Val Gly Tyr Leu Ala Val Phe Pro Ser Gln Ala
 530 535 540
 Asn Phe Phe Leu Cys Glu Val Thr His Lys Tyr Ser Ala Arg Glu Leu
 545 550 555 560
 Ala Glu Val Leu Leu Arg Glu His Asp Ile Leu Val Lys Asp Cys Ser
 565 570 575
 Leu Lys Arg Gly Met Tyr Gly Lys Gln Tyr Ile Arg Ile Ala Ile Arg
 580 585 590
 Ser Lys Glu Glu Asn Arg Tyr Leu Ala Gly Ile Leu Lys Tyr Lys Leu
 595 600 605

<210> 8787

<211> 154

<212> PRT

<213> B.fragilis

<400> 8787

Lys Ser Leu Leu Arg Val Ile Ala Glu Glu Ala Phe Tyr Phe Leu Thr
 1 5 10 15
 Asp Leu Pro Phe Thr Glu Thr Arg Ser Asn Glu Lys Glu Ile Lys Gly
 20 25 30
 Arg Glu Cys Arg Cys Asn Leu Leu Asn Leu Pro His Gly His Leu Thr
 35 40 45

Lys Val Ile Thr Ser His Thr Lys Ser Lys Cys Ile Leu Ala Pro Pro
 50 55 60
 Gly Arg Met His Leu His Thr Asn Lys Thr Asn Lys Pro Ile Cys
 65 70 75 80
 His Arg Trp Ala Leu Ala Leu Ile Arg Thr Phe Thr Ile Ser Pro Gly
 85 90 95
 Gly Ile Leu Met Leu Arg Leu Lys Ile His Leu Cys Thr Arg Phe Glu
 100 105 110
 Ser His Arg Leu Phe Ser Arg Asn Ser His Tyr Leu Ser Arg Arg Gln
 115 120 125
 Ile Ile Thr Phe Thr Gly Phe Ala Leu Phe Tyr Phe Lys Gly Ser Glu
 130 135 140
 Thr Tyr Gln Cys Asp Gly Phe Ser Leu Met
 145 150

<210> 8788

<211> 1011

<212> PRT

<213> B.fragilis

<400> 8788

Ile Lys Ser Lys Met Gln Asn Lys Gly Phe Val Lys Val Phe Ala Val
 1 5 10 15
 Leu Leu Thr Leu Val Cys Val Phe Tyr Leu Ser Phe Ser Phe Val Thr
 20 25 30
 Arg His Tyr Thr Asn Lys Ala Lys Glu Phe Ala Lys Gly Asp Val Lys
 35 40 45
 Val Glu Gln Asp Tyr Leu Asp Ser Leu Ser Asn Glu Lys Val Trp Leu
 50 55 60
 Gly Asn Tyr Thr Leu Lys Gln Cys Arg Glu Met Glu Ile Ser Leu Gly
 65 70 75 80
 Leu Asp Leu Lys Gly Gly Met Asn Val Ile Leu Glu Val Ser Val Pro
 85 90 95
 Asp Val Ile Lys Ala Leu Ala Asp Asn Lys Pro Asp Glu Ala Phe Asn
 100 105 110
 Lys Ala Leu Ala Glu Ala Ala Lys Gln Ala Thr Thr Ser Gln Asp Asp
 115 120 125
 Val Ile Thr Leu Phe Ile Lys Glu Tyr His Lys Val Ala Pro Gly Ala
 130 135 140
 Lys Leu Ser Glu Leu Phe Ala Thr Gln Gln Leu Lys Asp Lys Val Asn
 145 150 155 160
 Gln Lys Ser Ser Asp Ala Glu Val Glu Lys Val Leu Arg Glu Glu Val
 165 170 175
 Lys Ala Ala Val Thr Asn Ser Tyr Asn Val Leu Arg Thr Arg Ile Asp
 180 185 190
 Arg Phe Gly Val Val Gln Pro Asn Ile Gln Ser Leu Glu Asp Lys Met
 195 200 205
 Gly Arg Ile Met Val Glu Leu Pro Gly Ile Lys Glu Pro Glu Arg Val
 210 215 220
 Arg Lys Leu Leu Gln Gly Ser Ala Asn Leu Glu Phe Trp Glu Thr Tyr
 225 230 235 240
 Asn Ala Lys Glu Val Ala Pro Tyr Leu Gln Ala Ala Asp Ser Lys Leu
 245 250 255
 Arg Ala Val Leu Ala His Glu Ala Thr Val Asn Asp Thr Val Ala Ala
 260 265 270
 Val Asp Ser Thr Ala Leu Ala Ala Glu Ala Thr Pro Asp Lys Ala
 275 280 285
 Val Ser Ala Ala Asp Ser Leu Ala Ala Ala Leu Lys Gly Gly Glu Lys
 290 295 300

Lys Gln Gln Ala Ser Ser Ala Asp Leu Glu Gln Leu Lys Lys Glu His
 305 310 315 320
 Pro Leu Leu Ala Ile Leu Ser Val Asn Pro Asn Gly Gly Pro Val Val
 325 330 335
 Gly Tyr Ala Asn Tyr Lys Asp Thr Ala Thr Val Asn Ser Tyr Leu Ala
 340 345 350
 Met Lys Glu Val Ala Ala Glu Leu Pro Lys Asp Leu Arg Leu Lys Trp
 355 360 365
 Gly Val Ser Pro Phe Glu Tyr Asp Pro Lys Gly Gln Thr Phe Glu Leu
 370 375 380
 Tyr Ala Ile Lys Ser Thr Glu Arg Asn Gly Lys Ala Pro Leu Glu Gly
 385 390 395 400
 Asp Val Val Thr Asp Ala Lys Asp Asp Tyr Asp Gln Tyr Gly Lys Pro
 405 410 415
 Ser Val Ser Met Ser Met Asn Ser Asp Gly Ala Arg Arg Trp Ala Leu
 420 425 430
 Leu Thr Lys Gln Asn Ile Asn Lys Ser Ile Ala Ile Val Leu Asp Asn
 435 440 445
 Tyr Val Tyr Ser Ala Pro Asn Val Ser Asn Glu Ile Thr Gly Gly Asn
 450 455 460
 Ser Gln Ile Thr Gly His Phe Thr Pro Glu Gln Ala Lys Asp Leu Ala
 465 470 475 480
 Asn Val Leu Lys Ser Gly Lys Met Pro Ala Pro Ala His Ile Val Gln
 485 490 495
 Glu Asp Ile Val Gly Pro Ser Leu Gly Gln Glu Ser Ile Asn Ala Gly
 500 505 510
 Ile Phe Ser Phe Val Val Ala Leu Ile Leu Leu Met Ile Tyr Met Cys
 515 520 525
 Ser Met Tyr Gly Phe Ile Pro Gly Met Ile Ala Asn Gly Ala Leu Val
 530 535 540
 Leu Asn Phe Phe Phe Thr Leu Gly Ile Leu Ser Ser Phe Gln Ala Ala
 545 550 555 560
 Leu Thr Met Ser Gly Ile Ala Gly Met Val Leu Ser Leu Gly Met Ala
 565 570 575
 Val Asp Ala Asn Val Leu Ile Tyr Glu Arg Thr Lys Glu Glu Leu Arg
 580 585 590
 Ser Gly Lys Gly Val Lys Lys Ala Leu Ala Asp Gly Tyr Ser Asn Ala
 595 600 605
 Phe Ser Ala Ile Phe Asp Ser Asn Leu Thr Ser Ile Ile Thr Gly Ile
 610 615 620
 Ile Leu Phe Tyr Phe Gly Thr Gly Pro Ile Arg Gly Phe Ala Thr Thr
 625 630 635 640
 Leu Ile Ile Gly Ile Leu Cys Ser Phe Phe Thr Ala Val Phe Met Thr
 645 650 655
 Arg Leu Val Tyr Glu His Phe Met Ser Lys Asp Lys Leu Leu Asn Leu
 660 665 670
 Thr Phe Thr Ser Pro Ile Ser Lys Lys Met Leu Val Asn Thr His Phe
 675 680 685
 Asp Phe Met Gly Gly Asn Lys Lys Trp Leu Thr Ile Thr Gly Val Ile
 690 695 700
 Leu Leu Ile Cys Ile Gly Ser Leu Val Thr Arg Gly Leu Ser Gln Ser
 705 710 715 720
 Ile Asp Phe Thr Gly Arg Asn Phe Lys Val Gln Phe Glu Asn Pro
 725 730 735
 Ile Glu Pro Glu Gln Val Arg Glu Leu Ile Ser Asn Lys Phe Gly Asp
 740 745 750
 Ala Asn Val Ser Val Ile Ser Ile Gly Thr Asp Lys Lys Thr Val Arg
 755 760 765
 Ile Ser Thr Asn Tyr Arg Ile Gln Asp Glu Gly Asn Asn Val Asp Ser

770		775		780
Glu Ile Glu Ser Tyr	Leu Tyr Glu Ala Leu Lys	Pro Met Leu Thr Gln		
785	790	795		800
Asn Ile Thr Leu Ala	Thr Phe Ile Asp Arg	Asn His Thr Gly Gly		
	805	810		815
Ser Ile Ile Ser Ser	Gln Lys Val Gly Pro	Ser Ile Ala Asp Asp	Ile	
	820	825		830
Lys Thr Ser Ala Ile	Trp Ser Val Val Phe	Ala Leu Val Ala Ile	Gly	
	835	840		845
Leu Tyr Ile Leu Ile	Arg Phe Arg Asn Ile	Ala Tyr Ser Ala Gly	Ser	
	850	855		860
Val Ala Ala Leu Thr	Ser Asp Thr Leu Met	Ile Leu Gly Ala Tyr	Ser	
865	870	875		880
Leu Cys Trp Gly Trp	Met Pro Phe Ser Leu	Glu Ile Asp Gln Thr	Phe	
	885	890		895
Ile Gly Ala Ile Leu	Thr Ala Ile Gly Tyr	Ser Ile Asn Asp Lys	Val	
	900	905		910
Val Ile Phe Asp Arg	Val Arg Glu Phe Phe	Gly Leu Tyr Pro Lys	Arg	
	915	920		925
Asn Val Lys Gln Leu	Phe Asp Asp Ser Leu	Asn Thr Thr Leu Ala	Arg	
	930	935		940
Thr Ile Asn Thr Ser	Leu Ser Thr Leu Ile	Val Leu Leu Cys Ile	Phe	
945	950	955		960
Ile Leu Gly Gly Asp	Ser Ile Arg Ser Phe	Ala Phe Ala Met Ile	Leu	
	965	970		975
Gly Val Val Ile Gly	Thr Leu Ser Ser Leu	Phe Val Ala Ser Pro	Ile	
	980	985		990
Ala Tyr Met Met Leu	Lys Asn Lys Lys Gly	Ser Ala Pro Ala Thr	Thr	
	995	1000		1005
Thr Glu Glu				
1010				

<210> 8789
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 8789														
Ile Ser Pro Asn Arg Asp Ser Ser Val Thr Ser Asn Gly Thr Ile Ser														
1		5					10					15		
Thr Phe Glu Ala Ala Ser Leu Lys Arg Ser Glu Gly Thr Val Asp Thr														
	20					25						30		
Ser Ser Glu Arg Leu Ile Thr Gly Ile Pro Asp Leu Asp Ile Gly Ser														
	35					40						45		
Cys Phe Leu Leu Glu Leu His Pro Asn Asn Thr Asn Thr Pro Ile Ser														
	50				55						60			
Asn Lys Asp Met Cys Phe Ile Ala Thr Ile Glu Leu Arg Phe Ile Val														
65		70					75						80	
Cys Ala														

<210> 8790
 <211> 493
 <212> PRT
 <213> B.fragilis

<400> 8790														
Phe Glu Asn Lys Met Lys Ser Phe Thr Phe Phe Arg Thr Glu Glu Gly														
1		5					10						15	

Asn Tyr Tyr Leu Tyr Asn Ser Arg Lys Ser Ser Leu Leu Asn Val His
 20 25 30
 Pro Val Ile Lys Val Ile Glu Ala Leu Asp Asn Asn Asp Gly Glu Glu
 35 40 45
 Thr Leu Phe Ala Lys Ile Met Asn Gln Asn Leu Glu Ile Gly Asp Asp
 50 55 60
 Glu Lys Arg Leu Leu Leu Asp Lys Tyr Leu Phe Leu Arg Asp Asn Gly
 65 70 75 80
 Phe Phe Glu Glu Ile Asn Glu Glu Asp Phe Ile Asp Gly Lys Ile Thr
 85 90 95
 Pro Glu Ile Val Glu Lys Gln Ile Ala Phe Ile Asp Asn Val Leu Phe
 100 105 110
 Gln Val Thr Gly Asn Cys Asn Leu Arg Cys Gln Tyr Cys Cys Tyr Gly
 115 120 125
 Asp Met Tyr Ser Asp Lys Val Glu Lys Lys Asn Leu Ser Phe Glu Thr
 130 135 140
 Val Glu Thr Val Leu Asn Tyr Leu Met Ser Leu Trp Thr Ser Asn Lys
 145 150 155 160
 Asn Leu Ser Tyr Glu His Pro Ile Arg Ile Gly Phe Tyr Gly Gly Glu
 165 170 175
 Pro Leu Val Asn Phe Ser Leu Ile Glu Lys Ile Val Ser Leu Cys Glu
 180 185 190
 Ser Ile Thr Glu Arg Thr Gly Leu Val Phe Ile Tyr Ser Met Thr Thr
 195 200 205
 Asn Ala Leu Leu Leu Asp Arg Tyr Lys Asp Phe Ile Val Arg His Asn
 210 215 220
 Phe Ser Leu Leu Ile Ser Met Asp Gly Asn Glu Ala His Asn Val Leu
 225 230 235 240
 Arg Ile Lys Pro Asp Gly Glu Gln Ser Phe Gln Thr Val Tyr Glu Asn
 245 250 255
 Val Lys Lys Leu Gln Gln Gln Tyr Pro Asp Tyr Phe Gln Asn Lys Val
 260 265 270
 Glu Phe Asn Ser Val Leu Asn Ser His Ser Ser Val Asp Asp Ile His
 275 280 285
 Asp Phe Ile Phe Asn Glu Phe Gly Lys Ile Pro Leu Ile Glu Thr Ile
 290 295 300
 Ser His Thr Ala Leu Ser Asp Glu Gln Lys Tyr Gln Glu Ile Ala Lys
 305 310 315 320
 Asp Tyr Lys Glu Ser Pro Glu Met Met Ile Lys Arg Lys Asp Arg Ser
 325 330 335
 Pro Val Tyr Lys Glu Leu Gly Phe Phe Phe Tyr Tyr Gln Leu Asp Asn
 340 345 350
 Ala Tyr Lys His Tyr Cys Glu Val Leu Tyr Gly Thr Ile Lys Gln Lys
 355 360 365
 Lys Arg Ile Pro Thr Gly Thr Cys Leu Pro Phe Phe Lys Lys Met Phe
 370 375 380
 Val Thr Ala Asp Asn Lys Leu Leu Thr Cys Glu Arg Ile Ser Leu His
 385 390 395 400
 His Val Leu Gly Thr Val Asp Asn Glu Val His Leu Asn Phe Gly Glu
 405 410 415
 Ile Ala Ser Ile Tyr Asn Ser Tyr Tyr Glu Lys Met Arg Ser Gln Cys
 420 425 430
 Arg Gly Cys Tyr Leu Ile Glu Asn Cys Gly Glu Cys Phe Leu Gln Phe
 435 440 445
 Pro Leu Lys Asn Gly Val Pro Val Cys His Val Lys Met Asn Glu Ile
 450 455 460
 Gln Tyr Gln His Tyr Leu Ser Glu Ile Phe Gly Val Leu Glu Lys Asn
 465 470 475 480
 Pro Ser Leu Phe Glu Glu Val Asn Lys Met Val Phe Ala

485

490

<210> 8791
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 8791

Cys	Asn	Ser	Asn	Leu	Leu	Ala	Met	Asp	Lys	Ile	Glu	Phe	Arg	Glu	Asp
1				5					10					15	
Lys	Ile	Thr	Phe	Ser	Tyr	Lys	Lys	Ser	Tyr	Gly	Glu	Cys	Leu	Tyr	Gln
			20					25					30		
Asp	Leu	Ile	Ala	Val	Glu	Tyr	Ser	Lys	Pro	Tyr	Cys	Ile	Leu	Gln	Ile
			35					40				45			
Gly	Gly	Arg	Asn	Ser	Ile	Leu	Phe	Leu	Ile	Ser	Leu	Arg	Val	Ile	Leu
	50					55					60				
Glu	Lys	Leu	Pro	Ala	Asp	Phe	Leu	Leu	Ile	Asn	Arg	Gly	Ile	Ile	Val
65					70					75					80
Asn	Lys	Glu	Arg	Ile	Val	Asp	Cys	Val	Leu	Gln	Asp	Gly	Ala	Tyr	His
				85					90					95	
Ile	Lys	Met	Asp	Asn	Asn	Lys	Ile	Tyr	Arg	Ile	Ser	Thr	Arg	Lys	Leu
			100					105					110		
Ala	Thr	Val	Lys	Lys	Tyr	Phe	Met	Val	Gln	Asn	Asp	Thr	Ile		
			115				120						125		

<210> 8792
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 8792

Asn	Lys	Gln	Asn	Glu	Gln	Ser	Met	Lys	Lys	Val	Ile	Leu	Ala	Val	Ala
1				5					10					15	
Ser	Ile	Ala	Leu	Trp	Ala	Ser	Cys	Ile	Glu	Asp	Glu	Lys	Asp	Tyr	Ser
			20					25					30		
Gln	Ile	Ile	Glu	Thr	Arg	Val	Ala	Asn	Cys	Glu	Thr	Ser	Lys	Asp	Phe
		35					40					45			
Ser	Val	Pro	Val	Lys	Glu	Gly	Tyr	Thr	Thr	Phe	Val	Thr	Ser	Gly	Glu
	50					55					60				
Asp	Thr	Leu	Ala	Met	Ala	Asn	Glu	Pro	Ile	Thr	Ile	Arg	Ile	Pro	Lys
65					70					75					80
Asn	Ala	Thr	Ile	Ser	Thr	Arg	Ala	Glu	Gly	Asp	Gly	Ile	Asn	Ile	Ser
				85					90					95	
Tyr	Thr	Ile	Leu	Asp	Glu	Gly	Ser	Glu	Thr	Thr	Tyr	Ala	Lys	Val	Trp
		100						105					110		
Gln	Ala	Ile	Met	Phe	Glu	Asp	Thr	Gln	Asn	Gly	Asp	Tyr	Asp	Tyr	Asn
		115					120					125			
Asp	Leu	Ile	Ile	His	Val	Lys	Asn	Thr	Ala	Ser	Asn	His	Ala	Tyr	Gln
	130					135					140				
His	Pro	Ser	Glu	Thr	Trp	Gln	Thr	Ile	Glu	Ile	Gln	Pro	Ile	Ala	Leu
145					150					155					160
Gly	Ser	Thr	Lys	Thr	Ile	Lys	Leu	Gly	Cys	Ile	Leu	Ser	Asp	Gly	Ser
			165						170					175	
Thr	His	Met	Ile	Ser	Asp	Asp	Val	Arg	Thr	Asp	Leu	Phe	Gly	Gly	Arg
		180						185					190		
Gln	Gly	Phe	Ile	Asn	Thr	Val	Asn	Asp	Asn	Asp	Pro	Ile	Arg	Tyr	Lys
		195					200					205			
Leu	Ala	Ser	Thr	Asn	Ile	Lys	Asn	Tyr	Ala	Met	Pro	Lys	Lys	Glu	Lys
		210				215					220				

```

Thr Ser Ala Ala Trp Val Ala Trp Phe Ile Glu Val Asp Gly Lys Arg
225                230                235                240
Met Tyr Ala Ala Ser Ser Asp Ile Asp Tyr Lys Ser Tyr Asp Met Val
                245                250                255
Asn Lys Glu Asn Met Pro Tyr Gly Leu Ala Val Ser Asn Asn Asn Gly
                260                265                270
Thr Phe Ser Tyr Pro Gln Glu Lys Asn Ser Leu Phe Glu Thr Tyr Pro
                275                280                285
Gly Phe Ser Asp Trp Ile Asn Gly Lys Val Ser Ser Ile Gly Ser Phe
                290                295                300
Gln Lys Glu Leu Val Tyr Lys Tyr Cys Ser Gly Gly Ile Ile Gly Glu
305                310                315                320
Asp Gly Lys Ser His Lys Ile Trp Asp Tyr Leu Asp Leu Asn
                325                330

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<210> 8793

<211> 1003

<212> PRT

<213> B.fragilis

<400> 8793

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Ile Met Lys Lys Lys Ile Ser Arg Leu Ile Cys Ala Val Ala Cys Cys
1                5                10                15
Val Pro Val Ala Leu Gln Ala Gln Thr Ser Glu Lys Ile Thr Ser Pro
                20                25                30
Val Asn Leu Tyr Lys Glu Gly Lys Glu Leu Phe Leu Gln Lys Asn Tyr
                35                40                45
Ala Ala Ala Met Pro Pro Leu Arg Thr Phe Val Arg Gln Lys Ala Asp
                50                55                60
Val Asn Leu Lys Glu Glu Ala Glu Tyr Met Leu Val Cys Ser Ala Tyr
65                70                75                80
Glu Leu Lys Asp Arg Asn Ala Ile Ala Gln Leu Arg Asn Tyr Leu Asp
                85                90                95
Thr Tyr Pro Asp Thr Pro His Ala Asn Arg Ile Tyr Ala Leu Ile Ala
                100                105                110
Ser Ala Tyr Phe Tyr Gln Gly Asn Tyr Asp Glu Ala Leu Ala Leu Phe
                115                120                125
Asn Ser Ser Arg Leu Asp Leu Leu Gly Asn Glu Glu Arg Asp Asp Met
                130                135                140
Thr Tyr Gln Leu Ala Thr Cys Tyr Leu Lys Val Gly Asn Val Lys Glu
145                150                155                160
Ala Ala Ile Trp Phe Glu Thr Leu Lys Ala Ser Ser Pro Lys Tyr Ala
                165                170                175
Asn Asp Cys Ser Tyr Tyr Ile Ser Tyr Ile Arg Tyr Thr Gln Lys Arg
                180                185                190
Tyr Asp Glu Ala Leu Lys Gly Phe Leu Pro Leu Gln Asp Asp Ala Lys
                195                200                205
Tyr Lys Ala Leu Val Pro Tyr Tyr Ile Ala Glu Ile Tyr Ala Val Lys
                210                215                220
Lys Asn Tyr Asp Lys Ala Gln Ile Val Ala Gln Asn Tyr Leu Ser Ala
225                230                235                240
Tyr Pro Gln Asn Glu His Ala Ala Glu Met Tyr Arg Ile Leu Gly Asp
                245                250                255
Ala Tyr Tyr His Phe Gly Asp Tyr His Lys Ala Val Ala Ser Phe Arg
                260                265                270
Asn Tyr Leu Glu Lys Glu Asn Thr Pro Arg Arg Asp Ala Leu Tyr Met
                275                280                285
Leu Gly Leu Ser Tyr Phe Gln Thr Gly Val Phe Ser Lys Ala Ala Glu
290                295                300

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Thr	Leu	Gly	Glu	Val	Thr	Thr	Glu	Ser	Asp	Ala	Leu	Thr	Gln	Asn	Ala	305	310	315	320
Tyr	Leu	His	Met	Gly	Leu	Ala	Tyr	Leu	His	Leu	Ala	Glu	Lys	Asn	Lys	325	330	335	
Ala	Arg	Met	Ala	Phe	Glu	Gln	Ala	Ala	Ser	Asn	Ala	Asn	Leu	Lys		340	345	350	
Ile	Lys	Glu	Gln	Ala	Ala	Tyr	Asn	Tyr	Ala	Leu	Cys	Ile	His	Glu	Thr	355	360	365	
Ser	Tyr	Ser	Ala	Phe	Gly	Glu	Ser	Val	Thr	Val	Phe	Glu	Lys	Phe	Leu	370	375	380	
Asn	Glu	Phe	Pro	Asn	Ser	Glu	Tyr	Ala	Glu	Met	Val	Ser	Ser	Tyr	Leu	385	390	395	400
Val	Glu	Val	Tyr	Met	Asn	Thr	Arg	Ser	Tyr	Glu	Ala	Ala	Leu	Lys	Ser	405	410	415	
Ile	Asp	Arg	Ile	Ala	His	Pro	Gly	Lys	Arg	Ile	Leu	Glu	Ala	Lys	Gln	420	425	430	
Arg	Ile	Leu	Phe	Gln	Leu	Gly	Thr	Gln	Ala	Phe	Ala	Asn	Thr	Gln	Phe	435	440	445	
Glu	Gln	Ala	Ile	Gly	Tyr	Phe	Asp	Arg	Ser	Leu	Gly	Leu	Gly	Gln	Tyr	450	455	460	
Asn	Arg	Gln	Thr	Lys	Ala	Asp	Ala	Leu	Tyr	Trp	Arg	Gly	Glu	Ala	Tyr	465	470	475	480
Tyr	Arg	Leu	Asn	Arg	Met	Glu	Glu	Ala	Lys	Arg	Asn	Phe	Thr	Asp	Tyr	485	490	495	
Leu	Gln	Leu	Thr	Gln	Gln	Thr	His	Asn	Glu	Met	Tyr	Ala	Leu	Ala	His	500	505	510	
Tyr	Asn	Leu	Gly	Tyr	Ile	Ala	Phe	His	Gln	Lys	Asp	Tyr	Thr	Gln	Ala	515	520	525	
Gln	Asn	Trp	Phe	Arg	Lys	Tyr	Ile	Ser	Leu	Glu	Lys	Gly	Glu	Asn	Lys	530	535	540	
Thr	Ala	Leu	Ala	Asp	Ala	Tyr	Asn	Arg	Ile	Gly	Asp	Cys	Tyr	Leu	Asp	545	550	555	560
Val	Arg	Asn	Phe	Asp	Glu	Ala	Lys	His	Tyr	Tyr	Ser	Gln	Ala	Glu	Ala	565	570	575	
Met	Asn	Thr	Pro	Ser	Gly	Asp	Tyr	Ser	Phe	Tyr	Gln	Leu	Ala	Leu	Val	580	585	590	
Ser	Gly	Leu	Gln	Lys	Asp	Tyr	Ser	Gly	Lys	Ile	Thr	Leu	Leu	Asn	Arg	595	600	605	
Leu	Ala	Gly	Lys	Tyr	Pro	Ala	Ser	Pro	Tyr	Ala	Ile	Ser	Ala	Leu	Tyr	610	615	620	
Glu	Lys	Gly	Arg	Ser	Tyr	Val	Leu	Met	Asp	Asn	Asn	Gln	Gln	Ala	Ile	625	630	635	640
Ala	Ser	Phe	Lys	Glu	Leu	Leu	Ala	Lys	Tyr	Pro	Glu	Ser	Pro	Val	Ser	645	650	655	
Arg	Lys	Ala	Ala	Ala	Glu	Ile	Gly	Leu	Leu	Tyr	Tyr	Gln	Asn	Glu	Asp	660	665	670	
Tyr	Asp	Gln	Ala	Ile	Asn	Ala	Tyr	Lys	Gln	Val	Val	Gln	Lys	Tyr	Pro	675	680	685	
Gly	Ser	Asp	Glu	Ala	Arg	Leu	Ala	Met	Arg	Asp	Leu	Lys	Ser	Ile	Tyr	690	695	700	
Val	Asp	Met	Asn	Arg	Ile	Asp	Glu	Phe	Ala	Ala	Leu	Ala	Ser	Ala	Met	705	710	715	720
Pro	Gly	Asn	Ile	Arg	Phe	Asp	Ala	Ser	Glu	Gln	Asp	Ser	Leu	Thr	Tyr	725	730	735	
Met	Ala	Ala	Glu	Lys	Ile	Tyr	Ile	Arg	Gly	Arg	Val	Glu	Gln	Ala	Lys	740	745	750	
Glu	Ser	Phe	Gly	Lys	Tyr	Leu	Gln	Thr	Phe	Pro	Asp	Gly	Ala	Phe	Gly	755	760	765	
Leu	Asn	Ala	His	His	Tyr	Leu	Cys	Leu	Ile	Gly	Lys	Glu	Gln	Lys	Asn				

```

      770                      775                      780
Tyr Asp Met Ile Leu Glu His Ser Gly Lys Leu Glu Tyr Pro Asp
785                      790                      795                      800
Asn Pro Phe Ser Glu Ala Leu Ile Met Arg Ala Glu Val Gln Phe
      805                      810                      815
Asn Lys Val Gln Phe Ala Asp Ala Leu Ala Ser Tyr Lys Met Leu Lys
      820                      825                      830
Glu Lys Ala Thr Thr Ala Glu Arg Arg Leu Leu Ala Glu Thr Gly Met
      835                      840                      845
Leu Arg Ala Ala Tyr Leu Leu Lys Asp Asp Thr Glu Thr Ile His Ala
      850                      855                      860
Ala Thr Ala Leu Leu Ser Glu Ala Lys Leu Ser Pro Glu Leu Lys Asn
865                      870                      875                      880
Glu Ala Leu Tyr Tyr Arg Ala Lys Ala Tyr Leu Asn Gln Lys Ala Asp
      885                      890                      895
Lys Ala Ala Met Gly Asp Leu Lys Glu Leu Ala Lys Asp Thr Arg Asn
      900                      905                      910
Leu Tyr Gly Ala Glu Ala Lys Phe Leu Val Ala Gln Glu Leu Tyr Asn
      915                      920                      925
Ser Gln Asn Tyr Ala Ala Ala Glu Lys Glu Leu Leu Asn Phe Ile Asp
      930                      935                      940
Gln Ser Thr Pro His Ala Tyr Trp Leu Ala Arg Gly Phe Ile Leu Leu
945                      950                      955                      960
Ser Asp Val Tyr Val Ala Met Asp Lys Lys Leu Asp Ala Arg Gln Tyr
      965                      970                      975
Leu Leu Ser Leu Gln Gln Asn Tyr His Ala Asp Asp Asp Ile Glu Ser
      980                      985                      990
Met Ile Glu Ser Arg Leu Asn Asn Leu Asn Lys
      995                      1000

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<210> 8794

<211> 801

<212> PRT

<213> B.fragilis

<400> 8794

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Gly Lys Glu Asn Val Phe Phe Tyr Phe Cys Gly Gln Phe Ile Cys Phe
1                      5                      10                      15
Asn Ile Thr Asp Met Gln Lys Asn Leu Val Ile Val Glu Ser Pro Ala
      20                      25                      30
Lys Ala Lys Thr Ile Glu Lys Phe Leu Gly Lys Asp Phe Lys Val Leu
      35                      40                      45
Ser Ser Tyr Gly His Ile Arg Asp Leu Lys Lys Lys Glu Phe Ser Ile
      50                      55                      60
Asp Ile Glu Lys Asn Phe Lys Pro Lys Tyr Glu Ile Pro Ala Glu Lys
65                      70                      75                      80
Gln Glu Leu Val Asn Lys Leu Lys Glu Glu Ala Ser Lys Ala Glu Thr
      85                      90                      95
Val Trp Leu Ala Ser Asp Glu Asp Arg Glu Gly Glu Ala Ile Ser Trp
      100                      105                      110
His Leu Tyr Glu Val Leu Lys Leu Lys Pro Glu Asn Thr Lys Arg Ile
      115                      120                      125
Val Phe His Glu Ile Thr Lys Thr Ala Ile Leu Lys Ala Ile Glu Gln
      130                      135                      140
Pro Arg Asp Ile Asp Ile Asn Leu Val Asn Ala Gln Gln Ala Arg Arg
145                      150                      155                      160
Ile Leu Asp Arg Ile Val Gly Phe Glu Leu Ser Pro Val Leu Trp Lys
      165                      170                      175
Lys Val Lys Pro Ala Leu Ser Ala Gly Arg Val Gln Ser Val Ala Val

```


Ser Met Glu Thr Ile Thr Leu Glu Glu Ala Leu Asp Leu Phe Lys Leu
660 665 670
Pro Arg Lys Val Gly Glu Phe Glu Asp Lys Thr Val Thr Ile Gly Thr
675 680 685
Gly Arg Phe Gly Pro Tyr Val Tyr His Asn Ser Lys Tyr Val Ser Leu
690 695 700
Pro Lys Thr Tyr Asp Pro Leu Glu Val Thr Leu Asp Glu Ala Ile Glu
705 710 715 720
Leu Ile Leu Ala Lys Arg Glu Ala Glu Ala Lys Lys His Ile Lys Lys
725 730 735
Phe Asp Glu Asp Ala Glu Met Glu Ile Leu Asn Gly Arg Tyr Gly Pro
740 745 750
Tyr Ile Ala Tyr Lys Gly Asn Asn Tyr Lys Ile Pro Lys Asp Val Val
755 760 765
Pro Val Asp Leu Asn Tyr Gln Thr Cys Leu Glu Ile Ile Lys Leu Gln
770 775 780
Ser Glu Lys Ala Glu Asn Ala Pro Lys Arg Gly Arg Tyr Ala Lys Lys
785 790 795 800
Lys

<210> 8795
<211> 569
<212> PRT
<213> B.fragilis

<400> 8795
Gln Ser Met Lys Tyr Asn Asn Tyr Ile Leu Leu Gly Ile Ala Phe Thr
1 5 10 15
Ala Leu Pro Val Ser Ile Gln Ala Gln Thr Gln Pro Lys Asp Thr Thr
20 25 30
Val Asn Arg Thr Val Ile Val Glu Gln Gln Tyr Asn Pro Asp Ile Met
35 40 45
Asp Ala Ala Lys Val Asn Val Leu Pro Lys Val Glu Glu Pro Ser Val
50 55 60
Ser Lys Lys Glu Val Glu Tyr Ala Thr Phe Thr Thr Pro Ala Thr Ser
65 70 75 80
Ile Pro Ala Gly Thr Ile Gly Ala Tyr Thr Gly Lys Glu Ile Gln Pro
85 90 95
Gly Phe Ile Pro Gly Tyr Val Arg Leu Gly Tyr Gly Asn Tyr Gly Asn
100 105 110
Leu Asp Val Leu Ala Asn Tyr Leu Phe Arg Leu Ser Asp Arg Asp Lys
115 120 125
Leu Asn Val Asn Phe Lys Met Asp Gly Met Asp Gly Thr Leu Asp Met
130 135 140
Pro Phe Gly Asp Thr Arg Lys Trp Asn Ala Phe Tyr Tyr Arg Thr Arg
145 150 155 160
Ala Asn Val Asp Tyr Val His Gln Phe Ala Lys Leu Asp Leu Asn Val
165 170 175
Ala Gly Asn Phe Gly Leu Ser Asn Phe Asn Tyr Glu Pro Tyr Gly Phe
180 185 190
Lys Lys Gln Lys Phe Thr Ser Gly Asp Val His Phe Gly Val Lys Ser
195 200 205
Thr Asp Glu Thr Leu Pro Leu Gln Tyr Arg Ala Glu Thr Asn Leu Met
210 215 220
Leu Tyr Gly Arg Gln Gln Cys Gln Leu Phe Gly Gly Val Asn Glu Thr
225 230 235 240
Met Val Arg Thr Leu Ala Thr Val Ser Gly Ser Val Ser Asp Glu Gln
245 250 255

Thr Val Ala Ile Gly Phe Ala Met Asn Asn Leu Ile Tyr Gly Asn Glu
 260 265 270
 Leu Lys Glu Asn Lys Asp Arg Ile Lys Asp Ile Phe Lys Asn Arg Thr
 275 280 285
 Thr Leu Asp Leu Asn Pro Tyr Tyr Glu Leu Asn Asn Asp Ser Trp Arg
 290 295 300
 Val His Val Gly Ala Asn Val Asp Leu Ser Phe Gly Asn Gly Lys Ala
 305 310 315 320
 Val Arg Val Ser Pro Asp Val Lys Ala Gln Tyr Val Phe Ser Asp Ser
 325 330 335
 Tyr Val Leu Tyr Ala Lys Ala Thr Gly Gly Arg Gln Leu Asn Asp Phe
 340 345 350
 Arg Arg Leu Glu Thr Tyr Asn Pro Tyr Leu Asp Pro Gly Gln Glu Val
 355 360 365
 Lys Asp Thr Tyr Glu Gln Leu Asn Ala Gly Leu Gly Phe Lys Ala Ser
 370 375 380
 Pro Thr Pro Gly Leu Trp Phe Asp Ile Phe Gly Gly Tyr Gln Asn Leu
 385 390 395 400
 Lys Asp Asp Leu Tyr Gln Ser Ala Asp Ala Trp Glu Gly Gly Asp Gly
 405 410 415
 Ala Asn Tyr Ile Gly Leu Gly Gln Thr His Thr Asp Asn Phe Tyr Ala
 420 425 430
 Gly Ile Lys Ala Ser Tyr Glu Tyr Lys Asp Leu Phe Ala Ile Ser Ala
 435 440 445
 Gly Gly Thr Tyr Tyr His Trp Asn Ala Asp Ala Gln Thr Thr Gly Ser
 450 455 460
 Lys Ser Ser Asp Tyr Asn Glu Ala Leu Leu Met Lys Pro Glu Phe Asp
 465 470 475 480
 Leu Gly Ile His Thr Glu Ile His Pro Ile Ala Ala Leu Trp Leu Asn
 485 490 495
 Ala Gly Tyr Gln Tyr Thr Arg Arg Ala Glu Arg Tyr Thr Gly Leu Tyr
 500 505 510
 Ala Lys Ser Ile Pro Ala Val Ser Asn Leu Ser Leu Gly Ala Thr Tyr
 515 520 525
 Arg Ile Phe Lys Gly Ile Ser Ala Tyr Val Lys Ala Asp Asn Leu Leu
 530 535 540
 Asn Lys Lys Tyr Gln Tyr Tyr Leu Tyr Tyr Pro Val Glu Gly Ile Asn
 545 550 555 560
 Phe Val Gly Gly Leu Ser Phe Arg Phe
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<210> 8796

<211> 436

<212> PRT

<213> B.fragilis

<400> 8796

Ile Val Met Lys Ser Ile Leu Leu Leu Leu Ile Ile Thr Leu Leu Gly
 1 5 10 15
 Cys Ser Ser Asn Met Lys Gln Glu Pro Ile Ser Lys Ser Gly Ile Pro
 20 25 30
 Val Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu
 35 40 45
 Ser Glu Ser Ala Glu Lys Leu Glu Ile Val Pro Leu Glu Met Thr Asp
 50 55 60
 Gln Ser Met Leu Gly Glu Ile Arg Arg Ile Gln Val Thr Glu His Asp
 65 70 75 80
 Ile Trp Ile His Asp Phe Asn Lys Phe Tyr Ile Tyr Arg Phe Ser Arg
 85 90 95

Thr Gly Lys Phe Leu Asn Arg Ile Gly Ser Ile Gly Gln Ala Pro Gly
 100 105 110
 Glu Tyr Val Asn Phe Ser Thr Phe Leu Val Asp Glu Tyr Lys Lys Glu
 115 120 125
 Val Tyr Ile Ile Ser Asn Asn Asn Gly Ile Leu Val Tyr Asn Phe Lys
 130 135 140
 Gly Glu Phe Lys Lys Lys Ile Val Asp Gln Gln Thr Ile Asn Asn Leu
 145 150 155 160
 Phe Ser Ser Val Tyr Ser Gln Tyr Ile Leu Tyr Asn Gly Asn Phe Phe
 165 170 175
 Ala Ala Gln Asn Ile Ala Leu Tyr Lys Leu Ile Asp Lys Asp Ser Leu
 180 185 190
 Trp Ser Phe Ala Phe Leu Asp Thr Ala Phe Gln Glu Lys Lys Leu Phe
 195 200 205
 Lys Asn Pro Ala His Met Gly Arg Glu Glu Gln Ile Ile Ala Asn Cys
 210 215 220
 Val Asp Lys Gly Arg Met Ile Asn Leu Trp Met Glu Tyr Gln Thr Ser
 225 230 235 240
 Ile Asp Thr Tyr Asn Asn Gln Leu Thr Leu Lys Tyr Pro Asp Thr Asp
 245 250 255
 Thr Ile Tyr Cys Tyr Asp Asp Ala Thr Asn Asp Leu Leu Ser Gln Tyr
 260 265 270
 Val Ile Cys Thr Arg Glu Glu Lys Gly Asp Tyr Glu Val Thr His Leu
 275 280 285
 Trp Phe Lys Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile Lys Ser Tyr
 290 295 300
 Tyr Pro Thr Lys Ala Phe Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu
 305 310 315 320
 Val Tyr Thr Tyr Cys Tyr Asn Lys Lys Asp Gly Ser Val Arg Leu Gln
 325 330 335
 Lys Arg Gln Ser Ala Ile Thr Glu Arg Asp Val Pro Trp Phe Ser Phe
 340 345 350
 Pro Leu Arg Gln Met Lys Arg Asp Phe Val Leu Asp Asn Asp Leu Gly
 355 360 365
 Gly Gly Asp Phe Thr Val Asp Ser Arg Ser Ser Gly Lys Tyr Trp Val
 370 375 380
 Asp Ile Leu Glu Pro Gly Gly Asp Glu Asn Trp Ile Asp Ile Asp Gln
 385 390 395 400
 Ile Lys Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile
 405 410 415
 Arg Val Leu Glu Ser Ala Thr Glu Asp Ser Asn Pro Ile Leu Met Ile
 420 425 430
 Ala Thr Leu Lys
 435

<210> 8797

<211> 436

<212> PRT

<213> B.fragilis

<400> 8797

Ile Val Met Lys Ser Ile Leu Leu Leu Leu Ile Ile Thr Leu Leu Gly
 1 5 10 15
 Cys Ser Ser Asn Lys Lys Gln Glu Pro Ile Ser Arg Ser Gly Val Pro
 20 25 30
 Val Ile Asn Leu Ser Glu Asp Val Ser Thr Val Pro Ser Leu Leu Leu
 35 40 45
 Ser Glu Ala Ala Glu Lys Leu Glu Ile Val Pro Leu Glu Met Thr Asp
 50 55 60

Glu Ser Val Leu Ser Asp Ile Thr Glu Met Gln Val Thr Asp His Asn
 65 70 75 80
 Ile Trp Ile Asp His Gly Arg Glu Phe Tyr Ile Tyr Arg Phe Ser Arg
 85 90 95
 Thr Gly Lys Phe Leu Asn Arg Ile Gly Ser Ile Gly Gln Gly Pro Gly
 100 105 110
 Glu Tyr Val Asn Tyr Leu Thr Phe Leu Val Asp Glu Asp Lys Lys Glu
 115 120 125
 Val Tyr Ile Phe Ser Thr Asn Asn Gly Val Leu Val Tyr Asp Phe Glu
 130 135 140
 Gly Gly Phe Lys Lys Gln Ile Ser Asp Phe Gln Thr Met Val Gly Met
 145 150 155 160
 Phe Ser Ser Ile Tyr Lys Gln Tyr Ile Leu Asn Asp His Lys Phe Phe
 165 170 175
 Ala Ile Gln Asn Phe Gly Leu Tyr Arg Ser Val Asp Lys Asp Ser Leu
 180 185 190
 Trp Ser Phe Val Ser Leu Asp Asp Asn Phe Gln Lys Lys Arg Leu Phe
 195 200 205
 Lys Asn Pro Val His Val Gly Lys Glu Glu Gln Ile Ile Ala Asn Arg
 210 215 220
 Ala Asn Met Asp Arg Met Val Asn Tyr Trp Met Glu Tyr Leu Thr Ser
 225 230 235 240
 Val Asp Ile Tyr Asn Gly Gln Leu Thr Leu Lys Tyr Pro Asp Thr Asp
 245 250 255
 Thr Ile Tyr Cys Tyr Asp Asp Ala Thr Asn Gln Leu Leu Pro Gln Tyr
 260 265 270
 Ala Ile Phe Thr Asp Glu Glu Lys Gly Asp Tyr Glu Ala Thr His Leu
 275 280 285
 Trp Phe Lys Asp Arg Lys Ala Phe Asp Tyr Phe Ser Ile Phe Ser Tyr
 290 295 300
 Tyr Pro Thr Lys Asp Phe Ile Tyr Leu Val Gly Ser Lys Gly Glu Glu
 305 310 315 320
 Val Tyr Thr Tyr Cys Tyr Asn Lys Lys Asp Gly Ser Val Arg Leu Gln
 325 330 335
 Lys Arg Gln Ser Thr Ile Thr Glu Arg Asp Val Pro Trp Phe Ser Phe
 340 345 350
 Pro Leu Arg Gln Met Lys Arg Asp Phe Val Leu Asp Asn Asp Leu Gly
 355 360 365
 Gly Gly Asp Phe Thr Val Asp Ser Arg Ser Ser Gly Lys Tyr Trp Ile
 370 375 380
 Asp Ile Leu Glu Pro Gly Gly Asp Glu Asn Trp Ile Asp Ile Asp Gln
 385 390 395 400
 Ile Lys Ser Ser Thr Val Ile Asp Glu Ser Lys Lys Lys Glu Leu Ile
 405 410 415
 Arg Val Leu Glu Ser Thr Thr Glu Asp Ser Asn Pro Ile Leu Met Ile
 420 425 430
 Ala Thr Leu Lys
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<210> 8798

<211> 411

<212> PRT

<213> B.fragilis

<400> 8798

Asn Gly Val Cys Met Lys Lys Tyr Trp Phe Ile Val Glu Thr Tyr Val
 1 5 10 15
 Phe Leu Trp Lys Lys Glu Asp His Ile Leu Val Tyr Asn Ser Ile Ser
 20 25 30

Gly Lys Gly Tyr Ile Tyr Lys Cys Ser Pro Asp Leu Leu Ser Phe Met
 35 40 45
 Asp Gln Leu Met Leu Pro Glu Asn Leu Tyr Cys Ser Gln Val Asp Glu
 50 55 60
 Glu Leu Leu Arg Arg Lys Ser Ile Gly Glu Phe Val Ile Ser Met Gln
 65 70 75 80
 Ser Asn Phe Cys Gly Ser Leu Phe Asp Val Asp Glu Phe Pro Gln Lys
 85 90 95
 Pro Ile Val Ala Val Pro Asp Val Asn Ile Gly Glu Asp Ile Glu Gly
 100 105 110
 Val Asp Asn Ser Val Phe Gly Gly Asn Val Leu Arg Asn Leu Thr Asp
 115 120 125
 Val Phe Ile Cys Leu Thr Gly Lys Cys Asn Lys Asn Cys Pro Asp Cys
 130 135 140
 Asn Leu Ile Tyr Lys Gln Met Cys Trp Cys His Lys Ser Asn Glu Ser
 145 150 155 160
 Leu Ala Phe Glu Lys Leu Glu Ala Ile Leu Lys Lys Leu Glu Tyr Leu
 165 170 175
 Asn Val Phe Glu Leu His Phe Thr Gly Gly Asn Met Phe Leu Tyr Pro
 180 185 190
 Tyr Trp Arg Glu Leu Leu Ile Lys Leu Asn Glu Ile Ser Tyr Lys Lys
 195 200 205
 Ser Phe Tyr Val His Tyr Ser Gln Leu Arg Gly Tyr Asp Glu Asp Ile
 210 215 220
 Asp His Ile Leu Asn Leu Glu Asn Ser Val Ile Arg Ile Leu Val Asp
 225 230 235 240
 Phe Ala Asp Phe Asp Val Glu Asn Leu Leu Leu Ile Ser Lys Ser Gly
 245 250 255
 Gly Pro Phe Glu Tyr Leu Phe Lys Ile Thr Ser Trp Asn Glu Tyr Asn
 260 265 270
 Glu Ala Cys Asp Ile Ile Glu Arg Leu Cys Leu Asn Ala Lys Ile Ile
 275 280 285
 Pro Phe Tyr Asn Val Gly Asn Tyr Ser Phe Phe Glu Asp Asn Val Phe
 290 295 300
 Leu Asn Met Gln Asp Ile Leu Ser Thr Lys Trp Thr Lys Asn Glu Ile
 305 310 315 320
 Phe Ala Asn Gln Lys Leu Asn Thr Asn Asp Phe Gly Lys Ile Arg Ile
 325 330 335
 Leu Glu Asn Gly Phe Val Tyr Ala Asn Leu Asn Phe Ala Pro Ile Gly
 340 345 350
 Lys Trp His Asp Asp Tyr Arg Glu Ile Val Tyr Asn Glu Leu Lys Arg
 355 360 365
 Gly Thr Ser Trp Arg Arg Thr Arg Asp Ser Leu Pro Val Cys Lys Glu
 370 375 380
 Cys Leu Cys Lys Tyr Leu Cys Pro Ser Pro Ser Asn Tyr Glu Leu Ala
 385 390 395 400
 Ile Gly Lys Ser Asn Leu Cys His Val Lys Ser
 405 410

<210> 8799

<211> 126

<212> PRT

<213> B.fragilis

<400> 8799

Ser Val Thr Cys Ile Ser Val Ile Ser Leu Asn Thr Asp Ser Ser Val
 1 5 10 15
 Ile Ser Lys Gly Thr Ile Ser Asn Phe Ser Ala Ala Ser Leu Lys Arg
 20 25 30

Ser Glu Gly Thr Val Asp Thr Ser Ser Glu Arg Leu Ile Thr Gly Thr
 35 40 45
 Pro Asp Leu Asp Ile Gly Ser Cys Phe Leu Leu Glu Leu His Pro Asn
 50 55 60
 Ser Val Ile Ile Ser Asn Asn Ile Asp Phe Ile Thr Ile Tyr Leu
 65 70 75 80
 Leu Glu Thr Thr Tyr Phe Ser Ile Ile Gly Thr Tyr Ser Ile Ile Leu
 85 90 95
 Lys Leu Gln Ser Ser Lys Pro Asp Cys Tyr Pro Gln Ser His Phe Pro
 100 105 110
 Lys Pro Glu Leu Ala Pro Phe Ser Trp Ile His Leu Leu Gln
 115 120 125

<210> 8800

<211> 399

<212> PRT

<213> B.fragilis

<400> 8800

Asn Glu Phe Cys Met Lys Val Leu Tyr Val Ile Phe Ile Cys Val Leu
 1 5 10 15
 Tyr Ser Cys Met Gln Asn Val Glu Pro Asp Asn Lys Ile Asn Val Gly
 20 25 30
 Ala Ala Met Asn Ala Leu Gly Lys Ile Thr Ala Gln Thr Ile Ser Ser
 35 40 45
 Asn Val Arg Tyr Val Ala Leu Glu Thr Asn Asp Ser Ser Leu Val Gly
 50 55 60
 Glu Met Pro Asp Met Arg Val Leu Glu His Ala Ile Leu Val Ser Ser
 65 70 75 80
 Val Asn Gln Cys Leu Lys Leu Phe Asp Arg Ser Thr Gly Lys Phe Ile
 85 90 95
 Arg Asp Ile Gly His Val Gly Thr Asp Pro Gln Gly Tyr Ala Lys Asp
 100 105 110
 Ala Trp Gly Lys Val Asn Tyr Trp Val Asp Tyr Asp Gln Asn Ile Ile
 115 120 125
 Tyr Val Leu Gly Trp Gly Asn Asp Leu Ile Leu Tyr Asp Leu Ala Gly
 130 135 140
 Asn Tyr Lys Asp Arg Ile Cys Ile Asp Asp Asn Val Arg Tyr Asn Leu
 145 150 155 160
 Gln Gln Ser Tyr Leu Tyr Val Thr Tyr Gly Lys Leu Trp Gly His Asn
 165 170 175
 Lys Leu Asp Ile Ser Lys Ser Pro Leu Phe Cys Ile Asp Glu Asn Ser
 180 185 190
 Asn His Ile Thr Asp Ile Val Gly Leu Pro Val Asp Leu Leu Pro Met
 195 200 205
 Asp Asp Leu Gln Ser Val Ser Glu Leu Leu Gly Asp Tyr Val Ser Tyr
 210 215 220
 Gly Gly Asp Leu Thr Met Ala Ser Phe Ala Asn Gly Gly Lys Phe Tyr
 225 230 235 240
 Thr Ala Ile Asn Ser Pro Ser Leu Trp Arg Phe Glu Asn Asp Ile Arg
 245 250 255
 Leu Lys Gln Thr Phe Asn Asp Thr Ile Tyr Thr Leu Ser Asp Ser Lys
 260 265 270
 Ile Lys Pro Tyr Leu Ile Phe Glu Leu Gly Asp Trp Ala Trp Gln Tyr
 275 280 285
 Gln Asp Arg Leu Glu Glu Gly Cys Glu Lys Lys Ile Met Ile Asp
 290 295 300
 Tyr Ala Leu Glu Asn Glu Arg Cys Ile Tyr Phe His Phe His Thr Gly
 305 310 315 320

Phe Tyr Thr Lys Asn Arg Gln Ala Phe Cys Gly Leu Tyr Tyr Lys Ala
 325 330 335
 Asp His Arg Val Leu Met Cys Gly Asp Arg Leu Leu Asp Thr Val
 340 345 350
 Asn Arg Gln Ser Leu Arg Val Arg Gly Val Ser Ser Asp Gly Cys Phe
 355 360 365
 Ile Ala Leu Leu Gln Pro Asp Glu Leu Cys Asp Glu Val Lys Lys Lys
 370 375 380
 Thr Gly Ser Lys Glu Glu Asp Asn Pro Ile Val Val Ile Leu Glu
 385 390 395

<210> 8801
 <211> 428
 <212> PRT
 <213> B.fragilis

<400> 8801
 Lys Ile Leu Cys Ile Phe Thr Ser Asn Leu Met Met Asp Lys Ala Met
 1 5 10 15
 Arg Ile Ile Leu Ile Leu Gly Ala Met Ile Leu Gly Phe Thr Ala Cys
 20 25 30
 Ser Asn Lys Lys Thr Val Asn Pro Asn Pro Val Val Arg Asp Asn Ile
 35 40 45
 Ile His Leu Ser Thr Ala Ile Lys Asn Val Arg Glu Glu Met Met Leu
 50 55 60
 Ser Glu Leu Val Asp Ser Val Arg Tyr Ile Pro Leu Glu Thr Asn Pro
 65 70 75 80
 Asn Cys Met Leu Arg Asn Tyr Gln Arg Leu Thr Phe Ser Pro Gln Tyr
 85 90 95
 Ile Phe Tyr Leu Asn Tyr Cys Phe Asp Trp Asn Gly Gln Phe Leu Phe
 100 105 110
 Arg Ile Gly Ser Gln Gly Gln Gly Ala Cys Glu Asp Ile Tyr Ala His
 115 120 125
 Val Ala Glu Ile Val Tyr Leu Asn Asn His Phe Tyr Gly Asn Ala Ser
 130 135 140
 Lys Ile Ile Glu Tyr Asp Asp Arg Gly Lys Cys Thr Gly Lys Glu Leu
 145 150 155 160
 Ser Trp Phe Thr Gln Lys Thr Met Asp Thr Ala Pro Val Gly His Leu
 165 170 175
 Val Asn Gln Val Cys Phe Ala Pro Ala Gly Glu Asn Leu Met Phe Tyr
 180 185 190
 Asn Ser Pro Asp Thr Val Tyr Phe Ile Asn Thr Asp Tyr Glu Phe Val
 195 200 205
 Ala Lys Arg Ser Met Met Pro Trp Asn Arg Lys Gly Ile Ala Pro Ser
 210 215 220
 Met Gly Ser Val Lys Tyr Thr Ser Tyr Tyr Lys Asp Thr Thr Leu Phe
 225 230 235 240
 Tyr Ile Phe Tyr Thr Asp Thr Val Phe Thr Val Thr Pro Thr Ser Leu
 245 250 255
 Val Pro Arg Trp Val Val Glu Leu Asp Glu Glu Leu Arg Phe Pro Thr
 260 265 270
 Gln Tyr Leu Tyr Glu Asp Gly Leu Phe Ser Asp Ala Phe Lys Cys Trp
 275 280 285
 Glu Ser Gly Asn Leu Glu Asn Ala Lys Met Ile Lys Met Leu Asp His
 290 295 300
 Lys Tyr Ile Val Ser Gly Val Phe Glu Thr Glu His Phe Val Phe Leu
 305 310 315 320
 Ser Val Tyr Glu Tyr Met Ala Tyr Trp Glu Leu Arg Lys Leu Pro Lys
 325 330 335

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Pro Pro Leu Leu Thr Ala Ile Tyr Asn Lys Arg Thr Gly Glu Thr Phe
      340      345      350
Ala Val Lys Gln Ile Ile Asp Asp Leu Gly Gly Met Lys Thr Phe Phe
      355      360      365
Pro Ser Trp Gly Ala Tyr Asn Glu Lys Leu Leu Ala Thr Ile Trp Pro
      370      375      380
Tyr Lys Leu Lys Glu Phe Ile Glu Glu Glu Gln Ser Ala Gly Arg Thr
385      390      395      400
Val Ala Pro Gln Ile Leu Asn Leu Met Lys Arg Val Arg Glu Asp Asp
      405      410      415
Asn Pro Ile Leu Ile Ile Ala Asn Leu Lys Thr Lys
      420      425

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<210> 8802

<211> 561

<212> PRT

<213> B.fragilis

<400> 8802

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Asp Thr Met Cys Leu Asn Lys Asn Ile Lys Ser Phe Leu Gly Ile Leu
1      5      10      15
Met Cys Gly Ile Leu Ala Phe Leu Pro Val Ser Cys Ser Asp Asp Ser
      20      25      30
Pro Val Thr Gly Ser Pro Leu Leu Pro Glu Ala Pro Glu Gly Lys Val
      35      40      45
Asn Val Phe Leu Ser Leu His Lys Gly Ser Asp Tyr Glu Ser Pro Ala
      50      55      60
Thr Arg Ser Gly Thr Ala Ala Asp Glu Thr Ile Met Gly Pro Pro Trp
65      70      75      80
Val Leu Val Phe Leu Gly Asn Asp Lys Asp Ala Thr Phe Leu Glu Ala
      85      90      95
Val Gln Ala Asp Met Thr Ser Val Gly Glu Leu Tyr Ala Gln Leu Ser
      100      105      110
Ala Cys Asn Ser Ser Val Val Leu Leu Leu Ile Ser Asn Ala Asp Glu
      115      120      125
Leu Ile Gln Ala Lys Leu Gly Ser Leu Thr Thr Thr Thr Thr Leu Ser
      130      135      140
Asp Ala Val Thr Asn Leu Leu Tyr Gly Asp Pro Ser Asp Ser Pro
145      150      155      160
Val Gly Gly Asn Ser Ala Leu Ala Ile Pro Gln Ala Thr Val Pro Phe
      165      170      175
Thr Gly Lys Lys Ile Pro Met Ser Ala Tyr Cys Pro Leu Pro Gln Ile
      180      185      190
Ile Thr Gly Thr Thr Val Gly Thr Val Gly Thr Pro Leu Arg Leu Lys
      195      200      205
Arg Ile Val Ser Lys Leu Tyr Val Asp Ala Ser Gly Ala His Ala Ser
      210      215      220
Asp Gly Phe Ile Leu Thr Gly Val Ser Val Ile Asn Val Pro Val Gln
225      230      235      240
Gly Ala Leu Ala Phe Glu Tyr Gly Asn Ala Asn Glu Thr Leu Pro Ile
      245      250      255
Thr Ala Gln Phe Thr Asp Tyr Gly His Lys Ser Gly Ser Ala Ser Arg
      260      265      270
Leu Asp Asn Pro Ile Ile Ala Ser Ser Thr Gly Phe Ala Gly His Ile
      275      280      285
Thr Ala Gly Met Gly Ser Glu Asp Tyr Pro Val Tyr Val Tyr Glu Thr
      290      295      300
Ala Gly Gly Pro Ala Asp Arg Ser Asp Val Ile Leu Ala Gly Lys Phe
305      310      315      320

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4887 4888 4889 4890 4891 4892 4893 4894 4895 4896 4897 4898 4899 4900 4901 4902 4903 4904 4905 4906 4907 4908 4909 4910 4911 4912 4913 4914 4915 4916 4917 4918 4919 4920 4921 4922 4923 4924 4925 4926 4927 4928 4929 4930 4931 4932 4933 4934 4935 4936 4937 4938 4939 4940 4941 4942 4943 4944 4945 4946 4947 4948 4949 4950 4951 4952 4953 4954 4955 4956 4957 4958 4959 4960 4961 4962 4963 4964 4965 4966 4967 4968 4969 4970 4971 4972 4973 4974 4975 4976 4977 4978 4979 4980 4981 4982 4983 4984 4985 4986 4987 4988 4989 4990 4991 4992 4993 4994 4995 4996 4997 4998 4999 5000

Asp Asn Gly Pro Val Arg Tyr Tyr Arg Ala Ser Leu Lys Asn Ser Lys
 325 330 335
 Gly Glu Lys Leu Ala Phe Lys Arg Asn Tyr Leu Tyr Thr Leu Asn Leu
 340 345 350
 Val Arg Val Glu Gly Gly Gly Tyr Ser Thr Met Asp Glu Ala Ile Ala
 355 360 365
 Ala Pro Ser Gly Ser Ser Gly Ile Leu Cys Asn Val Thr Val Val Asp
 370 375 380
 Asp Ser His Glu Ile Thr Gly Asn Gly Val Tyr Tyr Leu Gly Leu Thr
 385 390 395 400
 Asn Ser Ser Tyr Val Leu Tyr Thr Asp Glu Glu Gln Lys Asp Val Thr
 405 410 415
 Val Cys Val Ile Gly Thr Asn Ala Tyr Ser Arg Pro Gly Ser Thr Val
 420 425 430
 Thr Pro Gly Val Val Ser Met Ser Ser Gly Ile Ala Gly Val Thr Leu
 435 440 445
 Lys Thr Thr Ser Ile Ser Ala Asp Ser Thr Ala Ile Lys Leu Asp Phe
 450 455 460
 Ala Lys Gly Ala Gln Gly Glu Thr Thr Leu Asp Val Gln Val Gly Gly
 465 470 475 480
 Leu Arg Arg Glu Ile Lys Leu Lys Ala Ala Gly Met Gly Val Ser Gly
 485 490 495
 Asn Tyr Ala Ser Gly Ser Gln Gly Leu Leu Leu Gly Asp Phe Asn Gln
 500 505 510
 Ile Arg Ile Leu Glu Ser Thr Ser Lys Ser Gly Leu Ala Ile Ser Pro
 515 520 525
 Ala Ser Pro Asp Arg Asp Ser Glu Val Ile Ser Ser Val Thr Ser Pro
 530 535 540
 Ser Val Pro Val Tyr Phe Phe Val Glu Glu Ala Ala Gly Pro Thr Lys
 545 550 555 560
 Cys

<210> 8803
 <211> 228
 <212> PRT
 <213> B.fragilis

<400> 8803
 Gln Ile Arg Arg Met Pro Thr Val Thr Lys Asn Leu Ile Ile Ile Asn
 1 5 10 15
 Val Leu Leu Phe Leu Ala Gln Phe Val Ala Gln Ser Tyr Gly Ile Asn
 20 25 30
 Leu Ser Asp Tyr Leu Gly Leu His Phe Phe Leu Ala Asp Asn Phe Asn
 35 40 45
 Pro Ala Gln Leu Phe Thr Tyr Met Phe Met His Gly Gly Phe Thr His
 50 55 60
 Ile Phe Phe Asn Met Phe Ala Val Trp Met Phe Gly Arg Ile Leu Glu
 65 70 75 80
 Gln Val Trp Gly Pro Lys Arg Phe Leu Phe Tyr Tyr Ile Leu Cys Gly
 85 90 95
 Val Gly Ala Gly Leu Leu Gln Glu Gly Val Gln Tyr Ile Gln Tyr Val
 100 105 110
 Thr Glu Leu Ser Gln Tyr Thr Ser Val Asn Ile Gly Thr Gly Ile Ile
 115 120 125
 Pro Met Ser Glu Tyr Leu Asn Met Met Thr Thr Val Gly Ala Ser Gly
 130 135 140
 Ala Val Tyr Ala Ile Leu Leu Ala Phe Gly Met Leu Phe Pro Asn Gln
 145 150 155 160

Gln Leu Phe Ile Phe Pro Leu Pro Phe Pro Ile Lys Ala Lys Phe Phe
 165 170 175
 Val Ile Gly Tyr Ala Leu Ile Glu Leu Tyr Ala Gly Phe Ala Asn Asn
 180 185 190
 Pro Gly Asp Asn Val Ala His Phe Ala His Leu Gly Gly Met Ile Phe
 195 200 205
 Gly Phe Ile Leu Ile Met Tyr Trp Arg Lys Lys Asn Arg Asn Asn Gly
 210 215 220
 Thr Tyr Tyr Asn
 225

<210> 8804

<211> 309

<212> PRT

<213> B.fragilis

<400> 8804

Ser Cys Thr Gly Glu Lys Arg Thr Glu Thr Met Gly His Ile Ile Thr
 1 5 10 15
 Asp Leu Lys Glu Ala Phe Arg Arg Gly Asn Val Tyr Ile Gln Leu Ile
 20 25 30
 Phe Ile Asn Val Gly Val Phe Val Ile Thr Thr Leu Ile Gly Ile Leu
 35 40 45
 Leu Gln Leu Phe Asn Arg Ser Ala Ala Gly Ile Phe Glu Leu Leu Ala
 50 55 60
 Leu Pro Ala Ser Phe Thr Arg Phe Ala Trp Gln Pro Trp Ser Ile Phe
 65 70 75 80
 Thr Tyr Met Phe Met His Ala Gly Phe Leu His Ile Leu Phe Asn Met
 85 90 95
 Leu Trp Leu Tyr Trp Phe Gly Ala Leu Phe Leu Tyr Phe Phe Ser Gly
 100 105 110
 Lys His Leu Arg Gly Leu Tyr Ile Val Gly Gly Ile Cys Gly Gly Leu
 115 120 125
 Leu Tyr Met Ile Ser Tyr Asn Val Phe Pro Tyr Phe Arg Pro Met Thr
 130 135 140
 Ala Tyr Ser Thr Met Val Gly Ala Ser Ala Ser Val Leu Ala Ile Val
 145 150 155 160
 Val Ala Thr Ala Tyr Arg Glu Pro Asn Tyr Pro Val Arg Leu Leu Phe
 165 170 175
 Phe Gly Asn Val Arg Leu Lys Tyr Leu Ala Leu Ile Val Val Leu Thr
 180 185 190
 Asp Leu Leu Phe Ile Thr Ser Ser Asn Ala Gly Gly His Ile Ala His
 195 200 205
 Leu Gly Gly Ala Leu Ala Gly Leu Trp Phe Ala Ala Ser Leu Asn Lys
 210 215 220
 Gly Lys Asp Ile Thr Ser Trp Val Asn Lys Ala Leu Asp Ala Ile Ala
 225 230 235 240
 Ala Leu Phe Ser Ala Lys Thr Trp Lys Arg Lys Pro Lys Met Lys Val
 245 250 255
 His Tyr Gly Asn Asn Thr Arg Gln Asn Asp Tyr Asp Tyr Asn Ala Arg
 260 265 270
 Lys Lys Ala Gln Ser Asp Glu Ile Asp Arg Ile Leu Asp Lys Leu Lys
 275 280 285
 Lys Ser Gly Tyr Glu Ser Leu Thr Thr Glu Glu Lys Lys Ser Leu Phe
 290 295 300
 Asp Ala Ser Lys Arg
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<210> 8805

<211> 77
 <212> PRT
 <213> B.fragilis

<400> 8805

Ala	Asp	Ile	Gly	Ile	Phe	Phe	Pro	Val	Lys	Gly	Thr	Val	Ala	Cys	Gly
1				5					10					15	
Ile	Ala	Asn	Ala	Glu	Leu	Pro	Pro	Thr	Gly	Glu	Ser	Asp	Gly	Ser	Pro
		20						25					30		
Tyr	Arg	Arg	Arg	Leu	Val	Thr	Ala	Ser	Asp	Lys	Val	Val	Val	Val	Val
	35						40					45			
Arg	Leu	Pro	Asn	Phe	Ala	Cys	Ile	Asn	Ser	Ser	Ala	Phe	Glu	Ile	Asn
	50					55					60				
Ser	Lys	Thr	Thr	Glu	Glu	Leu	Gln	Ala	Leu	Asn	Cys	Ala			
65					70					75					

<210> 8806

<211> 489

<212> PRT

<213> B.fragilis

<400> 8806

Lys	Asp	Arg	Gly	Trp	Gly	Pro	Gly	Asn	Lys	Lys	Trp	Arg	Met	Pro	Thr
1				5					10					15	
Leu	Asp	Glu	Leu	Lys	Leu	Leu	Gly	Asp	Gly	Ile	Arg	Glu	Thr	Ile	Ser
		20						25					30		
Ser	Thr	Pro	Asn	Trp	Asn	Ser	Ile	Ser	Ile	Ser	Ser	Asp	Asp	Gly	Ser
	35						40					45			
Phe	Val	Ile	Ser	Asn	Gly	Ile	Arg	Thr	Asn	Asn	Arg	Tyr	Tyr	Leu	Pro
	50					55					60				
Ala	Asn	Arg	Tyr	Gly	Asp	Ser	Gly	Glu	Tyr	Trp	Ser	Ala	Ser	Ala	Ala
65					70					75				80	
Ile	Ser	Gly	Ser	Ala	Arg	Gly	Leu	Cys	Phe	Arg	Tyr	Ser	Ser	Thr	Ser
				85					90					95	
Ile	Lys	Asp	Trp	Thr	Thr	Ala	Leu	Val	Ser	Gly	Ala	Ile	Arg	Cys	Val
		100						105					110		
Val	Asp	Ser	Glu	Asn	Asn	Tyr	Ser	Lys	Val	Tyr	Arg	Val	Val	Tyr	Ser
	115						120					125			
Asn	Thr	Asp	Pro	Leu	Asn	Gln	Glu	Asn	Asn	Leu	Tyr	Ser	Val	Pro	Pro
	130					135					140				
Pro	Ala	Leu	Leu	Asn	Glu	Gly	Glu	Thr	Ile	Thr	Leu	Pro	Ala	Leu	Ser
145					150					155					160
Thr	Lys	Phe	Asn	Asp	Tyr	Glu	Val	Arg	Glu	Gly	Ser	Lys	Val	Val	Thr
			165						170					175	
Lys	Tyr	Phe	His	Ser	Gly	Trp	Leu	Val	Asn	Gly	Arg	His	Phe	Asp	Phe
		180						185					190		
Gly	Asp	Ser	Tyr	Val	Val	Gly	Ala	Asp	Gly	Ile	Gly	Asn	Thr	Glu	Val
	195						200					205			
Glu	Ile	Arg	Pro	Glu	Trp	Thr	Lys	Leu	Cys	Lys	Ile	Glu	Tyr	Val	Ala
	210					215					220				
Thr	Pro	Pro	Tyr	Pro	Gly	Ala	Ile	Phe	Tyr	Trp	Arg	Phe	Pro	Ser	Thr
225					230					235					240
Thr	Ile	Phe	Val	Lys	Ile	Gly	Glu	Lys	His	Ser	Leu	Phe	Tyr	Val	Glu
			245						250					255	
Ser	Ala	Val	Asn	Ser	Ser	Pro	Val	Lys	Met	Cys	Thr	Gly	Leu	Leu	Val
		260						265					270		
Asn	Gly	Ile	Arg	Tyr	Ser	Phe	Gly	Asp	Glu	Ile	Val	Ala	Ser	Thr	Asp
	275						280					285			
Val	Lys	Ile	Glu	Pro	Tyr	Trp	Ala	Asn	Thr	Pro	Glu	Thr	Pro	Phe	Ala

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      290                      295                      300
Ser Thr Asn Leu Glu Leu Ser Asn Pro Gly Ser Thr Asp Ala Thr Phe
305                      310                      315                      320
Ile Phe Ala Pro Thr Gly Ser Lys Gly Ser Lys Cys Ser His Gln Val
      325                      330                      335
Ala Asn Ser Asn Phe Pro Ile Asn Gly Val Thr Ile Pro Ser Leu Leu
      340                      345                      350
Pro Thr Asp Tyr Asp Asn Ala Arg Arg Leu Ile His Ser Val Glu Gly
      355                      360                      365
Leu Lys Arg Gly Val Gly Asp Val Cys Arg Leu Val Gly Ile Pro Leu
      370                      375                      380
Asn Glu Ile Asn Ala Lys Leu Ala Ala Gly Glu Leu Pro Asp Asn Lys
385                      390                      395                      400
Thr Trp Arg Leu Pro Ala Val Tyr Glu Met Ala Ala Leu Leu His Pro
      405                      410                      415
Tyr Gln Asp Ser Ser Glu Gly Arg Phe Tyr Pro Ile Leu Asn Thr Tyr
      420                      425                      430
Phe Pro Tyr His Thr Val Tyr Ile Gly Ile Pro Gly Ile Ala Ala Ser
      435                      440                      445
Tyr Ile Thr Ala Gly Ser Arg Asn Asn Asn Arg Val Val Thr Val Thr
      450                      455                      460
Ile Ser Gln Gly Asp Gly Gly Ile Thr Gly Gly Met Phe Ser Ala Thr
465                      470                      475                      480
Ser Asp Tyr Ala Arg Cys Ile Arg Gln
      485

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<210> 8807

<211> 189

<212> PRT

<213> B.fragilis

<400> 8807

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Asn Cys Phe Phe Phe Val Ile Phe Ala Cys Thr Lys Thr Asn Arg Met
1                      5                      10                      15
Met Glu His Pro Leu Asn Gln Phe Lys Tyr Cys Pro Lys Cys Gly Ser
      20                      25                      30
Ala Ala Phe Glu Ile His Asn Glu Lys Ser Lys Gln Cys Thr Asp Cys
      35                      40                      45
Gly Phe Val Tyr Tyr Phe Asn Pro Ser Ser Ala Thr Val Ala Leu Ile
      50                      55                      60
Leu Asn Glu Lys Asp Glu Leu Leu Val Cys Arg Arg Ala Lys Glu Pro
      65                      70                      75                      80
Ala Lys Gly Thr Leu Asp Leu Pro Gly Gly Phe Ile Asp Met Asn Glu
      85                      90                      95
Thr Gly Glu Glu Gly Val Ser Arg Glu Val Glu Glu Glu Thr Gly Leu
      100                      105                      110
Lys Val Lys Lys Ala Thr Tyr Leu Phe Ser Leu Pro Asn Ile Tyr Ile
      115                      120                      125
Tyr Ser Gly Phe Pro Val His Thr Leu Asp Met Phe Phe Leu Cys Gln
      130                      135                      140
Val Glu Asp Thr Ser His Phe Glu Ala Met Asp Asp Val Ala Asp Ser
      145                      150                      155                      160
Phe Phe Val Pro Leu Cys Gln Ile Asn Pro Glu Glu Phe Gly Leu Gly
      165                      170                      175
Ser Ile Lys Lys Gly Leu Lys Arg Phe Leu Lys Glu Arg
      180                      185

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<210> 8808

<211> 207

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (199), (200), (201), (202), (205)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 8808

Ile	Met	Asn	Ile	Asp	Ile	Lys	Glu	Ala	His	Arg	Arg	Met	Leu	Tyr	Leu
1				5					10					15	
Leu	Gln	Ser	Phe	Asp	Thr	Val	Cys	Lys	Lys	His	Asp	Ile	Asp	Tyr	Trp
			20					25					30		
Leu	Asp	Tyr	Gly	Thr	Leu	Leu	Gly	Ala	Ile	Arg	His	Gln	Gly	Phe	Ile
			35				40					45			
Pro	Trp	Asp	Thr	Asp	Thr	Asp	Val	Gly	Met	Leu	Arg	Ser	Asp	Tyr	Ala
	50					55					60				
Leu	Phe	Leu	Glu	Lys	Gly	Val	Ser	Glu	Leu	Pro	Gln	Asp	Ile	Phe	Phe
65					70					75				80	
Gln	Thr	Pro	Glu	Thr	Glu	Pro	Ala	Met	Ala	Pro	Trp	Ser	Trp	Leu	Val
				85					90					95	
Glu	Ala	Arg	Leu	Arg	Asp	Arg	His	Ser	Arg	Tyr	Val	Pro	Asp	Lys	Lys
			100					105					110		
Thr	Pro	Ala	Glu	Pro	Met	Gln	Phe	Gly	Gly	Leu	Gln	Leu	Asp	Leu	Phe
			115				120					125			
Ile	Tyr	Asp	Trp	Asp	Gly	Lys	Tyr	Glu	Asn	Ala	Leu	Ser	Asn	Ser	Phe
	130					135					140				
Glu	Arg	Asn	Leu	Ser	Glu	Ser	Arg	Ile	His	Leu	Arg	Leu	Asp	Glu	Val
145					150					155				160	
Glu	Tyr	Leu	Asp	Thr	Ala	Arg	Phe	Glu	Gly	Val	Glu	Phe	Pro	Val	Pro
				165					170					175	
Ser	Gly	Tyr	Asp	Ala	Tyr	Leu	Thr	Arg	Trp	Ser	Ser	Pro	Arg	Gly	Trp
			180					185					190		
Arg	Glu	Ala	Arg	Arg	Gly	Xaa	Xaa	Xaa	Xaa	Tyr	Gly	Xaa	Ser	Pro	
			195				200						205		

<210> 8809

<211> 77

<212> PRT

<213> B.fragilis

<400> 8809

Phe	Thr	Val	Phe	Ala	Asp	Asn	Ala	Ala	Gly	Ala	Ile	Phe	Val	Asp	Lys
1				5					10					15	
Phe	Phe	Leu	Glu	Thr	Ala	Asp	Gly	Ala	Tyr	Phe	Thr	Val	Asp	Pro	Ile
			20				25					30			
Ala	Lys	Ala	Arg	Ile	Arg	Leu	Lys	Lys	Thr	Val	Leu	Phe	Leu	Trp	Ile
			35				40					45			
Ala	Glu	Arg	Ala	Ile	Ile	Ile	Arg	Asn	Gly	Gln	Ala	Ile	Arg	His	Ile
	50					55					60				
Phe	Leu	Ile	Tyr	His	Ile	Val	Gly	Phe	Val	Ile	Asp	Val			
65					70					75					

<210> 8810

<211> 99

<212> PRT

<213> B.fragilis

<400> 8810

His Ile Leu Ile Asn His Leu Arg Ile Met Asn Lys Ala Glu Leu Ile
 1 5 10 15
 Asn Ala Met Ala Glu Ser Gly Leu Ser Lys Val Asp Ser Lys Lys
 20 25 30
 Ala Leu Glu Ala Phe Phe Ser Ser Val Thr Lys Ala Leu Ser Ala Gly
 35 40 45
 Asp Lys Ile Ser Leu Val Gly Phe Gly Thr Phe Ser Val Ala Glu Arg
 50 55 60
 Ser Ala Arg Met Gly Ile Asn Pro Ser Thr Lys Lys Ala Ile Glu Ile
 65 70 75 80
 Pro Ala Lys Lys Val Ala Lys Phe Lys Pro Gly Ala Glu Leu Thr Asp
 85 90 95
 Ala Ile Lys

<210> 8811

<211> 426

<212> PRT

<213> B.fragilis

<400> 8811

Met Lys Gln Ile Phe Leu Phe Leu Phe Ile Phe Leu Leu Thr Ser Cys
 1 5 10 15
 Ile Ser Gly Gly Ala Lys Gln Asp Gln Ile Lys Val Ile Asp Arg Thr
 20 25 30
 Ile Arg Ile Gly Asp Ala Met Glu His Pro Val Pro Met Lys Leu Ser
 35 40 45
 Ala Phe Val Asp Ser Ile Thr Tyr Ile Pro Leu Glu Thr Thr Lys Ser
 50 55 60
 Tyr Val Lys Asp Lys Met Leu Ile Ser Tyr Val Glu Pro Tyr Trp Val
 65 70 75 80
 Val Tyr Pro Gly Ser Leu Phe Asp Lys Glu Gly Arg Phe Val Thr Asn
 85 90 95
 Ile Gly Ala Leu Gly Gln Gly Arg Gly Glu Glu Thr Asn Gly Trp Gly
 100 105 110
 Tyr Ser Val Phe Tyr Asp Leu Gln Arg Asn Val Phe Tyr Thr Leu Gly
 115 120 125
 Asp Lys Ile Ile Glu Phe Asp Ser Asn Arg Lys Phe Thr Gly Lys Glu
 130 135 140
 Val Arg Ile Ser Tyr Arg Glu Arg Asn Ala Met Gln Val Ala Gly Gly
 145 150 155 160
 Leu Lys Asn Val Val Ala Leu Leu Lys Ala Asp Thr Lys Tyr Leu Leu
 165 170 175
 Val Asn Tyr Pro Asp Ser Ile Phe Trp Met Asp Ser Asp Leu Glu Val
 180 185 190
 Thr His Asn Thr Arg Ile Ile Pro Asp Ser Leu Phe Leu Asp Pro Pro
 195 200 205
 Gly Asp Ala Asn Gly Met Ser Tyr Thr Phe Ser Arg Tyr Lys Asp Thr
 210 215 220
 Thr Ile Phe Tyr Asn Cys Phe Thr Asp Ala Ile Tyr Ala Val Thr Asp
 225 230 235 240
 Thr Gly Leu Gln Lys Arg Trp Asp Leu Asp Leu Lys Gly Leu Lys Pro
 245 250 255
 Asp Asn Arg Cys Phe Leu Asn Glu Leu Asn Arg Leu Tyr Leu Gln Glu
 260 265 270
 Met Val Lys Ile Val Arg Ser Ser Gly Asn Glu Asn Val Val Lys
 275 280 285
 Ser Lys Ala Glu Asn Ser Glu Leu Ala Gln Leu Ile Asp Asp Lys Lys
 290 295 300

Trp Val Asn His Ala Tyr Glu Ser Glu Arg Tyr Val Leu Met Ser Trp
 305 310 315 320
 Val Asn Leu Lys Ala Phe Ser Gly Trp Arg Gly Leu Lys Glu Glu Ser
 325 330 335
 His Leu Ala Phe Tyr Asp Lys Arg Ser Gly Lys Thr Ile Ala Val Ala
 340 345 350
 Gly Asp Gly Leu Ile Asp Asp Ile Asp Gly Gly Met Met Phe Tyr Pro
 355 360 365
 Ser Leu Gly Val Cys Asp Gly Ala Met Val Tyr Ser Val Trp Pro Phe
 370 375 380
 Glu Leu Lys Glu Tyr Ile Gln Glu Lys Lys Ala Lys Gly Glu Ala Val
 385 390 395 400
 Ser Asp Arg Leu Ile Ala Leu Ala Asp Ser Leu Asp Asp Glu Gln Asn
 405 410 415
 Pro Ile Leu Val Ile Ala His Leu Lys Lys
 420 425

<210> 8812

<211> 100

<212> PRT

<213> B.fragilis

<400> 8812

Phe His Phe Val Lys Phe Thr Ile Cys Pro Val Ser Ser Val Cys Asn
 1 5 10 15
 Arg Ile Asn Ser Asp Glu Asp Ser Cys Ser Ala Lys Asn Ala Leu His
 20 25 30
 Leu Ala Ser Val Phe Val Tyr Ile Val Ala Val Leu Leu Ile Gly Gly
 35 40 45
 Cys Leu Asp Met Ile Phe Leu Asp Pro Ser Val Tyr Leu Ser Pro Val
 50 55 60
 Leu Ala Val Cys Phe Leu Ser Ser Ile Gly Ala Phe Ser Phe Ser Val
 65 70 75 80
 Cys Asn Gln Pro Leu Ser Ser Pro Ile Gly Ser Leu Ile Tyr Pro Pro
 85 90 95
 Phe Leu Val Ser
 100

<210> 8813

<211> 107

<212> PRT

<213> B.fragilis

<400> 8813

Leu Ile Ser Val Ala Tyr Lys Ala Ala Asn Ile Val Phe Phe Ser His
 1 5 10 15
 Ser Glu Val Ile Arg Arg Gln Ile Phe Glu Cys Glu Gly Asp Phe Trp
 20 25 30
 Asp Ala Ser Thr Asp Ile Gly Gly Ser Ile Val Cys Leu Phe Gly Asn
 35 40 45
 Met Ser Asn Glu Thr Ser Gln Phe Ser Phe Phe Arg Leu Ser Gly Gln
 50 55 60
 Ala Gly Pro Glu Lys Arg Leu Tyr Phe Val Ser Arg Phe Ile Val Leu
 65 70 75 80
 Phe Cys Pro Ala Phe Ile Phe Arg Gln Lys Glu Ser Asp Leu Glu Val
 85 90 95
 Asn Ile Pro Gly Ala Leu Gln Gly Gly Glu Phe
 100 105

<210> 8814
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 8814
 Ser Arg Arg Val Arg Val Gly Leu Tyr Gln Lys Arg Val Lys Lys Ile
 1 5 10 15
 Pro Glu Arg Glu Val Lys Tyr Ile Lys Thr Ser Thr Phe Val Lys Thr
 20 25 30
 Leu Asn Tyr Glu Lys Lys Asp Ile Thr Ile Asp Met Cys Arg Gly Met
 35 40 45
 Leu Cys Ala Cys Arg Leu Ala Gly Thr Asn Gln Arg Glu Asn Asn Val
 50 55 60
 Ser Arg Lys Ser Val
 65

<210> 8815
 <211> 1022
 <212> PRT
 <213> B.fragilis

<400> 8815
 Lys Leu Pro Val Trp Val Phe Pro Ala Ile Met Leu Gln Val Leu Lys
 1 5 10 15
 Asp Ser Cys Trp Glu Ile Ser Thr Arg Ser Val Phe Leu Lys Val Arg
 20 25 30
 Leu Ser Leu Asp Trp Gln Tyr Leu Pro His Leu Arg Thr Gly Ile Ala
 35 40 45
 Arg Ser Ser Leu Pro Leu Leu Leu Leu Leu Ser Leu Phe Thr Ser Leu
 50 55 60
 Ser Arg Arg Leu Arg Ala Pro Gln Ser Ala Lys Leu Ser Gly Leu Ala
 65 70 75 80
 Gly Glu Ser Val Val Val Ile Glu Asn Arg Val Tyr Asn Asp Leu Pro
 85 90 95
 Ala Ala Ser Asn Ile Tyr Trp Asp Ala Ala Gln Gly Arg Leu Thr Phe
 100 105 110
 Asp Asp Val Pro Ser Tyr Val Pro Ala Ala Arg Asn Gln Lys Gln Gly
 115 120 125
 Val Tyr Phe Leu Tyr Gly Ser Leu Ile Ala Leu Gln Gly Gly Ser Ser
 130 135 140
 Ala Thr Asp Val Cys Gln Leu Asp Ala Ala Glu Val Asn Pro Val Trp
 145 150 155 160
 Lys Thr Asn Gln Ser Pro Asn Ile Pro Lys Phe Asn Pro Ala Ser Leu
 165 170 175
 Ala Pro Gly Ala Asp Leu Glu Asn Val Leu Thr His Ile His Asn Pro
 180 185 190
 Gly Asn Arg Ile Gly Asp Ile Cys Arg Tyr Leu Thr Gln Arg Gly Trp
 195 200 205
 Ala Pro Pro Gly Lys Lys Trp Lys Met Pro Val Lys Glu Arg Leu Glu
 210 215 220
 Ala Val Leu Asn Ser Ile Tyr Arg Thr Glu Gly Ser Trp Leu Pro Ile
 225 230 235 240
 Gly Gly Leu Ala Thr Asp Gly Thr Gly Glu Val Val His Gly Arg Leu
 245 250 255
 Ile Lys Asp Arg Phe Tyr Phe Pro Ala Ser Gly Ser Arg Lys Glu Asp
 260 265 270
 Gly Thr Phe Ile Glu Gln Pro Gly Val Ser Gly His Tyr Trp Ser Ser
 275 280 285

4895 4896 4897 4898 4899 4900 4901 4902 4903 4904 4905 4906 4907 4908 4909 4910 4911 4912 4913 4914 4915 4916 4917 4918 4919 4920 4921 4922 4923 4924 4925 4926 4927 4928 4929 4930 4931 4932 4933 4934 4935 4936 4937 4938 4939 4940 4941 4942 4943 4944 4945 4946 4947 4948 4949 4950 4951 4952 4953 4954 4955 4956 4957 4958 4959 4960 4961 4962 4963 4964 4965 4966 4967 4968 4969 4970 4971 4972 4973 4974 4975 4976 4977 4978 4979 4980 4981 4982 4983 4984 4985 4986 4987 4988 4989 4990 4991 4992 4993 4994 4995 4996 4997 4998 4999 5000

755	760	765
Asn Glu Asp Phe Phe Phe Thr Gly Trp Met Ile Asn Gly Gln Phe Tyr		
770	775	780
Gly Leu Gly Ser Ser Tyr Thr Pro Leu Pro Gly Gln Asp Thr Asp Val		
785	790	795
Tyr Ala Val Trp Lys Tyr Ala Gln Ala Met Glu Phe Asn Val Thr Val		
805	810	815
Ser Asn Ser Gly Arg Gly Thr Asp Asn Ala Thr Leu Val Phe Thr Asp		
820	825	830
Ser Lys Glu Glu Thr Gly Ala Phe Phe Gln Ser Arg Gly Val Val Ala		
835	840	845
Trp Ser Asn Thr Gly Ser Pro Val Thr Trp Phe Asp Pro Val Ser Thr		
850	855	860
Gly Arg Thr Trp Ser Ser Asn Trp Met Ala Phe Ala Ser Glu Glu Leu		
865	870	875
His Thr Tyr Ala Asn Leu Arg Asn Gly Gly Gly Asp Pro Cys Arg Leu		
885	890	895
Ile Gly Tyr Ser Gln Lys Tyr Val Ser Thr Gln Ile Ser Lys Gly Glu		
900	905	910
Leu Pro Asp Asn Arg Thr Trp Arg Leu Pro Lys Gly Arg Glu Tyr Met		
915	920	925
Gln Tyr Gly Phe Thr Pro Glu Asn Thr Val Gly Ser Trp Ala Asn Gly		
930	935	940
Trp Thr Phe Asn Asn Gly Lys Phe Leu Pro Ala Ser Gly Met Arg Ser		
945	950	955
Val Ala Asp Gly Gln Leu Arg Glu Ser Gly Val Gly Tyr Tyr Trp Leu		
965	970	975
Ser Asp His Phe Ala Ile Ile Asp His Phe Gly Lys Gln Tyr Met Gly		
980	985	990
Arg Gly Ser Lys Val Ser Ser Asp Lys Val Ile Glu Glu Gly Val Val		
995	1000	1005
Tyr His Ser Ala Ala Gly Phe Gln Ile Arg Cys Val Arg Gln		
1010	1015	1020

<210> 8816

<211> 233

<212> PRT

<213> B.fragilis

<400> 8816

Lys Arg Leu Ser Glu Asn Asn Asn Leu Ser Leu Pro Ile Leu Asn Met	
1	5
Lys Ile Asn Tyr Thr Tyr Met Met Arg Tyr Ser Val Ile Ile Pro Val	
20	25
Tyr Asn Arg Pro Asp Glu Val Asp Glu Leu Leu Gln Ser Leu Thr Ala	
35	40
Gln His Phe Lys Asp Phe Glu Val Val Val Val Glu Asp Gly Ser Ser	
50	55
Val Pro Cys Glu Lys Ile Val Asn Gln Tyr Gln Gly Lys Leu Asp Ile	
65	70
His Tyr Tyr Asn Lys Pro Asn Ser Gly Pro Gly Gln Thr Arg Asn Tyr	
85	90
Gly Ala Glu Arg Ser Asn Gly Glu Tyr Leu Ile Ile Leu Asp Ser Asp	
100	105
Cys Ile Leu Pro Glu Gly Tyr Leu Asp Ala Val Glu Lys Glu Leu Gln	
115	120
Thr Ala Pro Ala Asp Ala Phe Gly Gly Pro Asp Arg Ala His Ser Ser	
130	135
Phe Thr Asp Ile Gln Lys Ala Ile Asn Tyr Ser Met Thr Ser Phe Phe	
	140

145					150					155				160
Thr	Thr	Gly	Gly	Ile	Arg	Gly	Gly	Lys	Lys	Met	Asp	Lys	Phe	Tyr
				165					170				175	
Pro	Arg	Ser	Phe	Asn	Met	Gly	Val	Pro	Pro	Gly	Gly	Leu	Ser	Gly
			180					185				190		Ile
Arg	Thr	Phe	Leu	Gln	Tyr	Ala	Phe	Arg	Arg	Thr	His	Arg	Phe	Gln
		195				200					205			Tyr
Pro	His	Ile	Gln	Gly	Arg	Ile	Pro	Met	Pro	Ser	Leu	Ser	Arg	Cys
	210					215					220			Leu
Gly	Val	Pro	Gln	Thr	Thr	Tyr	Gly	Phe						
225					230									

<210> 8817

<211> 254

<212> PRT

<213> B.fragilis

<400> 8817

Pro	Val	Leu	Ser	Leu	Gly	Asn	Ala	Glu	Met	Glu	Arg	Leu	Arg	Met	Thr
1			5						10					15	
Thr	Lys	Thr	Gly	Gln	Ala	Glu	Trp	Arg	Ala	Leu	Asp	Glu	Asn	Gln	Lys
			20					25					30		
Met	Arg	Glu	Leu	Pro	Leu	Ala	Ile	Glu	Leu	Gln	Asp	Phe	Thr	Ile	Asp
		35				40						45			
Glu	Tyr	Pro	Pro	Lys	Leu	Met	Leu	Ile	Asn	Asn	Glu	Thr	Gly	Glu	Ala
	50					55					60				
Leu	Pro	Ser	Lys	Lys	Pro	Glu	Asn	Leu	Leu	Ile	Glu	Asp	Asn	Phe	His
65					70					75					80
Thr	Gly	Arg	Leu	Leu	Asp	Trp	Glu	Ile	Gly	Ile	Glu	Lys	Lys	Ile	Pro
				85					90					95	
Leu	Ala	Ala	Ser	Val	Ala	Thr	Gln	Asp	Thr	Leu	Asn	Phe	Val	Glu	Phe
			100					105					110		
His	Ser	Met	Gly	Ala	Thr	Tyr	Ala	Val	Tyr	Leu	Lys	Ala	Val	Asn	Asn
		115					120					125			
Lys	Thr	Gly	Gln	Gln	Arg	Glu	Gly	Trp	Val	Ser	Cys	Gly	Ser	Phe	Met
	130					135					140				
Phe	Pro	Tyr	Lys	Ala	Ile	Arg	Leu	Asp	Asp	Gln	Thr	Ser	Leu	Val	Met
145					150					155					160
Pro	Glu	Arg	Glu	Pro	Arg	Arg	Phe	Ala	Ser	Glu	Val	Lys	Val	Tyr	Thr
				165					170					175	
Glu	Ser	Gly	Cys	Arg	Asp	Ser	Ala	Thr	Ile	Glu	Val	Asn	Lys	Pro	Phe
			180					185					190		
Glu	Leu	Glu	Gly	Trp	Lys	Ile	Tyr	Gln	Leu	Ser	Tyr	Asp	Glu	Ser	Lys
	195						200					205			
Gly	Arg	Trp	Ser	Asp	Ile	Ser	Val	Phe	Glu	Leu	Val	Arg	Asp	Pro	Trp
	210					215						220			
Leu	Pro	Val	Val	Tyr	Thr	Gly	Ile	Trp	Met	Met	Ile	Ala	Gly	Ala	Val
225					230					235					240
Cys	Leu	Phe	Ala	Leu	Ser	Gln	Lys	Arg	Lys	Glu	Asp	Asn	Thr		
				245					250						

<210> 8818

<211> 94

<212> PRT

<213> B.fragilis

<400> 8818

Lys	Ser	Val	Ser	Lys	Pro	Ser	Leu	Leu	Val	Phe	His	Leu	Ala	Pro	Asp
1				5					10					15	

Thr Val Ile Lys Leu Glu Pro Val Leu Lys Gln Lys Glu Ala Lys Glu
 20 25 30
 Ser Ser Phe Thr Ser Ser Tyr Ser Phe Ala Met Ala Asn Thr Tyr Ala
 35 40 45
 Phe Thr Pro Leu Tyr Ser Ser Glu Thr Val Ser Phe Leu Arg Pro Leu
 50 55 60
 Ala Arg Arg Ala Ala Asn Thr Leu Arg Pro Leu Ala Val Ala Ile Leu
 65 70 75 80
 Ser Arg Lys Pro Cys Leu Phe Phe Leu Phe Leu Leu Glu Gly
 85 90

<210> 8819

<211> 627

<212> PRT

<213> B.fragilis

<400> 8819

Gln Ile Lys Ser Ser Ser Met Asn Arg Arg Leu Ser Ile Phe Val Ile
 1 5 10 15
 Ile Leu Phe Phe Leu Leu Pro Val Ala Arg Ala Gln Val Thr Gly
 20 25 30
 Ser Phe Arg Phe Ala Gln Leu Thr Asp Ile His Leu Asn Pro Asn Asn
 35 40 45
 Pro Lys Pro Thr Glu Asp Leu Lys Arg Ser Val Glu Gln Ile Asn Ala
 50 55 60
 Thr Pro Gly Val Asp Phe Val Leu Val Thr Gly Asp Leu Thr Glu Glu
 65 70 75 80
 Gly Asp Arg Thr Thr Met Leu Val Val Lys Ser Ile Leu Asp Arg Leu
 85 90 95
 Lys Val Lys Tyr Tyr Val Ile Pro Gly Asn His Glu Thr Lys Trp Ser
 100 105 110
 Asp Ser Gly Cys Thr Ala Phe Ser Glu Ile Phe Gly Gly Glu Arg Phe
 115 120 125
 Lys Phe Glu His Lys Gly Phe Leu Phe Leu Gly Phe Asn Ser Gly Pro
 130 135 140
 Leu Met Arg Met Ala Tyr Gly His Val Val Pro Gln Asp Ile Thr Trp
 145 150 155 160
 Met Lys Gln Glu Met Asp Lys Val Gly Lys Asp Lys Pro Val Ile Leu
 165 170 175
 Val Thr His Tyr Pro Met Gln Asp Gly Asp Val Asp Asn Trp Tyr Asp
 180 185 190
 Val Thr Asp Ala Val Arg Pro Tyr Asn Ile Arg Thr Phe Ile Gly Gly
 195 200 205
 His Tyr His Arg Asn Arg Phe Leu Ser Tyr Asp Gly Ile Pro Gly Ile
 210 215 220
 Leu Thr Arg Ser Asn Leu Arg Asp Lys Asn Gly Ser Ser Gly Tyr Ser
 225 230 235 240
 Ile Phe Asp Ile Thr Pro Asp Ser Ile Ile Thr Tyr Glu Gln Arg Ile
 245 250 255
 Asp Glu Pro Met Lys Arg Trp Thr Ala Leu Ser Leu Thr Lys Ser Tyr
 260 265 270
 Tyr Asn Arg Thr Gly Lys Ala Val Lys Tyr Pro Ser Phe Ser Val Asn
 275 280 285
 Lys Glu Tyr Pro Gln Val Lys Ile Gly Trp Gln Val Gln Thr Gly Val
 290 295 300
 Gly Ile Tyr Cys Ser Pro Ala Leu Trp Lys Gly Arg Val Tyr Val Gly
 305 310 315 320
 Asp Asp Leu Gly Phe Leu Thr Cys Tyr Thr Leu Lys Glu Gly Arg Lys
 325 330 335

Leu Trp Ser Phe Gln Ser Gly Lys Arg Ile Val Gly Thr Pro Ala Ala
 340 345 350
 Thr Asp Gly Ile Val Val Phe Gly Ser Ala Asp His Asn Ile Tyr Gly
 355 360 365
 Leu Asp Ala Val Thr Gly Lys Glu Arg Trp Arg Val Thr Val Ala Gln
 370 375 380
 Pro Val Leu Gly Ala Val Thr Ile Glu Lys Gly Ile Ala Tyr Ile Gly
 385 390 395 400
 Gly Ser Asp Ser Thr Phe Arg Ala Ile Arg Ile Lys Asn Gly Lys Val
 405 410 415
 Val Trp Thr Tyr Thr Gly Ile Lys Gly Tyr Ile Glu Thr Lys Pro Leu
 420 425 430
 Val Glu Gly Asp Lys Val Ile Phe Gly Ala Trp Asp Asn Thr Leu Tyr
 435 440 445
 Ala Leu Asn Lys Ser Asn Gly Lys Glu Leu Trp Lys Trp Thr Gly Gly
 450 455 460
 Leu Thr Arg Met His Phe Ser Pro Ala Ala Val Trp Pro Val Ala Ala
 465 470 475 480
 His Gly Lys Val Phe Ile Thr Asp Pro Gln Arg Ala Met Thr Ala Ile
 485 490 495
 Ser Leu Lys Thr Gly Lys Thr Val Trp Arg Thr Phe Gln Ser Met Val
 500 505 510
 Arg Glu Thr Ile Gly Leu Ser Ala Asn Lys Asn Gln Ile Tyr Ser Lys
 515 520 525
 Thr Met Asn Asp Ser Val Val Cys Tyr Ser Thr Ile Ser Asp Thr Pro
 530 535 540
 Lys Glu Ile Trp Ala Ser Asn Val Gly Phe Gly Tyr Glu His Ala Pro
 545 550 555 560
 Ser Met Gln Met Glu Lys Asp Gly Ile Val Phe Ser Ser Thr Lys Glu
 565 570 575
 Gly Leu Ile Phe Ala Leu Asp Ala Ser Thr Gly Gln Val Leu Trp Lys
 580 585 590
 His Lys Ile Gly Asn Ser Leu Ile Asn Thr Val Leu Pro Ile Ser Arg
 595 600 605
 His Gln Val Leu Phe Thr Ala Thr Ser Gly Glu Thr Gly Leu Leu Glu
 610 615 620
 Trp Lys Glu
 625

<210> 8820

<211> 307

<212> PRT

<213> B.fragilis

<400> 8820

Lys Asn Phe Pro Ile Lys Thr Asn Gln Ile Thr Lys Asn Ile Ile Tyr
 1 5 10 15
 Leu Tyr Pro Asn Gln Lys Gly Cys Glu Met Lys Leu Ile Ala Glu Ser
 20 25 30
 Gly Ser Thr Arg Thr Glu Trp Ala Leu Val Glu Asp Asn His Leu Val
 35 40 45
 Gln Arg Val Phe Thr Glu Gly Leu Asn Pro Phe Phe Gln Thr Arg Arg
 50 55 60
 Glu Ile Ser Arg Ser Val Arg Leu Gly Leu Pro Glu Ser Phe Phe Lys
 65 70 75 80
 Lys Lys Leu Asp Gln Val Tyr Tyr Tyr Gly Ala Gly Cys Ser Ser Tyr
 85 90 95
 Glu Lys Lys Asn Ile Leu Gly Ala Ser Leu Val Ala Gln Phe Lys Thr
 100 105 110

Pro Ile Gln Val Glu Ser Asp Leu Leu Ala Ala Ala Arg Gly Leu Phe
 115 120 125
 Lys Cys Glu Ala Gly Ile Ala Cys Ile Leu Gly Thr Gly Ser Asn Ser
 130 135 140
 Cys Phe Tyr Asp Gly Lys Ile Ile Val Lys Asn Val Lys Ala Ala Gly
 145 150 155 160
 Tyr Ile Leu Gly Asp Glu Gly Ser Gly Ala Val Leu Gly Lys Leu Phe
 165 170 175
 Leu Ala Asp Leu Leu Lys Gly Leu Ala Pro Lys Glu Leu Ala Asn Glu
 180 185 190
 Phe His Glu Lys Phe Arg Ile Ser Val Asn Asp Val Met Glu Ser Val
 195 200 205
 Tyr Asn Leu Pro Phe Pro Asn Arg Phe Leu Gly Thr Ile Ala Tyr Phe
 210 215 220
 Leu Gly Asp Tyr Met Asp Asn Glu Tyr Val Tyr Asn Leu Leu Thr Asn
 225 230 235 240
 Asn Leu Arg Ser Phe Phe Asn Arg Asn Val Cys Gln Tyr Asp Tyr Ile
 245 250 255
 Asn Tyr Pro Ile Arg Phe Val Gly Ser Leu Ala Tyr Ala Tyr Pro Asp
 260 265 270
 Ile Leu Gln Glu Val Ala Gln Glu Phe Gly Val Glu Ile Asp Val Ile
 275 280 285
 Glu Glu Thr Pro Met Asn Gly Leu Ile Glu Phe His Ser Met Asn Ile
 290 295 300
 Glu Glu Ser
 305

<210> 8821

<211> 258

<212> PRT

<213> B.fragilis

<400> 8821

Tyr Phe Ser Pro Val Phe Phe Glu Phe Gly Ile Lys Asp Phe Ile Asp
 1 5 10 15
 Ile Leu Leu Val Ala Phe Leu Leu Tyr Tyr Thr Tyr Lys Leu Met Lys
 20 25 30
 Ala Ser Gly Ser Ile Asn Val Phe Thr Gly Ile Leu Val Phe Ile Leu
 35 40 45
 Ile Trp Leu Val Val Ser Gln Val Leu Glu Met Lys Leu Leu Gly Ser
 50 55 60
 Ile Phe Asp Lys Leu Val Ser Val Gly Val Leu Ala Leu Ile Val Leu
 65 70 75 80
 Phe Gln Asp Glu Ile Arg Arg Phe Leu Leu Thr Leu Gly Ser His Gln
 85 90 95
 His Ala Ser Ala Leu Val Arg Phe Leu Thr Gly Asn Lys Lys Glu Lys
 100 105 110
 Leu Gln His Asp Asp Ile Met Pro Ile Val Met Ala Cys Ile Ser Met
 115 120 125
 Gly Lys Gln Lys Val Gly Ala Leu Ile Val Met Glu Arg Asn Val Pro
 130 135 140
 Leu Asp Asp Val Ile Arg Thr Gly Glu Ile Ile Asp Ala Asn Ile Asn
 145 150 155 160
 Gln Arg Leu Ile Glu Asn Ile Phe Phe Lys Asn Ser Pro Leu His Asp
 165 170 175
 Gly Ala Met Val Ile Ser Lys Lys Arg Ile Lys Ala Ala Gly Cys Ile
 180 185 190
 Leu Pro Val Ser His Asn Leu Asp Ile Pro Lys Glu Leu Gly Leu Arg
 195 200 205

His Arg Ala Ala Met Gly Ile Ser Gln Val Ser Asp Ala Leu Ala Ile
 210 215 220
 Ile Val Ser Glu Glu Thr Gly Ala Ile Ser Val Ala Trp Arg Gly Gln
 225 230 235 240
 Phe Tyr Leu Arg Gln Ser Ala Glu Glu Leu Glu Ser Leu Leu Thr Lys
 245 250 255
 Glu Ser

<210> 8822
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 8822
 Ser Ile Ser Phe Thr Phe Ser Leu Phe Phe Cys Ser Ser Pro Leu Leu
 1 5 10 15
 Asn Lys Asn Leu Arg Ala Leu Leu Val Ala Thr Leu Thr Leu Phe Phe
 20 25 30
 Ile Thr Leu Gln Arg Phe Gln Lys Ser Ile Gly Asn Ser Met Ile Arg
 35 40 45
 Gln Cys Ala Ile Leu Phe Gly Cys Leu Ala Leu Gly Glu Leu Ile Val
 50 55 60
 Tyr Leu Thr Gly Ile Lys Leu Pro Ser Ser Ile Ile Gly Met Leu Leu
 65 70 75 80
 Leu Thr Leu Phe Leu Lys Leu Gly Trp Ile Lys Leu His Trp Val Gln
 85 90 95
 Gly Met Ser Asp Phe Leu Val Ala Asn Leu Gly Phe Phe Phe Ile Pro
 100 105 110
 Pro Gly Val Ala Leu Met Leu Tyr Phe Asp Ile Ile Ala Ala Gln Phe
 115 120 125
 Trp Pro Ile Val Ile Ala Thr Leu Val Ser Thr Leu Leu Val Leu Val
 130 135 140
 Ile Thr Gly Trp Val His Gln Leu Thr Arg Lys Leu Lys
 145 150 155

<210> 8823
 <211> 633
 <212> PRT
 <213> B.fragilis

<400> 8823
 Pro Thr Ile Pro Leu Ser Met Glu Asn Lys Ile Asn Phe Ser Pro Pro
 1 5 10 15
 Ser Thr Arg Glu Gly Lys Gly Val Arg Phe Leu Leu Thr Thr Phe Ser
 20 25 30
 Ile Leu Leu Cys Ser Leu Gln Ala Val Ala Gln Ser Leu Pro Arg Val
 35 40 45
 Ala Pro Glu Gln Val Gly Met Asp Ser His Arg Leu Leu His Ala Asp
 50 55 60
 Glu Ala Ile His Arg Ala Ile Asp His Lys Glu Ile Pro Gly Ala Val
 65 70 75 80
 Leu Ala Val Ile Arg His Gly Lys Met Ala Tyr Leu Lys Ala Tyr Gly
 85 90 95
 Asn Lys Arg Ile Tyr Pro Asn Val Glu Pro Met Glu Ile Asn Thr Val
 100 105 110
 Phe Asp Met Ala Ser Cys Ser Lys Ser Met Ser Thr Ala Val Ser Val
 115 120 125
 Met Ile Leu Val Glu Arg Gly Gln Leu Arg Leu Leu Asp Arg Val Ser

130		135		140
Phe Tyr Leu Pro Asp	Phe Gln Glu Trp Arg	Gly Glu Asn Gly Glu Lys		
145	150	155		160
Lys Asp Ile Arg	Ile Asp Leu Met Thr His Thr Ser Gly Leu Pro			
	165	170		175
Pro Tyr Ala Pro Val Ser Glu Leu Gln Glu Lys Tyr Gly Ser Pro Asn				
	180	185		190
Pro Lys Gly Leu Ile Glu Tyr Ile Ser Thr Cys Lys Arg Glu Phe Lys				
	195	200		205
Pro Gln Thr Lys Phe Gln Tyr Ser Cys Leu Asn Tyr Ile Thr Leu Gln				
	210	215		220
His Ile Ile Glu Thr Ile Thr Gly Gln Ser Leu Arg Asp Phe Ala Lys				
	225	230		235
Glu Asn Ile Phe Asp Ile Leu Gly Met Gln Tyr Thr Asp Tyr Leu Pro				
	245	250		255
Thr Ile Gln Gln Gln Asp Gly Lys Trp Ile Asn Thr Val Ala Cys Pro				
	260	265		270
Trp Met Asp Arg Ile Ala Pro Thr Glu Lys Gln Lys Asp Gly Ser Val				
	275	280		285
Leu Cys Gly Gln Val His Asp Pro Leu Ala Arg Ile Leu Asn Gly Gly				
	290	295		300
Ile Ser Gly Asn Ala Gly Ile Phe Ser Asn Ala Asn Asp Ile Gly Ile				
	305	310		315
Leu Ala Ala Ala Leu Leu Asn Gly Gly Glu Tyr Asn Gly His Arg Ile				
	325	330		335
Leu Ser Pro Leu Gly Val Lys Thr Met Cys Thr Val Pro Arg Glu Leu				
	340	345		350
Thr Ala Phe Gly Arg Thr Pro Gly Trp Asp Ile Phe Ser Pro Tyr Ala				
	355	360		365
Ser Asn Lys Gly Asp Leu Phe Ser Pro Asn Thr Phe Gly His Thr Gly				
	370	375		380
Tyr Thr Gly Thr Ser Ile Ile Ile Asp Pro Asp Asn Asp Thr Ala Val				
	385	390		395
Ile Leu Leu Val Asn Ala Val His Pro Glu Asp Arg His Ser Ile Val				
	405	410		415
Arg Leu Arg Ser Leu Val Ala Asn Ala Val Ala Ala Ser Ile Cys Pro				
	420	425		430
Pro Ala Gln Val Tyr Thr Asp His Tyr Tyr Lys Arg Phe Leu Gln Phe				
	435	440		445
Glu Thr Glu Thr Pro Ile Ser Pro Lys Asp Ile Val Met Val Gly Asn				
	450	455		460
Ser Leu Thr Glu Asn Gly Gly Asn Trp Ser Lys Arg Leu Asn Lys Lys				
	465	470		475
Asn Ile Arg Asn Arg Gly Ile Ile Gly Asp Glu Ala Leu Gly Ile Cys				
	485	490		495
Gln Arg Leu Phe Gln Ile Leu Pro Gly Thr Pro Gln Lys Leu Phe Leu				
	500	505		510
Met Ala Gly Ile Asn Asp Val Ser His Asp Leu Ser Thr Asp Ser Val				
	515	520		525
Val Thr Leu Ile Thr Lys Val Ile Glu Lys Ile Gln Thr Glu Ser Pro				
	530	535		540
Arg Thr Lys Leu Tyr Ile Gln Ser Leu Leu Pro Ile Asn Glu Ser Phe				
	545	550		555
Gly Arg Tyr Lys Thr Met Ile Gly Lys Thr Asp Leu Ile Pro Glu Ile				
	565	570		575
Asn Arg Lys Leu Glu Ala Leu Ala Lys Glu Lys Lys Ile Pro Phe Ile				
	580	585		590
His Leu Phe Pro Leu Phe Thr Glu Lys Asn Ser Asn Val Met Arg Lys				
	595	600		605

Glu Leu Thr Thr Asp Gly Leu His Leu Thr Glu Glu Gly Tyr Arg Ile
 610 615 620
 Trp Ser Lys Ala Leu Lys Arg Tyr Leu
 625 630

<210> 8824
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 8824
 Leu Cys Gln Pro His Ala Leu Ser Gly Gln Cys His His His Arg Arg
 1 5 10 15
 Pro Lys Pro Glu Arg Phe Gly Tyr Ala Phe Tyr Phe Arg Thr Ala Gln
 20 25 30
 Arg Met Glu Arg Pro Phe Phe Ser Arg Pro His Phe Asp Ala Glu Met
 35 40 45
 Asn Thr Met Ser Leu Ala Phe Glu Pro Asp Phe Lys Ala Ile Phe Phe
 50 55 60
 Pro Lys Ile Asp Phe Glu Gly Lys Ile Pro Leu Phe Lys Arg Ala Arg
 65 70 75 80
 Lys Pro Leu Lys Asp Lys Ile Phe Ser Pro Lys Val Pro Lys Ser Gln
 85 90 95
 Asp Lys Phe Phe Ser His Val Gly Val Leu Thr Pro Phe
 100 105 110

<210> 8825
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 8825
 Phe Gln Gln Phe Val Gly Leu Phe Leu Glu Glu Glu Val Leu Leu His
 1 5 10 15
 Arg His Phe Arg Ala Leu Glu Gln Glu Met Glu Val His Asn Ser Glu
 20 25 30
 Tyr Lys Gly Pro Leu Gln Ser Glu Arg Phe Val His Val Ala Ile Pro
 35 40 45
 Ser Glu Pro Ile Trp Ile Arg Asn Lys Ser Arg Asp Phe Ala Ile Glu
 50 55 60
 Gln Cys Asp Gly Phe Ala Ile Arg Leu Trp Gly Tyr Lys Glu Gln Ile
 65 70 75 80
 Ile Gly

<210> 8826
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 8826
 Pro Leu Ile Thr Asn Tyr Met Ser Lys Met Asn Ser Met Leu Met Gly
 1 5 10 15
 Ile Cys Phe Leu Leu Ser Ser Leu Phe Ser Cys Gln Gln Ser Lys Gly
 20 25 30
 Asp Phe Lys Thr Val Pro Val Lys Glu Phe Ala Ser Leu Ile Glu Asp
 35 40 45
 Ala Ser Val Gln Arg Leu Asp Val Arg Thr Met Ala Glu Tyr Ser Glu
 50 55 60

Gly His Ile Pro Gly Thr Ile Asn Ile Asn Val Leu Asp Asp Ser Phe
 65 70 75 80
 Ala Asp Ile Ala Asp Ser Thr Leu Gln Lys Asp Lys Pro Val Ala Leu
 85 90 95
 Tyr Cys Arg Ser Gly Lys Arg Ser Lys Lys Ala Ala Ala Ile Leu Ser
 100 105 110
 Glu Lys Gly Tyr Lys Val Tyr Glu Leu Asp Lys Gly Phe Asn Ala Trp
 115 120 125
 Gln Glu Ala Gly Glu Lys Val Glu Lys
 130 135

<210> 8827

<211> 307

<212> PRT

<213> B.fragilis

<400> 8827

Thr Gly Ala Thr Glu Ile Lys Met Trp Lys Asp Phe Phe Tyr Phe Thr
 1 5 10 15
 Arg Ala Glu Arg Gln Gly Ile Leu Ile Leu Ala Val Leu Cys Ile Leu
 20 25 30
 Val Phe Val Ala Gly Trp Leu Ile Pro Val Lys Glu Asn Thr Ala Lys
 35 40 45
 Asn Asn Thr Glu Lys Phe Lys Lys Glu Tyr Ala Gly Phe Met Ser Ser
 50 55 60
 Ile Arg Glu Lys Glu Gln Lys Ile Tyr Ser His Asn Asn Arg Phe Gln
 65 70 75 80
 Pro Pro Arg Thr Val Arg Leu Thr Thr Phe Asp Pro Asn Ile Thr Asp
 85 90 95
 Ser Val Gly Phe Leu Asp Leu Gly Leu Pro Ala Trp Met Ala Lys Asn
 100 105 110
 Ile Leu Lys Tyr Arg Asn Lys Gly Gly Lys Phe Arg Arg Ala Glu Asp
 115 120 125
 Phe Arg Lys Val Tyr Gly Leu Thr Gln Glu Gln Tyr Glu Met Leu Leu
 130 135 140
 Pro Tyr Ile His Ile Ala Thr Leu Ala Lys Pro Lys Asp Thr Leu Arg
 145 150 155 160
 Leu Tyr Thr Arg Lys Ile Glu Glu Asp Thr Leu Lys Phe Phe Lys Tyr
 165 170 175
 Ala Ala Gly Thr Val Val Glu Leu Asn Ser Ala Asp Thr Thr Glu Leu
 180 185 190
 Lys Lys Ile Pro Gly Ile Gly Ser Gly Ile Ala Arg Met Ile Thr Gly
 195 200 205
 Tyr Arg Asn Arg Leu Gly Gly Phe Tyr Asp Ile Ala Gln Leu Lys Glu
 210 215 220
 Ile His Leu Asp Val Glu Lys Leu Arg Pro Trp Phe Asn Val Ala Thr
 225 230 235 240
 Gly Asn Thr Arg Arg Leu Asn Ile Asn Arg Thr Gly Ile Glu Arg Leu
 245 250 255
 Lys Ala His Pro Tyr Ile Asn Phe Tyr Gln Ala Lys Ile Ile Val Glu
 260 265 270
 Tyr Arg Lys Lys Lys Gly Ile Leu Lys Ser Leu Lys Gln Leu Ser Leu
 275 280 285
 Tyr Glu Glu Phe Thr Pro Gln Asp Leu Glu Arg Ile Ser His Tyr Ile
 290 295 300
 Cys Phe Glu
 305

<210> 8828

<211> 391
 <212> PRT
 <213> B.fragilis

<400> 8828

Ile	Lys	Asn	Thr	Met	Asn	Gln	Thr	Val	Asn	Lys	Arg	Leu	Leu	Ala	Leu
1				5					10					15	
Asp	Val	Leu	Arg	Gly	Ile	Thr	Ile	Ala	Gly	Met	Ile	Met	Val	Asn	Asn
			20					25					30		
Pro	Gly	Ser	Trp	Ser	Tyr	Val	Tyr	Ala	Pro	Leu	Gly	His	Ala	Ala	Trp
		35					40					45			
Ile	Gly	Leu	Thr	Pro	Thr	Asp	Leu	Val	Phe	Pro	Phe	Phe	Met	Phe	Ile
	50					55					60				
Met	Gly	Ile	Ser	Thr	Tyr	Ile	Ser	Leu	Arg	Lys	Tyr	Asn	Phe	Glu	Phe
65					70					75				80	
Ser	His	Ser	Ala	Ala	Leu	Lys	Ile	Leu	Lys	Arg	Thr	Ile	Val	Ile	Phe
			85						90					95	
Ala	Ile	Gly	Leu	Gly	Ile	Ala	Trp	Phe	Ser	Met	Phe	Cys	Arg	Thr	Trp
		100						105					110		
Asn	Ser	Leu	Ser	Gly	Glu	Asp	Ile	Ser	Phe	Phe	Ser	Arg	Leu	Tyr	Glu
	115						120					125			
Ser	Val	Trp	Thr	Phe	Gly	His	Ile	Arg	Ile	Leu	Gly	Val	Met	Gln	Arg
	130					135					140				
Leu	Ala	Leu	Cys	Tyr	Gly	Ala	Thr	Ala	Ile	Ile	Ala	Leu	Ile	Met	Lys
145					150					155				160	
His	Lys	Tyr	Ile	Pro	Tyr	Leu	Ile	Ala	Ile	Leu	Leu	Ile	Gly	Tyr	Phe
			165					170						175	
Ile	Ile	Leu	Ile	Asn	Gly	Asn	Gly	Phe	Glu	Tyr	Asn	Ser	Ser	Asn	Ile
		180						185					190		
Leu	Ser	Ile	Val	Asp	Arg	Thr	Val	Leu	Gly	Glu	Ala	His	Met	Tyr	Lys
	195					200						205			
Asp	Asn	Gly	Ile	Asp	Pro	Glu	Gly	Leu	Leu	Ser	Thr	Ile	Pro	Ser	Ile
	210					215					220				
Ala	His	Val	Leu	Ile	Gly	Phe	Cys	Val	Gly	Lys	Leu	Leu	Met	Glu	Val
225					230					235				240	
Lys	Asp	Ile	His	Glu	Lys	Ile	Glu	Arg	Leu	Phe	Leu	Ile	Gly	Thr	Ile
			245						250					255	
Leu	Thr	Phe	Ala	Gly	Phe	Leu	Leu	Ser	Tyr	Gly	Cys	Pro	Ile	Ser	Lys
		260						265					270		
Lys	Ile	Trp	Ser	Pro	Thr	Phe	Ala	Ile	Val	Thr	Cys	Gly	Leu	Ala	Ser
	275						280					285			
Ser	Phe	Leu	Ala	Leu	Leu	Val	Trp	Ile	Ile	Asp	Val	Arg	Gly	Tyr	Thr
	290					295					300				
Arg	Trp	Ser	Arg	Phe	Phe	Glu	Ser	Phe	Gly	Val	Asn	Pro	Leu	Phe	Ile
305					310					315				320	
Tyr	Val	Met	Gly	Ala	Val	Leu	Ser	Ile	Leu	Leu	Gly	Ser	Ile	Leu	Ile
			325						330					335	
Pro	Tyr	Asp	Gly	Gly	Ser	Ile	Ser	Leu	His	Gly	Phe	Val	Tyr	Asn	Ala
			340					345					350		
Ile	Leu	Gln	Pro	Val	Leu	Gly	Asp	Tyr	Pro	Gly	Ser	Leu	Ala	Phe	Ala
	355					360						365			
Ile	Leu	Phe	Val	Gly	Leu	Asn	Trp	Cys	Ile	Gly	Tyr	Ile	Leu	Tyr	Lys
	370					375					380				
Lys	Lys	Ile	Tyr	Ile	Lys	Ile									
385					390										

<210> 8829
 <211> 237
 <212> PRT

<213> B.fragilis

<400> 8829

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Arg Ile Leu Thr Thr Lys Asn Arg Ile Asp Met Lys Lys Ser Leu Leu
1      5      10      15
Ile Ser Val Phe Ala Thr Leu Ala Met Met Ile Ser Leu Asn Ala Leu
20     25     30
Ala Gln Glu Lys Ala Thr Gly Lys Ala Tyr Lys Ala Ile Gln Lys Asp
35     40     45
Glu Lys Val Ile Asn Lys Asp Leu Gln Lys Lys Ala Ile Lys Glu Ala
50     55     60
Arg Lys Gln Ala Lys Glu Leu Thr Lys Glu Gly Phe Lys Thr Pro Val
65     70     75     80
Gly Lys Leu Pro Leu Asp Lys Gln Leu Glu Asn Ser Trp Glu Lys Gln
85     90     95
Met Glu Ile Asp Met Asn Gly Asn Pro Tyr Trp Tyr Ile Ala Thr Ser
100    105    110
Arg Val Ile Gly Gly Asn Gln Ser Ala Ala Ala Met Gln Ala Thr Asn
115    120    125
Thr Ala Lys Ile Asp Ile Ala Gly Gln Val Gln Thr Lys Val Thr Gln
130    135    140
Leu Ile Glu Ser Lys Val Ala Asn Asp Asp Met Gly Gln Glu Glu Ala
145    150    155    160
Ala Ser Leu Ser Ser Ala Val Ala Ala Gly Lys Ser Ile Ile Ser Gly
165    170    175
Thr Leu Gly Arg Thr Ile Pro Leu Val Glu Val Tyr Arg Thr Leu Pro
180    185    190
Asn Lys Asn Val Glu Val Met Val Thr Ile Gly Tyr Ser Leu Glu Ala
195    200    205
Ala Asn Lys Val Ala Val Lys Ala Leu Ser Glu Glu Leu Ala Lys Lys
210    215    220
Ser Pro Glu Leu Ala Lys Glu Leu Asp Lys Leu Ala Gln
225    230    235

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<210> 8830

<211> 399

<212> PRT

<213> B.fragilis

<400> 8830

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Leu Pro Val Thr Arg Cys Ser Ser Leu Val Val Tyr Lys Arg Ile Lys
1      5      10      15
Ala Met Asn Thr Thr Glu Phe Asp Glu Ile Arg Pro Tyr Asn Asp Glu
20     25     30
Glu Leu Ser Gly Val Phe Glu Glu Leu Ile Ala Asp Pro Ala Phe Gln
35     40     45
Lys Val Val Ala Gly Val Ile Pro Asp Val Pro Phe Glu Met Leu Ala
50     55     60
Gln Lys Met Arg Ala Cys Arg Thr Lys Leu Glu Phe Gln Lys Thr Phe
65     70     75     80
Cys Tyr Gly Leu Leu Trp Lys Leu Ala Gly Asp Cys Thr Asp Gly Ile
85     90     95
Ser Leu Asp His Thr Ala Ile Pro Asp Lys Ser Lys Ala Tyr Thr Tyr
100    105    110
Ile Ser Asn His Arg Asp Ile Ile Leu Asp Ser Gly Phe Leu Ser Val
115    120    125
Leu Leu Val Asp Gln Gly Met Asp Thr Val Glu Ile Ala Ile Gly Asp
130    135    140
Asn Leu Leu Ile Tyr Pro Trp Ile Lys Lys Phe Val Arg Val Asn Lys

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145          150          155          160
Ser Phe Ile Val Gln Arg Ala Leu Thr Met Arg Gln Met Leu Glu Ser
          165          170          175
Ser Ala Arg Met Ser Arg Tyr Met His Tyr Ala Ile Gly Glu Lys Asn
          180          185          190
Gln Ser Ile Trp Ile Ala Gln Arg Glu Gly Arg Ala Lys Asp Ser Asn
          195          200          205
Asp Arg Thr Gln Asp Ser Val Leu Lys Met Leu Ala Met Gly Gly Glu
          210          215          220
Gly Asp Val Val Ser Arg Leu Met Glu Met Asn Ile Ala Pro Leu Ala
225          230          235          240
Ile Ser Tyr Glu Tyr Asp Pro Cys Asp Tyr Leu Lys Ala Gln Glu Phe
          245          250          255
Gln Leu Lys Arg Asp Ile Glu Gly Tyr Lys Lys Thr Met Ala Asp Asp
          260          265          270
Leu Lys Asn Met Gln Thr Gly Leu Phe Gly Tyr Lys Gly Arg Val His
          275          280          285
Phe Gln Thr Gly Ala Cys Leu Asn Asp Leu Leu Ser Thr Val Asp Arg
          290          295          300
Ser Leu Pro Lys Pro Glu Leu Phe Ala Arg Ile Ser Thr Trp Ile Asp
305          310          315          320
Gln Arg Ile His Ser Asn Tyr Arg Leu Tyr Pro Gly Asn Tyr Val Ala
          325          330          335
His Asp Leu Leu Thr Gly Lys Asn Asp Phe Glu Ser His Tyr Thr Leu
          340          345          350
Ala Glu Lys Glu Arg Phe Glu Ala Tyr Val Glu Lys Gln Leu Glu Lys
          355          360          365
Ile Glu Ile Pro Asn Lys Asp Ile Ser Phe Leu Arg Glu Lys Leu Leu
          370          375          380
Leu Met Tyr Ala Asn Pro Leu Thr Asn Tyr Leu Ala Ala Arg Gln
385          390          395

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<210> 8831

<211> 295

<212> PRT

<213> B.fragilis

<400> 8831

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Ser Met Val Ala Gly Arg Leu Tyr Arg Tyr Leu Asp Asp Asp Ser Gly
1          5          10          15
Ser Cys Leu Pro Val Cys Leu Val Thr Glu Lys Lys Gly Gly Gln His
          20          25          30
Met Ser Trp Asp Gln Phe Val Ile Phe Ala Ile Val Ala Leu Leu Cys
          35          40          45
Trp Gly Ile Gly Ala Val Ala Ala Trp Arg Gly Lys Arg Gln Trp Met
          50          55          60
Val Tyr Thr Ala Thr Leu Ala Gly Leu Ala Val Phe Phe Ala Phe Ile
65          70          75          80
Leu Gly Met Trp Ile Ser Leu Glu Arg Pro Pro Met Arg Thr Met Gly
          85          90          95
Glu Thr Arg Leu Trp Tyr Ser Phe Phe Leu Pro Leu Ala Gly Ile Ile
          100          105          110
Thr Tyr Ser Arg Trp Arg Tyr Lys Trp Ile Leu Ser Phe Ser Phe Ile
          115          120          125
Leu Ser Leu Val Phe Val Cys Ile Asn Leu Phe Lys Pro Glu Ile His
          130          135          140
Asn Lys Thr Leu Met Pro Ala Leu Gln Ser Pro Trp Phe Ala Pro His
145          150          155          160
Val Ile Val Tyr Met Phe Ala Tyr Ala Met Leu Gly Ala Ala Ala Val

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<210> 8832
<211> 71
<212> PRT
<213> B.fragilis
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<210> 8833
<211> 263
<212> PRT
<213> B.fragilis
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<400> 8833															
Asp	Asn	Tyr	Phe	Cys	Phe	Gly	Ile	Glu	Ile	Arg	Ile	Phe	Ala	Pro	Leu
1				5					10					15	
Phe	Ser	Gln	Phe	Pro	Met	Gln	Lys	Val	Phe	Leu	Phe	Leu	Leu	Leu	Phe
			20					25					30		
Leu	Leu	Pro	Leu	Ala	Glu	Val	Pro	Asn	His	Ala	Pro	Ala	Ser	Glu	Pro
		35					40					45			
Val	Ser	Val	Ala	Ser	Thr	Pro	Glu	Thr	Asp	Glu	Ile	Asp	Gln	Leu	Phe
	50					55					60				
Asp	Asp	Met	Gln	Leu	Asp	Gly	Ile	Val	Ser	Tyr	Thr	Ala	Phe	Arg	Gln
65					70					75					80
Ala	Val	Thr	Gly	Tyr	Arg	Lys	Ile	Glu	Gln	Lys	Ser	Lys	Ser	Ile	Met
				85					90					95	
Thr	Leu	Ile	Asp	Phe	Ser	Lys	Pro	Ser	Thr	Glu	Lys	Arg	Leu	Tyr	Val
			100					105					110		
Leu	Asp	Met	Lys	Asn	Lys	Lys	Leu	Leu	Tyr	Thr	Ser	Val	Val	Ser	His
		115					120					125			
Gly	Lys	Asn	Ser	Gly	Gly	Asn	Tyr	Ala	Thr	Ser	Phe	Ser	Asn	Lys	Asn
	130					135					140				

Gly Ser Tyr Lys Ser Ser Leu Gly Phe Tyr Leu Thr Glu Asn Thr Tyr
 145 150 155 160
 Gln Gly Arg Asn Gly Tyr Ser Leu Val Leu Asn Gly Leu Glu Lys Gly
 165 170 175
 Ile Asn Asp Gln Ala Lys Gln Arg Ala Ile Val Met His Gly Ala Ala
 180 185 190
 Tyr Ala Asn Pro Asn Ile Thr Ala Ser Ala Gly Arg Leu Gly Arg Ser
 195 200 205
 Leu Gly Cys Pro Ala Leu Pro Gln Ala Leu Ala Lys Pro Ile Ile Asp
 210 215 220
 Thr Ile Lys Lys Gly Ser Val Leu Phe Ile Tyr Ala Asn Asn Lys Asp
 225 230 235 240
 Tyr Leu Ala Asn Ser Thr Phe Leu Ser Pro Arg Gln Thr Glu Tyr Leu
 245 250 255
 Ser Trp Ala Gln Pro Ala Asn
 260

<210> 8834

<211> 309

<212> PRT

<213> B.fragilis

<400> 8834

Gln Lys Ser Ala Met Lys Asn Pro Ile Ile Tyr Arg Ile Leu Gln Gln
 1 5 10 15
 Gly Phe Cys Leu Ile Phe Cys Leu Gly Leu Leu Ser Ser Cys Ile Arg
 20 25 30
 Glu Glu Glu Phe Val Asn Asn Pro Gln Gly Asn Phe Glu Gln Leu Trp
 35 40 45
 Lys Ile Ile Asp Glu Gln Tyr Cys Phe Leu Asp Tyr Lys Gln Ile Asp
 50 55 60
 Trp Asp Glu Ile His Thr Arg Tyr Gln Lys Leu Ile Thr Pro Asn Met
 65 70 75 80
 Gly Ser Glu Gly Leu Phe Glu Val Leu Ser Glu Met Leu Tyr Glu Leu
 85 90 95
 Gln Asp Gly His Val Asn Leu Ala Ser Ala His Asn Val Ser Tyr Tyr
 100 105 110
 Asp Ala Trp Tyr Gln Asp Tyr Pro Arg Asn Phe Arg Ala Asp Leu Leu
 115 120 125
 Glu Asp Ser Tyr Leu Gly Arg Ala Ser Thr Asp Tyr Arg Thr Ala Ala
 130 135 140
 Gly Leu Lys Tyr Lys Ile Leu Lys Asp Asn Ile Gly Tyr Ile Arg Tyr
 145 150 155 160
 Glu Ser Phe Ala Asp Pro Val Gly Asn Gly Asn Leu Asp Glu Val Leu
 165 170 175
 Ser Tyr Leu Ser Val Cys Asn Gly Leu Ile Ile Asp Val Arg Asp Asn
 180 185 190
 Gly Gly Gly Asn Ala Thr Asn Ser Ala Arg Ile Ala Ser Arg Phe Thr
 195 200 205
 Asn Glu Lys Ile Leu Thr Gly Tyr Ile Ser His Lys Thr Gly Thr Gly
 210 215 220
 His Asn Asp Phe Ser Lys Pro Tyr Ala Ile Tyr Leu Glu Pro Ala Asn
 225 230 235 240
 Gly Val Arg Trp Gln Lys Lys Val Val Val Leu Thr Asn Arg Arg Ser
 245 250 255
 Phe Ser Ala Thr Asn Asp Phe Val Asn His Met Arg Cys Leu Ala Asn
 260 265 270
 Val Thr Thr Ile Gly Asp Gln Asn Arg Arg Gly Ser Gly Met Pro Phe
 275 280 285

245 250 255
 Glu Gly Tyr Glu Leu Asp Pro Lys Phe Val Gly Asn Ala Arg Val Glu
 260 265 270
 Tyr Asp Gln Met Lys Ala Phe Glu Gly Ala Asp Phe Ile Tyr Ala Lys
 275 280 285
 Asn Trp Ala Ala Tyr Thr Gly Asp Asn Tyr Gly Gln Ile Leu Ser Thr
 290 295 300
 Asp Arg Asn Trp Thr Val Gly Asp Arg Gln Met Ala Val Thr Asn Asn
 305 310 315 320
 Ala Tyr Phe Met His Cys Leu Pro Val Arg Arg Asn Met Ile Val Thr
 325 330 335
 Asp Asp Val Ile Glu Ser Pro Gln Ser Ile Val Ile Pro Glu Ala Ala
 340 345 350
 Asn Arg Glu Ile Ser Ala Thr Val Val Leu Lys Arg Leu Leu Glu Asn
 355 360 365
 Leu Pro
 370

<210> 8837

<211> 208

<212> PRT

<213> B.fragilis

<400> 8837

Ala Gly Asn Tyr Trp Ser Ala Tyr Tyr Arg Tyr Phe Phe His Phe Phe
 1 5 10 15
 Leu Phe Ile Thr Met Lys Gly Tyr Asn Ile Phe Phe Phe Ile Pro Leu
 20 25 30
 Leu Phe Leu Leu Leu Ser Leu His Ala Cys Thr Ser Lys Ser Lys Lys
 35 40 45
 Asp Met Glu Tyr Val Lys Gly Trp His Gly Lys Lys Ile Ser Leu Pro
 50 55 60
 Ser Glu Ser Asp Phe Leu Leu Phe Gly Arg Asp Ser Val Val Tyr Asp
 65 70 75 80
 Tyr Ser Ser Phe Pro Tyr Lys Ile Val Leu Val Ile Gly Lys Glu Gln
 85 90 95
 Cys Ile Ser Cys Lys Phe Asp Val Ala Lys Trp Gln Glu Leu Ile Gln
 100 105 110
 Gln Val Asp Ser Ile Thr Ser Phe Lys Val Gly Phe Val Phe Val Leu
 115 120 125
 Glu Pro Ile Tyr Gln His Asp Val Tyr Val Met Leu Arg Ser His Gln
 130 135 140
 Phe Met Thr Pro Val Phe Ile Asp Thr Asn Asn Thr Phe Arg Gly Met
 145 150 155 160
 Asn Lys Ile Ser Asp Asn Asp Ser His Val Trp Leu Leu Asp Ser Asn
 165 170 175
 Asn Arg Ile Ile Tyr Ile Gly Asp Pro Thr Val Asn Gln Lys Ile Asn
 180 185 190
 Lys Glu Tyr Met Glu Leu Val Arg Thr Asn Tyr Leu Phe Asn Asp Lys
 195 200 205

<210> 8838

<211> 139

<212> PRT

<213> B.fragilis

<400> 8838

Val Leu Asp Tyr Leu Cys Arg Asn Ile Asn Leu Phe Ile Met Lys Lys
 1 5 10 15


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<210> 8839
<211> 297
<212> PRT
<213> B.fragilis
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Ile	Phe	Leu	Tyr	Met	Lys	Thr	Ile	Ser	Lys	Leu	Phe	Leu	Leu	Leu	Ser
1				5					10					15	
Ile	Ile	Leu	Leu	Ser	Ser	Cys	Asp	Glu	Thr	Glu	Leu	Asp	Gln	Thr	Val
			20					25					30		
Thr	Asn	Gln	Val	Asn	Pro	Gln	Lys	Glu	Glu	Asp	Ser	Arg	Ile	Val	Phe
			35				40					45			
Asn	Ser	Ala	Lys	Glu	Phe	Tyr	Asn	Thr	Leu	Asp	Thr	Leu	Ser	Tyr	Met
			50			55					60				
Thr	Tyr	Glu	Glu	Gln	Thr	Glu	Trp	Ile	Arg	Ala	Ser	Gly	Ile	Lys	Tyr
65					70					75					80
Pro	Leu	Tyr	Lys	Asp	Leu	Glu	Phe	Cys	Glu	Asp	Glu	Ile	Met	Thr	Glu
				85					90					95	
Met	Pro	Arg	Ala	Phe	Gln	Ala	Leu	Phe	Asn	His	Lys	Met	Glu	Met	Gln
			100					105					110		
Ile	Asn	Asp	Thr	Val	Ile	Ala	Phe	Glu	Lys	Gly	Asn	Met	Tyr	Val	Lys
			115				120					125			
Ser	Ile	Lys	Glu	Lys	Ile	Leu	Pro	Val	Pro	Val	Leu	Tyr	Gly	Gln	Val
			130			135					140				
Gly	Val	Asn	Gln	Glu	Glu	Ser	Glu	Val	Thr	Thr	Arg	Thr	Val	Tyr	Glu
145					150					155					160
Thr	Lys	Tyr	Gly	Lys	Ile	Gly	Thr	Ser	Tyr	Gln	Tyr	Glu	Phe	Lys	Ile
				165					170					175	
Pro	Glu	Gly	Lys	Ser	Lys	Tyr	Lys	Tyr	Val	His	Glu	Leu	Lys	Ser	Val
			180					185					190		
Ile	Ile	Lys	Glu	Asn	Leu	Pro	Pro	Tyr	Lys	Ser	Trp	Ser	Asn	Leu	Phe
			195				200					205			
Leu	Val	Leu	Lys	Leu	Glu	Trp	Lys	Gly	Lys	Lys	Lys	Trp	Lys	Val	Ala
			210			215					220				
Glu	Lys	Glu	Glu	Arg	Asn	Ile	Ser	Ile	Asp	Leu	Asn	Val	Cys	Lys	Arg
225					230					235					240
Asn	Leu	Ala	Lys	Val	Lys	Tyr	Asn	Gln	Glu	Ile	Arg	Ile	Asp	Val	Gln
				245					250					255	
Asn	Met	Asp	Ser	Lys	Ser	His	Ser	Ile	Asn	Ile	Glu	Gly	Tyr	Ile	Ile
			260					265					270		
His	Glu	Val	Val	Gly	Ile	Pro	Ser	Thr	Lys	Met	Phe	Asn	Gly	Trp	Ser
			275				280					285			

Tyr Pro Leu Val Glu Trp Gln Pro Arg
290 295

<210> 8840
<211> 255
<212> PRT
<213> B.fragilis

<400> 8840
Ile Ser Ile His Ala Phe Tyr Leu Leu Ser Gly Lys Ile Gly Thr Gly
1 5 10 15
Glu Asn Ala Ile Phe Ala Gln Lys Thr Ser Ile Val Val Lys Val Glu
20 25 30
Phe Thr Asp Glu Tyr Gln Lys Ile Leu Trp Gln Ile Ser Leu Phe Lys
35 40 45
Asp Met Asp Asn Ser Leu Gln Arg Arg Leu Pro Gln Glu Leu Glu Leu
50 55 60
Ser Val Tyr Glu Val Ala Arg Lys Glu Ile Val Leu Lys Gln Asp Thr
65 70 75 80
Tyr Cys Asn His Leu Tyr Val Leu Leu Lys Gly Glu Leu Glu Val Asn
85 90 95
Ile Val Asp Val Ala Gly Asn Leu Val Lys Val Glu Asp Ile Arg Ala
100 105 110
Pro Arg Ala Phe Ala Thr Pro His Leu Phe Gly Asp Lys Asn Leu Leu
115 120 125
Pro Ala Thr Phe Thr Ala Ser Glu Asp Ser Val Leu Leu Met Ala Thr
130 135 140
Arg Thr Ser Val Phe Lys Leu Ile Ser Ser Val Pro Asp Leu Leu His
145 150 155 160
Arg Phe Leu Cys Val Thr Gly Asn Cys Asn Lys Cys Thr Val Thr Arg
165 170 175
Leu Arg Ile Leu Ser Tyr Lys Met Leu Arg Ser Arg Leu Val Tyr Tyr
180 185 190
Phe Met Glu His Lys Ile Ser Pro Asp Thr Ala Leu Leu Glu His Asn
195 200 205
Gln Val Gln Leu Ala Glu Tyr Leu Gly Val Thr Arg Pro Ala Leu Ser
210 215 220
Lys Glu Ile Asn Lys Met Met Lys Glu Gly Leu Ile Ser Ile Asn Lys
225 230 235 240
Lys Val Val Thr Leu Glu Asp Met Ala Ala Leu Lys Glu Tyr Ile
245 250 255

<210> 8841
<211> 456
<212> PRT
<213> B.fragilis

<400> 8841
Asp Arg Ser Gln Leu Trp Gln Glu Ser Arg Gly Tyr Ser Pro Lys Asn
1 5 10 15
Lys Ile Asn Pro Phe Leu Phe Thr Gly Tyr Leu Lys His Thr Glu Asn
20 25 30
Met Thr Tyr Arg Arg Ser Ile Leu Lys Leu Leu Leu Thr Phe Phe Val
35 40 45
Phe Met Thr Ser Thr Leu Leu Ser Arg Gly Ala Glu Pro Gly Ala Arg
50 55 60
Pro Pro Arg Ile Arg Ile Lys Thr Gly Ile Glu Val Leu Lys Glu Gln
65 70 75 80
Asn Phe Lys Cys Leu Glu Gly Lys Arg Val Gly Leu Ile Thr Asn Pro


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      35              40              45
Asn Gly Asn Ala Phe Ala Ala Gln Ala Leu Lys Asp Gly Cys Ala Tyr
  50              55              60
Ala Ile Val Asp Glu Ala Glu Tyr Ala Pro Glu Asn Asn Arg His Ile
  65              70              75              80
Ile Leu Val Asp Asn Cys Leu Gln Thr Leu Gln Gln Leu Ala Asn Tyr
      85              90              95
His Arg Arg Gln Leu Gly Thr Lys Val Ile Gly Ile Thr Gly Thr Asn
      100              105              110
Gly Lys Thr Thr Thr Lys Glu Leu Ile Ser Ala Val Leu Ser Lys Ser
      115              120              125
His Asn Val Leu Tyr Thr Glu Gly Asn Leu Asn Asn His Ile Gly Val
      130              135              140
Pro Met Thr Leu Leu Arg Leu Lys Ala Glu His Glu Leu Ala Val Ile
      145              150              155              160
Glu Met Gly Ala Asn His Pro Gly Glu Ile Lys Phe Leu Val His Ile
      165              170              175
Ala Glu Pro Asp Tyr Gly Ile Ile Thr Asn Val Gly Lys Ala His Leu
      180              185              190
Glu Gly Phe Gly Ser Phe Glu Gly Val Ile Arg Thr Lys Gly Glu Leu
      195              200              205
Tyr Asp Tyr Leu Arg Glu Lys Glu Asp Ser Thr Val Phe Ile His His
      210              215              220
Asp Asn Ala Tyr Leu Met Asp Ile Ala His Gly Leu Asn Leu Ile Pro
      225              230              235              240
Tyr Gly Ser Glu Asp Ala Leu Tyr Val Asn Gly His Val Thr Gly Asn
      245              250              255
Ser Pro Tyr Leu Thr Phe Glu Trp Lys Ala Gly Lys Asp Gly Asp Leu
      260              265              270
His Lys Val Gln Thr Gln Leu Ile Gly Glu Tyr Asn Phe Pro Asn Ala
      275              280              285
Leu Ala Ala Val Thr Ile Gly Arg Phe Phe Gly Val Glu Ala Gly Lys
      290              295              300
Ile Asp Glu Ala Leu Ala Gly Tyr Thr Pro Arg Asn Asn Arg Ser Gln
      305              310              315              320
Leu Lys Lys Thr Ala Asp Asn Thr Leu Ile Ile Asp Ala Tyr Asn Ala
      325              330              335
Asn Pro Thr Ser Met Met Ala Ala Leu Gln Asn Phe Arg Asn Met Thr
      340              345              350
Val Lys Lys Lys Met Leu Ile Leu Gly Asp Met Arg Glu Leu Gly Ala
      355              360              365
Glu Ser Ala Ala Glu His Arg Lys Ile Val Asp Phe Leu Gln Glu Cys
      370              375              380
Ser Phe Glu Lys Val Leu Leu Val Gly Glu Gln Phe Thr Ala Thr His
      385              390              395              400
Pro Pro Tyr His Thr Tyr Ala Asn Ala Gln Glu Val Ile Lys Glu Leu
      405              410              415
Gln Thr Glu Lys Pro Lys Asp Tyr Thr Ile Leu Ile Lys Gly Ser Asn
      420              425              430
Gly Ile Lys Leu Ser Thr Val Val Glu Phe Leu
      435              440

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<210> 8843

<211> 287

<212> PRT

<213> B.fragilis

<400> 8843

Leu Phe Asn His Ile Pro Ile Met Lys Gln Ser Leu Pro Tyr Gln Pro

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1           5           10           15
Gly Pro Ile Gly Val Phe Asp Ser Gly Tyr Gly Gly Leu Thr Ile Leu
20           25           30
Ser Lys Ile Arg Glu Ala Leu Pro Glu Tyr Asp Tyr Ile Tyr Leu Gly
35           40           45
Asp Asn Ala Arg Thr Pro Tyr Gly Thr Arg Ser Phe Glu Ile Val Tyr
50           55           60
Glu Phe Thr Leu Gln Ala Val Asn Lys Leu Phe Glu Met Gly Cys His
65           70           75           80
Leu Val Ile Leu Ala Cys Asn Thr Ala Ser Ala Lys Ala Leu Arg Thr
85           90           95
Ile Gln Met Asn Asp Leu Pro Asn Ile Asp Pro Asp Arg Arg Val Leu
100          105          110
Gly Val Ile Arg Pro Thr Ala Glu Cys Ile Gly Ser Met Thr Gln Thr
115          120          125
Arg His Val Gly Ile Leu Ala Thr Ala Gly Thr Ile Lys Ser Glu Ser
130          135          140
Tyr Pro Leu Glu Val His Lys Leu Phe Glu Asp Ile Lys Val Ser Gly
145          150          155          160
Glu Ala Cys Pro Met Trp Val Pro Leu Val Glu Asn Asn Glu Ala Asn
165          170          175
Gly Glu Gly Ala Asp Phe Phe Ile Arg Lys Tyr Ile Asp Asn Leu Leu
180          185          190
Ala Lys Asp Arg Gln Ile Asp Thr Leu Val Leu Gly Cys Thr His Tyr
195          200          205
Pro Ile Leu Leu Pro Lys Ile Gln Lys Phe Ile Pro Gln Gly Val Lys
210          215          220
Val Val Ala Gln Gly Glu Tyr Val Ala Thr Ser Leu Lys Asp Tyr Leu
225          230          235          240
His Arg His Pro Glu Met Asp Met Lys Cys Thr Arg Glu Gly Lys Cys
245          250          255
Arg Phe Tyr Thr Thr Glu Ala Glu Asp Lys Phe Ile Glu Ser Ala Ser
260          265          270
Met Phe Leu Asn Glu Asn Ile Thr Val Gln Arg Ile Thr Leu Glu
275          280          285

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<210> 8844

<211> 459

<212> PRT

<213> B.fragilis

<400> 8844

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His Ile Leu Phe Met Thr Lys Lys Glu Arg Gly Asn Phe Gly Ser Lys
1           5           10           15
Leu Gly Val Ile Leu Ala Ser Ala Gly Ser Ala Val Gly Leu Gly Asn
20           25           30
Ile Trp Arg Phe Pro Tyr Glu Thr Gly Asn His Gly Gly Ala Ala Phe
35           40           45
Ile Leu Ile Tyr Leu Gly Cys Ile Leu Leu Leu Gly Leu Pro Ile Met
50           55           60
Ile Ala Glu Phe Leu Ile Gly Arg His Ser Gln Ala Asn Thr Ala Arg
65           70           75           80
Ala Tyr Gln Ile Leu Ala Pro Gly Thr Gln Trp Arg Trp Val Gly Arg
85           90           95
Met Gly Val Leu Ala Gly Phe Leu Ile Leu Gly Tyr Tyr Ser Val Val
100          105          110
Ala Gly Trp Thr Leu Glu Tyr Ile Phe Glu Ala Val Ser Asn Ser Phe
115          120          125
Ala Gly Lys Thr Pro Ala Glu Phe Ile Ser Ser Phe Gln Ser Phe Ser

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      130                      135                      140
Ser Asn Pro Trp Arg Pro Ala Leu Trp Leu Thr Leu Phe Leu Leu Ala
145                      150                      155                      160
Thr His Phe Ile Ile Val Lys Gly Val Glu Lys Gly Ile Glu Lys Ser
      165                      170                      175
Ser Lys Ile Met Met Pro Thr Leu Phe Ile Ile Ile Leu Ile Leu Val
      180                      185                      190
Gly Cys Ser Val Thr Leu Pro Gly Ala Gly Lys Gly Ile Glu Phe Leu
      195                      200                      205
Leu Lys Pro Asp Phe Ser Lys Val Asp Gly Asn Val Phe Leu Gly Ala
      210                      215                      220
Met Gly Gln Ala Phe Phe Ser Leu Ser Leu Gly Met Gly Cys Leu Cys
225                      230                      235                      240
Thr Tyr Ala Ser Tyr Phe Ser Lys Asn Thr Asn Leu Thr Arg Thr Ala
      245                      250                      255
Phe Ser Val Gly Ile Ile Asp Thr Phe Val Ala Val Leu Ala Gly Phe
      260                      265                      270
Ile Ile Phe Pro Ala Ala Phe Ser Val Gly Ile Gln Pro Asp Ala Gly
      275                      280                      285
Pro Ser Leu Ile Phe Ile Thr Leu Pro Asn Val Phe Gln Gln Ala Phe
      290                      295                      300
Ser Gly Ile Pro Ile Leu Ala Tyr Ile Phe Ser Val Met Phe Tyr Val
305                      310                      315                      320
Leu Leu Ala Leu Ala Ala Leu Thr Ser Thr Ile Ser Leu His Glu Val
      325                      330                      335
Val Thr Ala Tyr Leu His Glu Glu Phe Asn Phe Thr Arg Gly Lys Ala
      340                      345                      350
Ala Arg Leu Val Thr Thr Gly Cys Ile Leu Leu Gly Ile Leu Cys Ser
      355                      360                      365
Leu Ser Leu Gly Val Thr Lys Glu Phe Thr Ile Phe Gly Leu Gly Met
      370                      375                      380
Phe Asp Leu Phe Asp Phe Val Thr Ala Lys Leu Met Leu Pro Leu Gly
385                      390                      395                      400
Gly Leu Leu Ile Ser Ile Phe Thr Gly Trp Tyr Leu Asp Lys Lys Leu
      405                      410                      415
Val Trp Ser Glu Ile Thr Asn Asn Gly Thr Leu Lys Val Pro Thr Tyr
      420                      425                      430
Lys Leu Ile Phe Ile Leu Lys Tyr Val Ala Pro Ile Ala Ile Ser
      435                      440                      445
Val Ile Phe Ile Asn Glu Leu Gly Leu Leu Lys
450                      455

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<210> 8845

<211> 1121

<212> PRT

<213> B.fragilis

<400> 8845

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Lys Thr Lys Gln Leu Asn His Leu Ser Phe Met Asn Glu Asp Arg Lys
1      5      10      15
Lys Arg Gly Leu Ala Asn Ser Asn Leu Leu Ile Ala Met Ala Ile Thr
      20      25      30
Ala Leu Ile Ile Gly Ser Ser Asn Ala Met Ala Asn Gln Thr Ala Ser
      35      40      45
Gly Ser Ser Tyr Lys Val Thr Glu Gln Met Gln Ile Gln Thr Val Thr
      50      55      60
Gly Val Val Val Asp Ala Asn Gly Glu Pro Ile Ile Gly Ala Ser Val
      65      70      75      80
Val Glu Lys Gly Thr Thr Asn Gly Ile Val Thr Asp Met Asp Gly Lys

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Arg	Asp	Asn	Ser	Tyr	Ala	Leu	Asn	Val	Phe	Ala	Asn	Tyr	Glu	Leu	Thr	565	570	575
Val	Ala	Lys	Asp	His	His	Phe	Asn	Phe	Met	Ile	Gly	Ala	Asn	Ala	Glu	580	585	590
Glu	Gly	Glu	Tyr	Gln	Asn	His	Trp	Ser	Gln	Arg	Lys	Gly	Leu	Leu	Asp	595	600	605
Asp	Lys	Leu	Pro	Glu	Phe	Asn	Leu	Ala	Thr	Gly	Asp	Gln	Thr	Val	Gly	610	615	620
Gly	Thr	His	Asn	Glu	Trp	Gly	Thr	Ala	Gly	Trp	Phe	Gly	Arg	Ile	Asn	625	630	635
Tyr	Asp	Tyr	Asn	Gly	Ile	Trp	Leu	Leu	Glu	Leu	Asn	Gly	Arg	Tyr	Asp	645	650	655
Gly	Ser	Ser	Lys	Phe	Pro	Ser	Ser	Asp	Arg	Trp	Ala	Phe	Phe	Pro	Ser	660	665	670
Gly	Ser	Val	Gly	Tyr	Arg	Ile	Ser	Glu	Glu	Lys	Phe	Phe	Glu	Pro	Ile	675	680	685
Lys	Lys	Ile	Val	Ser	Asn	Thr	Lys	Ile	Arg	Ala	Ser	Tyr	Gly	Glu	Ile	690	695	700
Gly	Asn	Gln	Ala	Val	Gly	Ser	Asn	Met	Tyr	Ile	Ser	Thr	Val	Ser	Lys	705	710	715
Arg	Thr	Asp	Gly	Asn	Thr	His	Trp	Leu	Asn	Gly	Ser	Asn	Lys	Val	Val	725	730	735
Ala	Tyr	Asp	Leu	Pro	Ser	Leu	Val	Ser	Pro	Thr	Leu	Lys	Trp	Glu	Arg	740	745	750
Ile	Gln	Thr	Leu	Asp	Ile	Gly	Gly	Asp	Phe	Gly	Phe	Phe	Asn	Asn	Glu	755	760	765
Leu	Asn	Ile	Ser	Phe	Asp	Trp	Tyr	Gln	Arg	Thr	Thr	Lys	Asp	Met	Leu	770	775	780
Ala	Pro	Gly	Gln	Thr	Met	Pro	Asp	Val	Leu	Gly	Ala	Gly	Ala	Pro	Lys	785	790	795
Ile	Asn	Ala	Gly	Thr	Leu	Arg	Thr	Arg	Gly	Trp	Glu	Leu	Ser	Ile	Asp	805	810	815
Trp	Arg	His	His	Phe	Asn	Glu	Ile	Asn	Val	Tyr	Ala	Asn	Ala	Ser	Ile	820	825	830
Gly	Asp	Phe	Lys	Thr	Val	Ile	Thr	Lys	Trp	Asp	Asn	Asp	Ser	Gln	Leu	835	840	845
Leu	Asn	Glu	Asn	Tyr	Ser	Gly	Lys	Val	Tyr	Gly	Asp	Ile	Trp	Gly	Phe	850	855	860
Glu	Thr	Asp	Arg	Tyr	Phe	Thr	Lys	Asp	Asp	Phe	Asn	Ala	Asp	Gly	Ser	865	870	875
Tyr	Lys	Glu	Gly	Ile	Ala	Ser	Gln	Lys	Lys	Leu	Glu	Gln	Asp	Gly	Phe	885	890	895
Val	Tyr	Gly	Pro	Gly	Asp	Ile	Lys	Phe	Lys	Asp	Leu	Asn	Asn	Asp	Lys	900	905	910
Glu	Ile	Asn	Gly	Gly	Glu	Gly	Thr	Val	Lys	Asp	His	Gly	Asp	Leu	Lys	915	920	925
Val	Ile	Gly	Asn	Thr	Thr	Pro	Arg	Tyr	Gln	Tyr	Gly	Phe	Arg	Leu	Gly	930	935	940
Gly	Glu	Trp	Lys	Gly	Ile	Asp	Ile	Asp	Met	Phe	Phe	Gln	Gly	Val	Gly	945	950	955
Lys	Cys	Asp	Ala	Trp	Thr	Gln	Ser	Ala	Phe	Val	Met	Pro	Met	Met	Arg	965	970	975
Gly	Ala	Asp	Ala	Ile	Tyr	Ala	Asn	Gln	Ala	Asn	Tyr	Trp	Thr	Asp	Glu	980	985	990
Asn	Pro	Asp	Pro	Asn	Ala	Asp	Phe	Pro	Arg	Met	Trp	Pro	Gly	Asn	Ala	995	1000	1005
Gly	Lys	Gly	Thr	Val	Ser	Val	Leu	Asp	Leu	Gly	Asn	His	Asn	Phe	Tyr	1010	1015	1020
Pro	Gln	Ser	Lys	Tyr	Leu	Val	Asn	Met	Ala	Tyr	Leu	Arg	Phe	Lys	Asn			

4921

1025		1030		1035		1040
Leu Thr Ile Gly Tyr	Thr Leu Pro Lys Asp Trp Thr Arg Lys Val Tyr					
	1045		1050		1055	
Met Asp Lys Val Arg Val Tyr Phe Ser Ala Asn Asn Ile Cys Glu Leu						
	1060		1065		1070	
Ile Asn Lys Ser Asn Ala Pro Val Asp Pro Glu Val Asn Thr Ser Glu						
	1075		1080		1085	
Ala Ile Ala Asn Gly Gly Ser Ser Asp Tyr Gly Asn Gly Thr Trp Gly						
	1090		1095		1100	
Arg Val Asp Pro Met Tyr Arg Thr Val Ser Phe Gly Leu Gln Val Thr						
1105	1110		1115		1120	
Phe						

<210> 8846
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 8846															
Thr Met Trp Gln Lys Pro Trp Gly Tyr Lys Glu Gly Phe Ala Ile Cys															
1		5					10						15		
Gly Gly Leu Phe Leu Thr Gly Thr Phe Leu Gln Ile Thr Ile Gly Lys															
	20					25					30				
Cys Glu Leu Ser Ile Leu Ser Tyr Pro Met Asn Val Cys Val Gly Val															
	35					40					45				
Leu Tyr Leu Val Ile Leu Leu Leu Ile Tyr Ala Phe Ser Gln Lys Ser															
	50					55				60					
Tyr Phe Ile Arg Trp Met Gly Ser Cys Gln Ala Ala Val Ser Ser Met															
65					70				75					80	
Val Ser Val Ala Met Leu Thr Val Val Met Gly Leu Ile Arg Gln Val															
					85				90					95	
Lys Ser Asp Val Pro Leu Leu Gly Ala Glu Ser Trp Leu Gly Phe Ser															
	100						105						110		
Gln Met Leu Ser Ala Cys Ser Phe Val Leu Leu Phe Leu Trp Met Ile															
	115						120						125		
Thr Met Leu Arg Leu Thr Thr Ile Arg Arg Ile His His Leu Arg Leu															
	130						135					140			
Cys Asp Ile Pro Phe Val Leu Asn His Leu Gly Thr Val Pro Cys Thr															
145					150				155						160
Asp Pro Cys Tyr Leu Trp Val Met Pro Lys Trp Asn Val Cys Gly															
	165							170						175	

<210> 8847
 <211> 893
 <212> PRT
 <213> B.fragilis

<400> 8847															
Phe Val Val Lys Thr Arg Gly Lys Phe Asp Phe Met Ser Glu Glu Asn															
1		5					10						15		
Asn Glu Ile Thr Glu Gly His Ser Asp Tyr Lys Pro Ala Asp Ser His															
	20						25						30		
Asn Glu Ser Ile Lys His Gln Leu Thr Gly Met Tyr Gln Asn Trp Phe															
	35						40						45		
Leu Asp Tyr Ala Ser Tyr Val Ile Leu Glu Arg Ala Val Pro His Ile															
	50						55				60				
Asn Asp Gly Leu Lys Pro Val Gln Arg Arg Ile Leu His Ser Met Lys															
65					70				75					80	

Arg	Met	Asp	Asp	Gly	Arg	Tyr	Asn	Lys	Val	Ala	Asn	Ile	Val	Gly	His
				85					90					95	
Thr	Met	Gln	Phe	His	Pro	His	Gly	Asp	Ala	Ser	Ile	Gly	Asp	Ala	Leu
				100				105					110		
Val	Gln	Leu	Gly	Gln	Lys	Asp	Leu	Leu	Val	Asp	Cys	Gln	Gly	Asn	Trp
				115			120					125			
Gly	Asn	Ile	Leu	Thr	Gly	Asp	Gly	Ala	Ala	Ala	Pro	Arg	Tyr	Ile	Glu
				130			135				140				
Ala	Arg	Leu	Ser	Lys	Phe	Ala	Leu	Asp	Val	Val	Phe	Asn	Pro	Lys	Thr
145					150					155					160
Thr	Glu	Trp	Lys	Leu	Ser	Tyr	Asp	Gly	Arg	Asn	Lys	Glu	Pro	Ile	Thr
				165					170					175	
Leu	Pro	Val	Lys	Phe	Pro	Leu	Leu	Leu	Ala	Gln	Gly	Val	Glu	Gly	Ile
				180				185					190		
Ala	Val	Gly	Leu	Ser	Ser	Lys	Ile	Leu	Pro	His	Asn	Phe	Asn	Glu	Leu
				195			200					205			
Cys	Asp	Ala	Ser	Ile	Ser	Tyr	Leu	Arg	Asn	Glu	Glu	Phe	Lys	Leu	Tyr
				210		215					220				
Pro	Asp	Phe	Gln	Thr	Gly	Gly	Ser	Ile	Asp	Val	Ser	Lys	Tyr	Asn	Asp
225					230					235					240
Gly	Glu	Arg	Gly	Gly	Ala	Val	Lys	Ile	Arg	Ser	Lys	Ile	Asn	Lys	Val
				245					250					255	
Asp	Asn	Lys	Thr	Leu	Ala	Ile	Thr	Glu	Ile	Pro	Tyr	Gly	Arg	Thr	Thr
				260				265					270		
Thr	Ser	Val	Ile	Asp	Ser	Ile	Leu	Lys	Ala	Val	Asp	Lys	Gly	Lys	Ile
				275			280					285			
Lys	Ile	Arg	Lys	Val	Asp	Asp	Asn	Thr	Ala	Ala	Asn	Val	Glu	Ile	Leu
				290			295				300				
Val	His	Leu	Ala	Pro	Gly	Thr	Ser	Ser	Asp	Lys	Thr	Ile	Asp	Ala	Leu
305					310					315					320
Tyr	Ala	Phe	Thr	Asp	Cys	Glu	Val	Ser	Ile	Ser	Pro	Asn	Cys	Cys	Val
				325					330					335	
Ile	Asp	Asp	Gln	Lys	Pro	His	Phe	Leu	Thr	Ile	Ser	His	Val	Leu	Arg
				340				345					350		
Lys	Ser	Ala	Asp	Asn	Thr	Leu	Ser	Leu	Leu	Arg	Gln	Glu	Leu	Glu	Ile
				355			360					365			
Lys	Lys	Asp	Glu	Leu	Gln	Glu	Asn	Leu	His	Phe	Ala	Ser	Leu	Glu	Lys
				370			375				380				
Ile	Phe	Ile	Glu	Glu	Arg	Ile	Tyr	Lys	Asp	Lys	Glu	Phe	Glu	Gln	Ser
385					390					395					400
Lys	Asp	Met	Asp	Ala	Ala	Cys	Glu	His	Ile	Asp	Arg	Arg	Leu	Thr	Pro
				405					410					415	
Phe	Tyr	Ser	Gln	Phe	Ile	Arg	Glu	Val	Thr	Lys	Asp	Asp	Ile	Leu	Arg
				420				425					430		
Leu	Met	Glu	Ile	Lys	Met	Gly	Arg	Ile	Leu	Lys	Phe	Asn	Ser	Asp	Lys
				435			440					445			
Ala	Glu	Glu	Ala	Ile	Ala	Arg	Met	Asn	Glu	Asp	Ile	Ala	Glu	Ile	Asn
				450			455				460				
Asn	His	Leu	Ala	Asn	Ile	Val	Glu	Tyr	Thr	Ile	Gln	Trp	Tyr	Arg	Met
465					470					475					480
Leu	Lys	Glu	Lys	Tyr	Gly	Lys	Asn	Phe	Pro	Arg	Arg	Thr	Glu	Leu	Arg
				485					490					495	
Asn	Phe	Asp	Thr	Ile	Glu	Ala	Ala	Lys	Val	Val	Glu	Ala	Asn	Glu	Lys
				500				505					510		
Leu	Tyr	Ile	Asn	Arg	Glu	Glu	Gly	Phe	Ile	Gly	Thr	Ser	Leu	Lys	Lys
				515			520					525			
Asp	Glu	Phe	Val	Ala	Cys	Cys	Ser	Asp	Ile	Asp	Asp	Val	Ile	Ile	Phe
				530			535				540				
Tyr	Arg	Asp	Gly	Arg	Tyr	Met	Val	Thr	Pro	Val	Ala	Asp	Lys	Lys	Phe

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545          550          555          560
Val Gly Lys Asn Val Ile Tyr Val Asn Val Phe Lys Lys Asn Asp Lys
          565          570          575
Arg Thr Ile Tyr Asn Val Ala Tyr Arg Asp Gly Ala Glu Gly Thr His
          580          585          590
Tyr Ile Lys Arg Phe Ala Val Thr Ser Ile Val Arg Asp Arg Glu Tyr
          595          600          605
Asp Val Thr Gln Gly Lys Pro Asp Ser Arg Ile Ser Tyr Phe Ser Ala
          610          615          620
Asn Pro Asn Gly Glu Ala Glu Ile Ile Lys Val Thr Leu Lys Pro Asn
625          630          635          640
Pro Arg Val Arg Arg Ile Ile Phe Glu Arg Asp Phe Ser Glu Val Thr
          645          650          655
Ile Arg Ser Arg Gln Ser Gln Gly Val Ile Leu Thr Arg Leu Pro Val
          660          665          670
His Lys Ile Val Leu Lys Gln Arg Gly Gly Ser Thr Leu Gly Gly Arg
          675          680          685
Lys Val Trp Phe Asp Arg Asp Val Leu Arg Leu Asn Tyr Asp Gly Arg
          690          695          700
Gly Glu Tyr Leu Gly Glu Phe Gln Ser Asp Asp Asn Ile Leu Val Val
705          710          715          720
Leu Asn Thr Gly Glu Phe Tyr Thr Ser Asn Phe Asp Leu Ser Asn His
          725          730          735
Tyr Glu Asp Asn Val Ser Ile Val Glu Lys Phe Asp Pro Asn Lys Ile
          740          745          750
Trp Thr Val Ala Leu Tyr Asp Ala Asp Gln Gln Asn Tyr Pro Tyr Leu
          755          760          765
Lys Arg Phe Cys Phe Glu Ala Thr Thr Arg Lys Gln Asn Tyr Leu Gly
          770          775          780
Glu Asn Lys His Asn Arg Leu Ile Leu Met Thr Asp Glu Tyr Tyr Pro
785          790          795          800
Arg Leu Glu Ile Ile Phe Gly Gly His Asp Ser Phe Arg Asp Pro Val
          805          810          815
Val Val Asp Ala Glu Glu Phe Ile Ala Val Lys Gly Phe Lys Ala Lys
          820          825          830
Gly Lys Arg Leu Thr Thr Tyr Thr Val Glu Thr Ile Asn Glu Leu Glu
          835          840          845
Pro Thr Arg Phe Pro Asp Pro Pro Gln Asn Asn Glu Asp Asp Thr
          850          855          860
Gly Glu Glu Pro Glu Asn Leu Asp Pro Asp Ser Asp Lys Thr Glu Asn
865          870          875          880
Asp Ile Leu Asp Glu Met Thr Gly Gln Met Lys Leu Phe
          885          890

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<210> 8848

<211> 111

<212> PRT

<213> B.fragilis

<400> 8848

```

Pro Phe Gly Lys His Thr Leu Tyr Glu Met Ile Val Phe Asn Gln Cys
1          5          10          15
Pro Phe Arg Ser Cys Arg Thr Thr Phe Arg Asn Lys Phe His Phe Ala
          20          25          30
Ala Phe Leu Ile Trp Ile Gln Ile Tyr Asn Ile Phe Cys Asn Leu Ile
          35          40          45
Cys Phe Asp Arg Lys Val Phe Ser Tyr Gln Ile Asn Ala Phe Gly Asn
          50          55          60
Val Val Pro Ser Leu Asn Ala Cys Ala Glu Gln Ser Phe Val Phe Ile

```

65					70					75				80	
Leu	Val	Ser	Asp	Leu	Ile	Lys	Ser	Phe	Leu	Phe	Asn	Arg	Leu	Tyr	Glu
				85					90					95	
Val	Tyr	Lys	Lys	Lys	Ile	Ser	Ala	Gly	Leu	Thr	Thr	Trp	Leu	Arg	
			100					105					110		

<210> 8849

<211> 839

<212> PRT

<213> B.fragilis

<400> 8849

Gly	Arg	Pro	Lys	Lys	Tyr	Glu	Ile	Ala	Asp	Ile	Lys	Val	Glu	Gly	Val
1				5					10				15		
Lys	Asn	Tyr	Glu	Asp	Tyr	Val	Leu	Ile	Gly	Leu	Ser	Gly	Leu	Ser	Val
			20				25					30			
Gly	Gln	Thr	Ile	Thr	Val	Pro	Gly	Asp	Glu	Ile	Thr	Gly	Ala	Ile	Lys
		35				40					45				
Arg	Tyr	Trp	Arg	His	Gly	Leu	Phe	Ser	Asn	Val	Ser	Ile	Thr	Ala	Glu
	50				55					60					
Lys	Ile	Glu	Gly	Asn	Lys	Ile	Trp	Leu	Lys	Ile	Thr	Leu	Ala	Gln	Arg
65				70					75					80	
Pro	Arg	Ile	Ser	Asp	Ile	Arg	Tyr	His	Gly	Val	Lys	Lys	Ser	Glu	Arg
				85					90					95	
Glu	Asp	Leu	Gln	Thr	Lys	Leu	Gly	Met	Ile	Lys	Gly	Ser	Gln	Ile	Thr
		100					105						110		
Pro	Asn	Leu	Val	Asp	Arg	Ala	Lys	Val	Leu	Ser	Lys	Arg	Tyr	Phe	Asp
		115				120						125			
Asp	Lys	Gly	Phe	Lys	Asn	Ala	Glu	Ile	Thr	Ile	Thr	Gln	Arg	Asp	Asp
	130				135						140				
Pro	Ala	Asn	Glu	Asn	Gln	Val	Leu	Val	Asp	Ile	Asp	Ile	Asp	Lys	Lys
145				150					155					160	
Glu	Lys	Val	Lys	Val	His	Ala	Ile	Thr	Phe	Ala	Gly	Asn	His	Ala	Ile
				165				170					175		
Lys	Thr	Ser	Lys	Leu	Lys	Arg	Val	Met	Lys	Lys	Thr	Asn	Glu	Lys	Gly
		180					185						190		
Lys	Leu	Leu	Asn	Leu	Phe	Arg	Thr	Lys	Lys	Phe	Val	Asn	Glu	Lys	Tyr
	195					200					205				
Glu	Glu	Asp	Lys	Gln	Leu	Ile	Ile	Asp	Lys	Tyr	Asn	Glu	Leu	Gly	Tyr
	210			215						220					
Arg	Asp	Ala	Arg	Ile	Val	Lys	Asp	Ser	Val	Ser	Lys	Phe	Asp	Asp	Lys
225				230					235					240	
Thr	Val	Asp	Val	Phe	Ile	Glu	Leu	Glu	Glu	Gly	Asp	Lys	Tyr	Tyr	Leu
			245					250					255		
Arg	Asn	Val	Thr	Trp	Val	Gly	Asn	Thr	Leu	Tyr	Pro	Ser	Glu	Gln	Leu
		260					265						270		
Asn	Tyr	Met	Leu	Arg	Met	Lys	Lys	Gly	Asp	Val	Tyr	Asn	Gln	Lys	Leu
	275				280							285			
Leu	Asn	Glu	Arg	Leu	Ser	Thr	Asp	Glu	Asp	Ala	Ile	Gly	Asn	Leu	Tyr
	290				295					300					
Tyr	Asn	Asn	Gly	Tyr	Leu	Phe	Tyr	Thr	Leu	Asp	Pro	Val	Glu	Val	Asn
305				310					315					320	
Ile	Asp	Asn	Asp	Ser	Ile	Asp	Leu	Glu	Met	Arg	Ile	Phe	Glu	Gly	Arg
		325						330					335		
Gln	Ala	Ser	Ile	Asn	Lys	Ile	Lys	Ile	Asn	Gly	Asn	Asp	Arg	Leu	Tyr
		340				345						350			
Glu	Asn	Val	Val	Arg	Arg	Glu	Leu	Arg	Thr	Arg	Pro	Gly	Glu	Leu	Phe
	355					360					365				
Ser	Arg	Glu	Asp	Leu	Met	Arg	Ser	Met	Arg	Glu	Ile	Gln	Gln	Met	Gly

370	375	380
His Phe Asp Pro Glu	Asn Ile Lys Pro Asp	Ile Gln Pro Asp Pro Val
385	390	395
Asn Gly Thr Val Asp	Ile Ala Tyr Asp	Leu Val Ser Lys Ala Asn Asp
	405	410
Gln Val Glu Phe Ser	Ala Gly Trp Gly	Gln Thr Gly Val Ile Gly Lys
	420	425
Leu Ser Leu Lys Phe Thr	Asn Phe Ser Leu	Ala Asn Leu Leu His Pro
	435	440
Gly Glu Asn Tyr Arg Gly	Ile Leu Pro Gln	Gly Asp Gly Gln Thr Leu
	450	455
Thr Ile Ser Gly Gln Thr	Asn Ala Gln Tyr	Tyr Gln Gln Tyr Ser Ile
465	470	475
Ser Phe Phe Asp Pro Trp	Phe Gly Gly Lys	Arg Pro Asn Ser Phe Ser
	485	490
Leu Ser Ala Phe Phe Ser	Val Gln Thr Asp	Ile Ser Ser Arg Tyr Tyr
	500	505
Asn Ser Ser Tyr Tyr Asn	Asn Tyr Tyr Asn	Ser Tyr Tyr Ser Gly Leu
	515	520
Gly Gly Tyr Gly Met Tyr	Asn Tyr Gly Asn	Tyr Asn Asn Tyr Glu Asn
	530	535
Tyr Tyr Asp Pro Asp Lys	Ser Ile Lys Met	Trp Gly Leu Ser Ala Gly
545	550	555
Trp Gly Lys Arg Leu Asn	Trp Pro Asp Asp	Tyr Phe Gln Leu Ser Ala
	565	570
Glu Leu Ser Tyr Gln Arg	Tyr Ile Leu Lys	Asp Trp Gln Tyr Phe Pro
	580	585
Val Thr Asn Gly Lys Cys	Asn Asp Leu Ser	Ile Gly Leu Thr Leu Ala
	595	600
Arg Ala Ser Tyr Asp Asn	Pro Ile Tyr Pro	Arg Ser Gly Ser Asp Phe
	610	615
Ser Leu Ser Val Gln Phe	Thr Pro Pro Tyr	Ser Leu Phe Asp Gly Val
625	630	635
Asp Tyr Ser Lys Tyr Asn	Glu Tyr Asn Gln	Asn Asp Met Asn Lys Met
	645	650
His Lys Trp Val Glu Tyr	His Lys Trp Lys	Phe Lys Ala Lys Thr Tyr
	660	665
Ile Pro Leu Leu Asn Pro	Thr Val Lys Lys	Thr Pro Val Leu Met
	675	680
Thr Arg Val Glu Phe Gly	Ile Leu Gly His	Tyr Asn Lys Tyr Lys Lys
	690	695
Ser Pro Phe Gly Thr Phe	Asp Val Gly Gly	Asp Gly Met Thr Gly Tyr
705	710	715
Ser Ser Tyr Ala Thr Glu	Ser Val Ala Leu	Arg Gly Tyr Glu Asn Ser
	725	730
Ser Leu Thr Pro Tyr Arg	Gly Gln Glu Gly	Tyr Ala Tyr Thr Arg Ile
	740	745
Gly Phe Glu Leu Arg Tyr	Pro Leu Met Leu	Glu Thr Ser Thr Asn Ile
	755	760
Tyr Ala Leu Thr Phe Leu	Glu Ala Gly Asn	Ala Trp His Asp Val Lys
	770	775
Asn Phe Asn Pro Phe Asp	Leu Lys Arg Ser	Ala Gly Val Gly Val Arg
785	790	795
Ile Phe Leu Pro Met Ile	Gly Met Met Gly	Ile Asp Trp Ala Tyr Gly
	805	810
Phe Asp Lys Val Leu Gly	Asp Lys Ser Ala	Gly Gly Ser Arg Phe His
	820	825
Phe Val Leu Gly Gln Glu	Phe	
	835	

<210> 8850
 <211> 297
 <212> PRT
 <213> B.fragilis

<400> 8850

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His Lys Pro Lys Ile Lys Leu Arg Met Lys Val Lys Thr Ser Ile Leu
1      5      10      15
Leu Leu Leu Met Ile Ala Thr Ala Leu Pro Ser Phe Gly Gly Asn Gly
20      25      30
Asn Gly Asn Gly Thr Asp Ser Leu Gln Ala Thr Arg Tyr Val Thr Arg
35      40      45
Ala Thr Met Tyr Gly Val Gly Tyr Thr Asn Val Phe Asp Thr Tyr Leu
50      55      60
Ser Pro Gln Glu Tyr Lys Gly Ile Glu Phe Arg Ile Ser Arg Glu Thr
65      70      75      80
Met Arg Met Thr Thr Leu Gly Asp Gly Asn Val Ser Val Gln Asn Phe
85      90      95
Phe Gln Ala Asn Leu Ala Tyr Thr His Asn Arg Val Asp Asn Asn Asn
100     105     110
Thr Phe Ala Gly Leu Val Asn Trp Asn Tyr Gly Leu His Tyr Gln Phe
115     120     125
Arg Ile Thr Asp Asn Phe Lys Leu Leu Ala Gly Gly Met Gly Asp Phe
130     135     140
Asn Gly Gly Phe Val Tyr Asn Leu Arg Asn Thr Asn Asn Pro Ala Ser
145     150     155     160
Ala Arg Ala Tyr Ile Asn Leu Asp Ala Ser Gly Met Ala Ile Trp His
165     170     175
Thr Lys Ile Lys Asn Tyr Pro Leu Ala Leu Arg Tyr Gln Val Asn Leu
180     185     190
Pro Val Ile Gly Val Met Phe Ser Pro His Tyr Gly Gln Ser Tyr Tyr
195     200     205
Glu Ile Phe Thr Leu Gly His Ala Ser Gly Val Val Arg Phe Thr Ser
210     215     220
Leu His Asn Gln Pro Ala Leu Arg Gln Met Leu Ser Val Asp Phe Pro
225     230     235     240
Ile Arg Tyr Thr Lys Met Arg Leu Ser Tyr Leu Cys Asp Leu Gln Gln
245     250     255
Ser Lys Leu Asn Gly Ile Lys Thr His Thr Tyr Ser Gln Val Phe Met
260     265     270
Val Gly Phe Val His Asp Leu Phe Arg Ile Arg Asn Lys Asn Gly Thr
275     280     285
Pro Leu Pro Pro Ala Val Arg Ala Tyr
290     295

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<210> 8851
 <211> 702
 <212> PRT
 <213> B.fragilis

<400> 8851

```

Leu Asp Ala Lys Ile Lys Lys Asn Lys Cys Pro Asn Ala Ile Ser Thr
1      5      10      15
Leu Lys Ile Lys Leu Ser Leu Gln Leu Ser Arg Leu Leu Lys Asn Met
20      25      30
Ser Ser Lys Pro Tyr Arg His Phe Ile Ala Leu Leu Leu Val Leu Phe
35      40      45
Cys Ser Arg Phe Glu Ala Gln Ala Glu Asp Leu Phe Ala Lys Thr Asp

```

50	55	60
Ser Thr Leu Gln Gln Tyr Leu Ile Arg Cys Lys Ala Gln Ile Lys Asp		
65	70	75
Pro Asp Phe Leu Gln Thr Asn Asp Thr Leu Thr Arg Met Ala Gln Glu		80
	85	90
Lys Asn Asp Lys Arg Met Gln Val Ile Ala Val Ala Leu Lys Leu Asp		95
	100	105
Tyr Tyr Tyr Tyr Gln Asn Asn Pro Asp Ser Ile Leu Val Met Val Asp		110
	115	120
Arg Val Lys Lys Ile Ser Arg Arg Asn Asn Glu Leu Lys Tyr Phe Tyr		125
	130	135
Phe Ala Trp Gly Ser Arg Leu Ile Ile Tyr Tyr Ile Lys Gln His Gln		140
145	150	155
Thr Asn Thr Ala Ile Tyr Glu Ala Arg Lys Met Leu Gln Ser Ala Glu		160
	165	170
Ala Asp Asn Phe Ile Pro Gly Ile Val Gln Cys Tyr Arg Thr Leu Gly		175
	180	185
Thr Val Tyr Met Thr Gln Ser Asn Pro Lys Leu Ala Tyr Glu Asn Phe		190
	195	200
Arg Lys Gln Ile Ala Leu Ile Glu Glu Asn Glu Ile Glu Asp Ile Asn		205
	210	215
Leu Pro Thr Gln Tyr Ala Ser Leu Ala Gln Cys Ala Leu Glu Met His		220
225	230	235
Arg Pro Asp Glu Ala Leu Lys Ala Leu Glu Lys Gly Ser Lys Cys Thr		240
	245	250
Arg Ser Ser Tyr Gln Ile Phe Thr Val Gln Lys Ala Tyr Ile Leu Tyr		255
	260	265
Tyr Leu Glu Thr Lys Glu Tyr Glu Lys Ala Arg Lys Thr Leu Val Glu		270
	275	280
Leu Glu Gln Leu Phe Glu Lys Asp Lys Ser Leu Thr Leu Tyr Lys Ser		285
	290	295
Gly Leu Phe Tyr Ile Gln Ile Glu Tyr Tyr Arg Asn Thr Gly Gln Tyr		300
305	310	315
Arg Lys Ala Leu Asp Val Ile Glu Glu Ile Lys Asn Asp Ser Ser Ser		320
	325	330
Ile Asn Lys Tyr Leu Asp Tyr Thr Leu Thr Gln Lys Gln Gly Asp Ile		335
	340	345
Tyr Trp Glu Met Asn Gln Lys Ala Arg Ala Ala Gln Tyr Tyr Arg Asp		350
	355	360
Tyr Ile Leu Ala Thr Asp Ser Ile Arg Ser Gln Glu Ile Gln Asn Ser		365
	370	375
Thr Asn Glu Phe Tyr Thr Ile Met Glu Val Glu Gln Leu His Lys Glu		380
385	390	395
Lys Asn Glu Leu Leu Leu His Met Gln Glu Glu Lys Leu Gln Lys Ile		400
	405	410
Asn Ile Ala Leu Val Ser Leu Val Ile Ile Leu Val Ala Gly Thr Met		415
	420	425
Leu Leu Phe His Ile Ser Lys Leu Asn Lys Lys Leu Lys Arg Ser Glu		430
	435	440
Ala Lys Val Ile Gln Gln Asn Lys Glu Leu Val Glu Asn Gly Glu Glu		445
	450	455
Leu Arg Lys Ala Lys Glu Gln Ala Glu Asn Ala Ser Arg Met Lys Thr		460
465	470	475
Thr Phe Ile Gln Ser Met Ser His Glu Ile Arg Thr Pro Leu Asn Ser		480
	485	490
Ile Val Gly Phe Ser Gln Val Leu Ser Asn Tyr Phe Lys Glu Glu Asp		495
	500	505
Asn Asp Glu Ile Arg Glu Phe Ala Ser Ile Ile Glu Ile Ser Ser Ser		510
	515	520
		525

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Asn Leu Leu Arg Leu Ile Asn Asp Val Leu Asp Ile Ser Tyr Leu Asp
 530                      535                      540
Gln Ser Glu Ile Leu Pro Tyr Asp Lys Pro Glu Asp Ile Asn Asn Cys
545                      550                      555                      560
Cys Leu Leu Ser Ile Glu Arg Thr Arg Asn Ser Ile Lys Lys Glu Val
                      565                      570                      575
Ser Leu Arg Phe Glu Pro Ser Cys Gly Pro Leu Met Ile Leu Thr Asn
                      580                      585                      590
Pro Glu Arg Val Ala Gln Ile Leu Thr His Leu Leu His Asn Ala Ile
                      595                      600                      605
Lys Phe Thr Asp Lys Gly Asn Ile Thr Leu Ala Tyr Thr Ile Ser Pro
610                      615                      620
Thr Glu Lys Gln Ile Val Tyr Thr Val Thr Asp Thr Gly Lys Gly Ile
625                      630                      635                      640
Pro Val Glu Gln Gln Glu Tyr Val Phe Glu Arg Phe Ala Lys Leu Asn
                      645                      650                      655
Asp Phe Ser Gln Gly Thr Gly Leu Gly Leu Pro Ile Cys Arg Ile Ile
                      660                      665                      670
Ala Glu Lys Leu Gly Gly Ser Leu Ile Ile Asp Lys Thr Tyr Thr Lys
675                      680                      685
Gly Cys Arg Phe Ile Leu Thr Leu Pro Leu Ile Lys Ala Asp
690                      695                      700

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<210> 8852
 <211> 89
 <212> PRT
 <213> B.fragilis

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<400> 8852
Val Ile Asn Lys Leu Arg Ile Thr Thr Gly Gly Ile Asp Gly Thr Tyr
1      5      10      15
Ala Asp Val Arg Thr Ile Leu Arg Glu Ala Leu Ile Gly Arg Ala Thr
20     25     30
Gln Ile Ala Leu Ile His Asn His Pro Ser Gly His Ala Lys Pro Ser
35     40     45
Gln Glu Asp Lys Arg Leu Thr Gly Ala Ile Gln Lys Ala Ser Gln Thr
50     55     60
Met Asn Ile Thr Leu Val Asp His Val Ile Val Cys Asp Gly Cys Phe
65     70     75     80
Tyr Ser Phe Ala Asp Glu Gly Leu Ile
85

```

<210> 8853
 <211> 141
 <212> PRT
 <213> B.fragilis

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<400> 8853
Ile Met Asn Lys Gln Lys Leu Asn Ile Lys Gln Trp Ser Lys Ala Asp
1      5      10      15
Arg Pro Arg Glu Lys Met Met Ala Lys Gly Ser Glu Ala Leu Ser Asp
20     25     30
Ala Glu Leu Leu Gly Ile Leu Ile Gly Ser Gly Asn Thr Glu Glu Ser
35     40     45
Ala Val Glu Leu Met Arg Arg Ile Leu Ala Thr Cys Asp Asn Asn Leu
50     55     60
Asn Glu Leu Gly Lys Trp Glu Val Arg Asn Phe Ser Ser Phe Lys Gly
65     70     75     80
Met Gly Pro Ala Lys Ser Leu Thr Ile Met Ala Ala Leu Glu Leu Gly

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<210> 8854
<211> 184
<212> PRT
<213> B.fragilis
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<210> 8855
<211> 286
<212> PRT
<213> B.fragilis
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<400> 8855																
Ile	Lys	Asn	Lys	Asn	Met	Asn	Ser	Asn	Ile	Glu	Lys	Ser	Asp	Lys	Pro	
1				5					10					15		
Ser	Phe	Ile	Lys	Ile	Ser	Glu	Gln	Pro	Ser	Leu	Tyr	Asp	Asp	Leu	Glu	
			20					25					30			
Lys	Lys	Ser	Ile	Arg	Glu	Ile	Leu	Glu	Asp	Ile	Asn	Lys	Glu	Asp	Gln	
			35				40					45				
Lys	Val	Ala	Ile	Ala	Val	Gln	Lys	Ala	Ile	Pro	Gln	Ile	Glu	Lys	Leu	
	50					55					60					
Val	Thr	Gln	Ile	Val	Pro	Arg	Met	Lys	Gln	Gly	Gly	Arg	Ile	Phe	Tyr	
65					70					75					80	
Met	Gly	Ala	Gly	Thr	Ser	Gly	Arg	Leu	Gly	Val	Leu	Asp	Ala	Ser	Glu	
				85					90					95		
Ile	Pro	Pro	Thr	Phe	Gly	Met	Pro	Pro	Thr	Leu	Ile	Ile	Gly	Leu	Ile	
			100					105					110			

Ala Gly Gly Asp Thr Ala Leu Arg Asn Pro Val Glu Asn Ala Glu Asp
 115 120 125
 Asn Thr Ile Arg Gly Trp Glu Glu Leu Thr Glu His Asn Ile Asn Asp
 130 135 140
 Lys Asp Thr Val Ile Gly Ile Ala Ala Ser Gly Thr Thr Pro Tyr Val
 145 150 155 160
 Ile Gly Ala Met His Ala Ala Arg Glu His Gly Ile Leu Thr Gly Cys
 165 170 175
 Ile Thr Ser Asn Pro Asn Ser Pro Met Ala Ala Glu Ala Asp Ile Pro
 180 185 190
 Ile Glu Met Ile Val Gly Pro Glu Tyr Val Thr Gly Ser Ser Arg Met
 195 200 205
 Lys Ser Gly Thr Gly Gln Lys Met Ile Leu Asn Met Ile Thr Thr Ser
 210 215 220
 Val Met Ile Gln Leu Gly Arg Val Lys Gly Asn Lys Met Val Asn Met
 225 230 235 240
 Gln Leu Ser Asn Arg Lys Leu Val Asp Arg Gly Thr Arg Met Ile Ile
 245 250 255
 Glu Glu Leu Gly Leu Glu Tyr Asn Lys Ala Lys Ala Leu Leu Leu Met
 260 265 270
 His Gly Ser Val Lys Lys Ala Ile Asp Ala Tyr Lys Ala Gly
 275 280 285

<210> 8856

<211> 265

<212> PRT

<213> B.fragilis

<400> 8856

Met Asn Val Asn Arg Leu Leu Gly Ile Leu Ala Ile Leu Leu Leu Thr
 1 5 10 15
 Ala Ala Ser Ala Leu Tyr Ala Gln Lys Pro Val Lys Val Lys Gly Val
 20 25 30
 Gln Gly Arg Trp Gln Val Ser Asp Asp Ile Thr Leu Lys Gln Ala Glu
 35 40 45
 Glu Arg Ala Phe Met Glu Ala Lys Lys Ala Ala Leu Gln Lys Ala Gly
 50 55 60
 Val Met Glu Asn Val Trp Ser Val Phe Gly Gln Ile Thr Gln Glu Asp
 65 70 75 80
 Gly Gln Glu Leu His Glu Ala Tyr Ser Gln Met Asn Val Leu Ala Ile
 85 90 95
 Gly Gly Met Val Asn Val Thr Asn Lys Lys Val Glu Glu Val Trp Asp
 100 105 110
 Thr Asp Thr Arg Ser Leu Tyr Lys Val Val Thr Ile Asp Ala Glu Val
 115 120 125
 Arg Lys Glu Asp Lys Ser Asp Ser Ser Tyr Ala Leu Glu Val Lys Gly
 130 135 140
 Val Glu Thr Leu Tyr Arg Glu Gly Asp Val Phe His Cys Lys Leu Thr
 145 150 155 160
 Ile His Gly Thr Asp Ser Tyr Leu Lys Phe Phe Trp Phe Asp Ser Asn
 165 170 175
 Gly Gly Ala Leu Leu Tyr Pro Asn Ser Tyr Glu Pro Asn Thr Leu Leu
 180 185 190
 Lys Ala Gly Lys Glu Tyr Ala Ile Pro Phe Ser Asn Ala Val Asp Tyr
 195 200 205
 Arg Met Glu Lys Gln His Gly Lys Glu Ser Glu Lys Ile Asn Met Met
 210 215 220
 Met Val Ala Thr Lys Glu Asp Ile Pro Phe Thr Lys Glu Val Thr Tyr
 225 230 235 240

Gln Asn Val Leu Glu Trp Val Tyr Ser Ile Pro Ala Val Gln Arg Cys
 245 250 255
 Ala Phe Tyr Asp Met Val Leu Ile Lys
 260 265

<210> 8857
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8857
 Ser Met Lys Asn Ala Lys Ile Thr Ile Gly Leu Ile Gly Leu Leu Leu
 1 5 10 15
 Ile Gly Leu Val Ser Val Arg Lys Glu Gly Lys Val Gln Glu Ala Gly
 20 25 30
 Leu Leu Leu Gln Asn Val Glu Ala Leu Ala Thr Gly Glu Ser Phe Pro
 35 40 45
 Asp Gly Asp Ile Ala Cys Ile Gly Asp Gly Ser Val Asp Cys Pro Phe
 50 55 60
 Thr Tyr Leu Lys Val Glu Val Val Tyr Arg Glu Glu
 65 70 75

<210> 8858
 <211> 404
 <212> PRT
 <213> B.fragilis

<400> 8858
 Leu Asn Arg Lys Ser Asp Met Lys Val Leu Val Leu Asn Cys Gly Ser
 1 5 10 15
 Ser Ser Ile Lys Tyr Lys Leu Phe Asp Met Asp Ser Lys Glu Val Ile
 20 25 30
 Ala Gln Gly Gly Ile Glu Lys Ile Gly Leu Lys Asp Ser Phe Leu Lys
 35 40 45
 Leu Thr Leu Pro Asn Gly Glu Lys Lys Ile Leu Glu Lys Asp Ile Pro
 50 55 60
 Glu His Thr Val Gly Val Glu Phe Ile Leu Asn Thr Leu Val Ser Pro
 65 70 75 80
 Glu Tyr Gly Ala Ile Gln Ser Leu Glu Glu Ile Asn Ala Val Gly His
 85 90 95
 Arg Met Val His Gly Gly Glu Arg Phe Ser Lys Ser Val Leu Leu Thr
 100 105 110
 Lys Glu Val Leu Glu Ala Phe Ala Ala Cys Asn Asp Leu Ala Pro Leu
 115 120 125
 His Asn Pro Ala Asn Leu Lys Gly Val Asp Ala Ile Thr Ala Ile Leu
 130 135 140
 Pro Asn Val Pro Gln Ile Gly Val Phe Asp Thr Ala Phe His Gln Thr
 145 150 155 160
 Met Pro Glu His Ala Tyr Leu Tyr Ala Ile Pro Tyr Glu Leu Tyr Lys
 165 170 175
 Lys Tyr Gly Val Arg Arg Tyr Gly Phe His Gly Thr Ser His Arg Tyr
 180 185 190
 Val Ser Gln Arg Val Cys Glu Tyr Leu Gly Ile Lys Pro Glu Gly Leu
 195 200 205
 Lys Leu Ile Thr Cys His Ile Gly Asn Gly Gly Ser Ile Ala Ala Ile
 210 215 220
 Lys Asp Gly Lys Cys Ile Asp Thr Ser Met Gly Leu Thr Pro Leu Glu
 225 230 235 240
 Gly Leu Met Met Gly Thr Arg Ser Gly Asp Ile Asp Ala Gly Ala Val

245 250 255
 Thr Phe Ile Met Asp Lys Glu Gly Leu Thr Thr Thr Gly Ile Ser Asn
 260 265 270
 Leu Leu Asn Lys Lys Ser Gly Val Ala Gly Met Met Asn Gly Ser Ser
 275 280 285
 Asp Met Arg Asp Leu Glu Ala Val Ala Lys Gly Asp Pro Gln Ala
 290 295 300
 Ile Leu Thr Glu Gln Met Tyr Phe Tyr Arg Ile Lys Lys Tyr Ile Gly
 305 310 315 320
 Ala Tyr Ala Ala Ala Leu Gly Gly Val Asp Val Ile Leu Phe Thr Gly
 325 330 335
 Gly Val Gly Glu Asn Gln Ala Thr Cys Arg Ala Gly Val Cys Glu Gly
 340 345 350
 Leu Glu Phe Leu Gly Val Lys Leu Asp Pro Glu Lys Asn Lys Val Arg
 355 360 365
 Gly Glu Glu Ala Ile Ile Ser Thr Asp Asp Ser Arg Val Lys Val Val
 370 375 380
 Val Ile Pro Thr Asp Glu Glu Leu Leu Ile Ala Ser Asp Thr Met Ala
 385 390 395 400
 Ile Leu Asp Lys

<210> 8859

<211> 490

<212> PRT

<213> B.fragilis

<400> 8859

Ala Tyr Met Lys Ser Thr Ile Asn Cys Phe Ile Pro Tyr Ala Gly Ala
 1 5 10 15
 Val Gln Ala Glu Arg Thr Val Gln Gly Leu Gln Ala Thr Gly Leu Val
 20 25 30
 Lys Lys Ile Tyr Leu Leu Val Thr Ser Pro Ser Phe Asp Pro Leu Pro
 35 40 45
 Gly Cys Glu Leu Leu Tyr Val Asp Lys Leu Thr Asn Ser Ala Ser Met
 50 55 60
 Tyr Ala Ile Ala Thr Tyr Ser Asp Ala Ser Tyr Thr Leu Leu Tyr Thr
 65 70 75 80
 Lys Tyr Thr Ser Leu Glu Leu Gly Leu Phe Ala Leu Glu Arg Met Ile
 85 90 95
 His Ile Ala Glu Asp Ser Ala Ala Gly Met Val Tyr Ala Asp His Tyr
 100 105 110
 Gln Val Thr Glu Gly Lys Gln Ser Asn Ala Pro Val Ile Asp Tyr Gln
 115 120 125
 Phe Gly Ser Leu Arg Asp Asp Phe Asn Phe Gly Ser Val Leu Leu Phe
 130 135 140
 Lys Ala Ser Ala Leu Lys Glu Ala Ala Lys Arg Met Lys Ser Asp Tyr
 145 150 155 160
 Asp Phe Ala Gly Phe Tyr Asp Leu Arg Leu Lys Leu Ser Gln Lys Tyr
 165 170 175
 Pro Leu Val His Ile Asn Glu Tyr Leu Tyr Ser Glu Val Glu Asn Asp
 180 185 190
 Thr Arg Lys Ser Gly Glu Lys Ile Phe Asp Tyr Val Asp Pro Lys Asn
 195 200 205
 Arg Asp Arg Gln Ile Glu Met Glu Glu Ala Cys Thr Glu His Leu Gln
 210 215 220
 Glu Ile Gly Gly Tyr Leu Lys Pro Glu Phe Gln Lys Ile Glu Phe Asn
 225 230 235 240
 Thr Gly Asn Phe Pro Tyr Glu Ala Ser Val Ile Ile Pro Val Arg Asn

245 250 255
 Arg Ile Arg Thr Ile Arg Asp Ala Ile Arg Ser Val Leu Ser Gln Lys
 260 265 270
 Ala Asp Phe Lys Phe Asn Leu Ile Ile Asp Asn His Ser Thr Asp
 275 280 285
 Gly Thr Thr Glu Ala Ile Asp Glu Phe Lys Asp Asp Glu Arg Leu Ile
 290 295 300
 His Leu Ile Pro Glu Arg Asn Asp Leu Gly Ile Gly Gly Cys Trp Asn
 305 310 315 320
 Leu Gly Val His His Pro Leu Cys Gly Lys Phe Ala Val Gln Leu Asp
 325 330 335
 Ser Asp Asp Val Tyr Ala His Asp Gly Thr Leu Gln Val Met Val Asn
 340 345 350
 Ala Phe Tyr Glu Gln Asn Cys Ala Met Val Val Gly Thr Tyr Met Met
 355 360 365
 Thr Asn Phe Asp Met Asn Met Ile Ala Pro Gly Ile Ile Asp His Lys
 370 375 380
 Glu Trp Thr Pro Glu Asn Gly Arg Asn Asn Ala Leu Arg Ile Asn Gly
 385 390 395 400
 Leu Gly Ala Pro Arg Ala Phe Tyr Thr Pro Ile Leu Arg Glu Leu Lys
 405 410 415
 Val Pro Asn Thr Ser Tyr Gly Glu Asp Tyr Ala Leu Gly Leu Asn Phe
 420 425 430
 Ser Arg Gln Tyr Gln Ile Gly Arg Val Tyr Glu Val Val Tyr Leu Cys
 435 440 445
 Arg Arg Trp Asp Asp Asn Ser Asp Ala Ser Leu Asp Ile Val Lys Met
 450 455 460
 Asn Ala His Asn Leu Tyr Lys Asp Arg Ile Arg Thr Trp Glu Leu Gln
 465 470 475 480
 Ala Arg Ile Ala Leu Asn Lys Lys Gln Arg
 485 490

<210> 8860

<211> 233

<212> PRT

<213> B.fragilis

<400> 8860

Thr Gln Met Asn Tyr Leu Glu Asn Glu Phe Phe Leu Leu Ala Ile Thr
 1 5 10 15
 Phe Gly Ile Tyr Phe Phe Ala Lys Leu Leu Gln Lys Lys Thr Gly Ile
 20 25 30
 Leu Leu Leu Asn Pro Ile Leu Leu Thr Ile Ala Val Ile Ile Ile Phe
 35 40 45
 Leu Lys Leu Thr Asn Ile Ser Phe Glu Thr Tyr Asn His Gly Gly His
 50 55 60
 Leu Ile Glu Phe Trp Leu Lys Pro Ala Val Val Ala Leu Gly Val Pro
 65 70 75 80
 Leu Tyr Leu Gln Leu Glu Thr Ile Lys Lys Gln Leu Leu Pro Ile Ile
 85 90 95
 Leu Ser Gln Leu Ala Gly Cys Ile Val Gly Val Ile Ser Val Val Leu
 100 105 110
 Ile Ala Lys Leu Met Gly Ala Ser Gln Glu Val Ile Leu Ser Leu Ala
 115 120 125
 Pro Lys Ser Val Thr Thr Pro Ile Ala Met Glu Val Thr Lys Thr Leu
 130 135 140
 Gly Gly Ile Pro Ser Leu Thr Ala Ala Val Val Val Cys Val Gly Leu
 145 150 155 160
 Leu Gly Ala Val Leu Gly Phe Lys Thr Met Lys Ile Met His Val Gly

165 170 175
 Ser Pro Ile Ala Gln Gly Leu Ser Met Gly Thr Ala Ala His Ala Val
 180 185 190
 Gly Thr Ser Thr Ala Met Asp Ile Ser Ser Lys Tyr Gly Ala Tyr Ala
 195 200 205
 Ser Leu Gly Leu Thr Leu Asn Gly Ile Phe Thr Ala Leu Leu Thr Pro
 210 215 220
 Thr Ile Leu Arg Leu Leu Gly Ile Leu
 225 230

<210> 8861

<211> 341

<212> PRT

<213> B.fragilis

<400> 8861

Lys Gln Lys Lys Lys Met Lys Val Ala Ile Val Gly Val Ser Gly Ala
 1 5 10 15
 Val Gly Gln Glu Phe Leu Arg Val Leu Asp Glu Arg Asn Phe Pro Leu
 20 25 30
 Asp Glu Leu Val Leu Phe Gly Ser Lys Arg Ser Ala Gly Thr Lys Tyr
 35 40 45
 Thr Phe Arg Gly Lys Gln Ile Glu Val Lys Leu Leu Gln His Asn Asp
 50 55 60
 Asp Phe Lys Gly Val Asp Ile Ala Phe Thr Ser Ala Gly Ala Gly Thr
 65 70 75 80
 Ser Lys Glu Phe Glu Lys Thr Ile Thr Gln Tyr Gly Ala Val Met Ile
 85 90 95
 Asp Asn Ser Ser Ala Phe Arg Met Asp Ala Asp Val Pro Leu Val Val
 100 105 110
 Pro Glu Val Asn Ala Ala Asp Ala Lys Asp Arg Pro Arg Gly Val Ile
 115 120 125
 Ala Asn Pro Asn Cys Thr Thr Ile Gln Met Val Val Ala Leu Lys Ala
 130 135 140
 Ile Glu Glu Leu Ser His Ile Lys Thr Val His Val Ser Thr Tyr Gln
 145 150 155 160
 Ala Ala Ser Gly Ala Gly Ala Ala Ala Met Asp Glu Leu Tyr Glu Gln
 165 170 175
 Tyr Arg Gln Val Leu Ala Asn Glu Pro Val Thr Val Glu Lys Phe Ala
 180 185 190
 Tyr Gln Leu Ala Phe Asn Leu Ile Pro Gln Ile Asp Val Phe Thr Glu
 195 200 205
 Asn Gly Tyr Thr Lys Glu Glu Met Lys Met Tyr Asn Glu Thr Arg Lys
 210 215 220
 Ile Met His Ser Asp Val Lys Val Ser Ala Thr Cys Val Arg Val Pro
 225 230 235 240
 Ala Leu Arg Ala His Ser Glu Ser Ile Trp Val Glu Thr Glu Arg Pro
 245 250 255
 Ile Ser Ile Glu Glu Ala Arg Glu Ala Phe Ala Lys Gly Glu Gly Leu
 260 265 270
 Val Leu Gln Asp Asn Pro Ala Glu Lys Glu Tyr Pro Met Pro Leu Phe
 275 280 285
 Leu Ala Gly Lys Asp Pro Val Tyr Val Gly Arg Ile Arg Lys Asp Leu
 290 295 300
 Thr Asn Asp Cys Gly Leu Thr Phe Trp Ile Val Gly Asp Gln Ile Lys
 305 310 315 320
 Lys Gly Ala Ala Leu Asn Ala Val Gln Ile Ala Glu Tyr Leu Ile Lys
 325 330 335
 Glu Gly Asn Ile Gly

340

<210> 8862
 <211> 470
 <212> PRT
 <213> B.fragilis

<400> 8862

Ser	Met	Pro	Glu	Thr	Gly	Ser	Leu	Pro	His	Ile	Asp	Arg	Thr	His	Lys
1				5					10					15	
Thr	Thr	Ile	Met	Lys	Glu	Pro	Lys	Val	Gln	Val	Gly	Ile	Leu	Phe	Glu
			20					25					30		
Pro	Gln	Ile	Lys	Phe	Ile	Leu	Leu	Thr	Pro	Tyr	His	Ile	Asn	Gly	Glu
			35					40					45		
Glu	Val	Ser	Gly	Lys	Gln	Val	Val	Thr	Tyr	Asp	Asn	Gly	His	Ile	Leu
			50					55				60			
Trp	Gln	Gly	His	Ser	Tyr	Asp	Glu	Leu	Leu	Phe	Glu	Pro	Leu	His	Glu
65					70					75					80
Lys	Ser	Asp	Ala	Phe	Glu	Leu	Gln	Asp	Val	Thr	Ile	Gly	Ile	Asn	Phe
				85					90					95	
His	Trp	Glu	Arg	Lys	Glu	Asn	Gln	Arg	Phe	Ile	Gly	Ala	Leu	Lys	Ile
			100					105					110		
Ile	Val	Glu	Asn	Lys	Lys	Leu	Thr	Gly	Ile	Asn	Val	Ile	His	Val	Glu
			115					120					125		
Asp	Tyr	Leu	Thr	Ser	Val	Ile	Ser	Ser	Glu	Met	Ser	Ala	Thr	Ala	Ser
			130					135				140			
Leu	Glu	Leu	Leu	Lys	Ala	His	Ala	Val	Ile	Ser	Arg	Ser	Trp	Leu	Leu
145					150						155				160
Ala	Gly	Leu	Ser	Leu	Pro	Tyr	Ser	Lys	Asp	Arg	Glu	Lys	Ser	Asn	Thr
				165					170					175	
Thr	Pro	Glu	Lys	Val	Pro	Tyr	Ser	Thr	Ser	Ser	Phe	Pro	Pro	Leu	Ala
			180					185						190	
Gln	Glu	Ala	Glu	Asn	Lys	Ile	Leu	Ile	Arg	Trp	Tyr	Glu	Arg	Asp	Ala
			195					200					205		
His	Thr	His	Phe	Asp	Val	Cys	Ala	Asp	Asp	His	Cys	Gln	Arg	Tyr	Gln
			210				215				220				
Gly	Ile	Thr	Arg	Ala	Ser	Thr	Asp	Met	Val	Arg	Gln	Ala	Ile	Ser	Ala
225					230					235					240
Thr	Arg	Gly	Glu	Val	Leu	Met	Ser	Glu	Gly	Thr	Ile	Cys	Asp	Ala	Arg
				245					250					255	
Phe	Ser	Lys	Cys	Cys	Gly	Gly	Ala	Phe	Glu	Glu	Phe	Gln	Tyr	Cys	Trp
			260					265					270		
Glu	Asn	Ile	Arg	His	Pro	Tyr	Leu	Ser	Lys	Gln	Arg	Asp	Ser	Lys	Lys
			275				280					285			
Ala	Thr	Asp	Leu	Pro	Asp	Leu	Cys	Lys	Glu	Ala	Glu	Ala	Glu	Arg	Trp
290							295					300			
Ile	Arg	Thr	Ser	Pro	Glu	Ala	Phe	Cys	Asn	Thr	Lys	Asp	Lys	Lys	Val
305					310					315					320
Leu	Ser	Gln	Val	Leu	Asn	Asn	Tyr	Asp	Gln	Glu	Thr	Thr	Asp	Phe	Tyr
				325					330					335	
Arg	Trp	Lys	Val	Glu	Tyr	Glu	Gln	Glu	Glu	Leu	Ser	Lys	Leu	Ile	Leu
			340					345					350		
Lys	Arg	Ser	Gly	Ile	Asp	Tyr	Gly	Gln	Ile	Leu	Asp	Leu	Val	Pro	Val
			355				360					365			
Glu	Arg	Gly	Thr	Ser	Gly	Arg	Leu	Val	Arg	Leu	Lys	Ile	Ile	Gly	Thr
			370				375				380				
Lys	Arg	Thr	Met	Ile	Ile	Gly	Lys	Glu	Leu	Glu	Ile	Arg	Arg	Thr	Leu
385					390					395					400
Ser	Pro	Ser	His	Leu	Tyr	Ser	Ser	Ala	Phe	Ile	Ile	Asp	Lys	Val	Asn

405 410 415
 Val Thr Asn Gly Ile Pro Asp Arg Phe Ile Leu Thr Gly Ala Gly Trp
 420 425 430
 Gly His Gly Val Gly Leu Cys Gln Ile Gly Ala Ala Val Met Gly Glu
 435 440 445
 Gln Gly Tyr Thr Tyr Asp Thr Ile Leu Leu His Tyr Tyr Ile Gly Ala
 450 455 460
 Thr Ile Asp Lys Leu Tyr
 465 470

<210> 8863
 <211> 242
 <212> PRT
 <213> B.fragilis

<400> 8863
 Met Val Lys Glu Glu Leu Met Glu Asn Trp Gln Gln Arg Thr Glu Leu
 1 5 10 15
 Leu Leu Gly Ala Glu Lys Met Glu Arg Leu Arg Lys Ser His Val Leu
 20 25 30
 Val Val Gly Leu Gly Gly Val Gly Ala Tyr Ala Ala Glu Met Ile Cys
 35 40 45
 Arg Ala Gly Val Gly Arg Met Thr Ile Val Asp Ala Asp Ile Val Gln
 50 55 60
 Pro Thr Asn Ile Asn Arg Gln Leu Pro Ala Thr His Ala Thr Leu Gly
 65 70 75 80
 Met Glu Lys Ala Lys Val Leu Glu Ala Arg Phe Arg Asp Ile Asn Pro
 85 90 95
 Glu Ile Glu Leu Thr Val Leu Pro Val Tyr Leu Lys Asp Asp Asn Ile
 100 105 110
 Pro Glu Leu Leu Asp Ala Ala Arg Tyr Asp Phe Ile Val Asp Ala Ile
 115 120 125
 Asp Thr Ile Ser Pro Lys Cys Tyr Leu Ile Tyr His Ala Leu Gln Arg
 130 135 140
 Arg Ile Lys Ile Ile Ser Ser Met Gly Ala Gly Ala Lys Ser Asp Ile
 145 150 155 160
 Thr Gln Val Arg Phe Ala Asp Leu Trp Asp Thr Tyr His Cys Gly Leu
 165 170 175
 Ser Lys Ala Val Arg Lys Arg Leu Gln Lys Met Gly Val Lys Arg Lys
 180 185 190
 Leu Pro Val Val Phe Ser Thr Glu Gln Ala Asp Pro Lys Ala Val Leu
 195 200 205
 Leu Thr Asp Asp Glu Arg Asn Lys Lys Ser Thr Cys Gly Thr Val Ser
 210 215 220
 Tyr Met Pro Ala Val Phe Gly Cys Tyr Leu Ala Glu Tyr Val Ile Lys
 225 230 235 240
 Arg Leu

<210> 8864
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 8864
 Arg Arg Lys Asp Thr Asp Phe Tyr Ser Lys Thr Lys Ile Ile Val Ser
 1 5 10 15
 Phe Thr Gly Ala Gln Ser Lys Ile Asn Leu Glu Cys Asp Val Ala Phe
 20 25 30

Glu Ala Leu Lys Leu Ile Arg Gln Ala Gln Trp Arg Trp Asp Phe Gly
 385 390 395 400
 Val Ala Ser His Gly Gly Ala Phe His Ala Pro Gln Glu Ile Gln Arg
 405 410 415
 Ile Leu Gly His Gly Leu Asp Lys Ala Leu Gln Ala Arg Leu Ala Ile
 420 425 430
 Ser Lys Val Leu Ala Gln His Gly Tyr Thr Ala Asp Val Pro Met Pro
 435 440 445
 Asp Ile Ser Thr Lys Glu Lys Ala Gln Glu Tyr Ile Gly Leu Asp Met
 450 455 460
 Glu Lys Glu Arg Lys Ala Lys Asp Lys Phe Leu Lys Thr Ile Val Pro
 465 470 475 480
 Glu Trp Leu Glu Lys Ala Arg Ala Asn Gly Arg Leu Ala Lys Leu
 485 490 495

<210> 8866

<211> 323

<212> PRT

<213> B.fragilis

<400> 8866

Ile Ser Met Asp Lys Lys Ile Ser Ile Ser Gln Ile Lys Glu Val Val
 1 5 10 15
 Gln Gln Ala Tyr Glu Gln Val Lys Gly Asn Thr Gly Gly Lys Asn Ala
 20 25 30
 Asp Tyr Ile Pro Tyr Leu Ala Asn Ile Asp Lys Asn Leu Phe Gly Ile
 35 40 45
 Ser Val Cys Leu Leu Asn Gly Gln Thr Ile Thr Val Gly Asp Phe Asp
 50 55 60
 Tyr Arg Phe Gly Ile Glu Ser Val Ser Lys Val His Thr Ala Ile Leu
 65 70 75 80
 Ile Leu Arg Gln Tyr Gly Ala Gln Lys Val Leu Glu Met Ile Gly Ala
 85 90 95
 Asp Ala Thr Gly Leu Pro Phe Asn Ser Ile Ile Ala Ile Leu Leu Glu
 100 105 110
 Asn Asp His Pro Ser Thr Pro Leu Val Asn Ala Gly Ala Ile Ser Ala
 115 120 125
 Cys Ser Met Val Thr Pro Ile Gly Asn Ser Asp Lys Lys Trp Asp Ala
 130 135 140
 Ile Val Gln Asn Ile Thr Asp Leu Cys Gly Ser Ala Pro Gln Leu Ile
 145 150 155 160
 Glu Glu Leu Tyr Lys Ser Glu Thr Ala Thr Asn Phe Asn Asn Arg Ser
 165 170 175
 Ile Ala Trp Leu Leu Lys Asn Tyr Asn Arg Ile Tyr Asp Asp Pro Asn
 180 185 190
 Met Ser Leu Asp Leu Tyr Thr Arg Gln Cys Ser Leu Gly Val Thr Ala
 195 200 205
 Gln Met Leu Ser Val Ala Ala Gly Thr Val Ala Asn Gly Gly Val Asn
 210 215 220
 Pro Val Thr Lys Lys Gln Val Phe Asp Ala Glu Leu Thr Pro Lys Ile
 225 230 235 240
 Thr Ser Met Ile Ala Thr Val Gly Phe Tyr Glu His Ser Gly Asp Trp
 245 250 255
 Met Tyr Thr Ser Gly Ile Pro Ala Lys Thr Gly Val Gly Gly Val
 260 265 270
 Met Gly Val Leu Pro Gly Val Phe Gly Val Ser Ala Phe Ala Pro Pro
 275 280 285
 Leu Asp Gly Ser Gly Asn Ser Val Lys Ala Gln Leu Ala Ile Lys Tyr
 290 295 300

Ile Met Asn Lys Leu Gly Leu Asn Val Phe Asn Gly Ala Arg Val Thr
 305 310 315 320
 Ile Val Asp

<210> 8867
 <211> 288
 <212> PRT
 <213> B.fragilis

<400> 8867
 Gln Lys Met Asp Ser Thr Ile Phe Lys Ser Leu Asn Val Asn Gly Arg
 1 5 10 15
 Leu Leu Asp Leu Ser Ile Pro Gln Val Met Gly Ile Leu Asn Val Thr
 20 25 30
 Pro Asp Ser Phe Tyr Ala Gly Ser Arg Ser Arg Thr Glu Ala Asp Ile
 35 40 45
 Ala Ala Arg Ala Arg Gln Ile Leu Asp Glu Gly Ala Ser Met Ile Asp
 50 55 60
 Ile Gly Ala Tyr Ser Ser Arg Ser Asn Ala Glu His Ile Ser Pro Glu
 65 70 75 80
 Glu Glu Met Arg Arg Leu Arg Thr Gly Leu Glu Ile Leu Asn Arg Asn
 85 90 95
 His Pro Gly Ala Ile Ile Ser Val Asp Thr Phe Arg Ala Gly Val Ala
 100 105 110
 Glu Glu Cys Val Lys Glu Tyr Gly Val Ala Ile Ile Asn Asp Ile Ser
 115 120 125
 Ala Gly Glu Met Asp Glu Gln Met Phe Pro Thr Val Ala Arg Leu Asn
 130 135 140
 Val Pro Tyr Ile Met Met His Met Gln Gly Thr Pro Gln Asn Met Gln
 145 150 155 160
 Lys Glu Pro His Tyr Glu Asn Leu Leu Lys Glu Val Phe Ile Tyr Phe
 165 170 175
 Ala Arg Lys Val Gln Gln Leu Arg Asp Leu Gly Val Lys Asp Ile Ile
 180 185 190
 Leu Asp Pro Gly Phe Gly Phe Gly Lys Thr Leu Glu His Asn Tyr Glu
 195 200 205
 Leu Met Ala His Leu Glu Glu Phe Gly Ile Phe Glu Leu Pro Leu Leu
 210 215 220
 Val Gly Val Ser Arg Lys Ser Met Ile Tyr Arg Leu Phe Gly Thr Thr
 225 230 235 240
 Pro Gln Glu Ala Leu Asn Gly Thr Thr Val Leu Asp Thr Val Ala Leu
 245 250 255
 Met Lys Gly Ala Asp Ile Leu Arg Val His Asp Val Arg Glu Ala Val
 260 265 270
 Glu Ser Val Arg Leu Ile Glu Lys Leu Lys Ser Val Ser Ala Cys Ser
 275 280 285

<210> 8868
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 8868
 Val Lys Thr Cys Ser Leu Asp Val Asn Asn Lys Phe Phe Lys Cys Lys
 1 5 10 15
 Arg Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Leu Gln Lys Thr Leu
 20 25 30
 Thr Met Leu Ile Glu Glu Arg Cys Lys Asn Glu Asp Thr Asp Ser Asp

35 40 45
 Ser Val Asn Ser Leu Pro Glu Leu Glu Leu Ser Tyr Ser Ala Gly Ile
 50 55 60
 Cys Phe Phe Leu Leu Lys
 65 70

<210> 8869
 <211> 712
 <212> PRT
 <213> B.fragilis

<400> 8869
 Tyr Met His Trp Phe Asp Leu Ser Leu Gln Leu Pro Ile Thr Asp Pro
 1 5 10 15
 Thr Trp Val Phe Phe Leu Val Leu Ile Ile Ile Leu Phe Ala Pro Met
 20 25 30
 Ile Leu Gly Arg Leu His Ile Pro His Ile Ile Gly Met Ile Leu Ala
 35 40 45
 Gly Val Val Ile Gly Glu Tyr Gly Phe Asn Val Leu Glu Arg Asp Ser
 50 55 60
 Ser Phe Glu Leu Phe Gly Lys Val Gly Leu Tyr Tyr Ile Met Phe Leu
 65 70 75 80
 Ala Gly Leu Glu Met Asp Met Glu Asp Phe Lys Lys Asn Arg Thr Lys
 85 90 95
 Gly Leu Val Phe Gly Trp Phe Thr Phe Ile Ile Pro Met Ala Leu Gly
 100 105 110
 Val Trp Ser Ser Met Glu Leu Leu Gly Tyr Gly Phe Thr Thr Ala Val
 115 120 125
 Leu Leu Ala Ser Met Tyr Ala Ser His Thr Leu Ile Ala Tyr Pro Ile
 130 135 140
 Ile Ser Arg Tyr Gly Leu Ser Arg Leu Arg Ser Val Asn Ile Thr Ile
 145 150 155 160
 Gly Gly Thr Ala Val Thr Val Thr Leu Ala Leu Ile Ile Leu Ala Val
 165 170 175
 Ile Gly Gly Met Tyr Lys Gly Thr Val Asp Gly Met Phe Trp Val Leu
 180 185 190
 Leu Val Val Lys Val Ala Phe Leu Ser Phe Leu Ile Val Phe Phe Phe
 195 200 205
 Pro Arg Ile Gly Arg Trp Phe Phe Arg Lys Tyr Asp Asp Ser Val Met
 210 215 220
 Gln Phe Val Phe Val Leu Ala Met Val Phe Leu Gly Ser Gly Leu Met
 225 230 235 240
 Glu Phe Val Gly Met Glu Gly Ile Leu Gly Ala Phe Leu Ala Gly Leu
 245 250 255
 Val Leu Asn Arg Leu Ile Pro His Val Ser Pro Leu Met Asn Arg Leu
 260 265 270
 Glu Phe Val Gly Asn Ala Leu Phe Ile Pro Tyr Phe Leu Ile Gly Val
 275 280 285
 Gly Met Ile Ile Asp Val Arg Thr Leu Phe Thr Gly Gly Glu Ala Leu
 290 295 300
 Lys Val Ala Val Val Met Thr Val Phe Ala Thr Leu Ser Lys Trp Leu
 305 310 315 320
 Ala Ala Trp Ile Thr Gln Lys Ile Tyr His Met Gln Pro Asn Glu Arg
 325 330 335
 Ser Met Met Phe Gly Leu Ser Asn Ala Gln Ala Ala Ala Thr Leu Ala
 340 345 350
 Ala Val Leu Ile Gly His Glu Ile Ile Met Glu Asn Gly Glu Arg Leu
 355 360 365
 Leu Asn Asp Asp Val Leu Asn Gly Thr Val Val Met Ile Leu Phe Thr

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      370                      375                      380
Cys Val Ile Ser Ser Leu Val Thr Glu Arg Ser Ala Arg Arg Phe Ala
385                      390                      395                      400
Leu His Glu Glu Met Gln Phe Glu Asp Asn Lys Glu Lys Thr Glu Gln
      405                      410                      415
Glu Gln Ile Leu Ile Pro Val Ala Asn Pro Asp Thr Ile Glu Asp Leu
      420                      425                      430
Ile Asn Leu Ala Leu Val Ile Arg Asp Thr Lys Gln Lys Lys Glu Leu
      435                      440                      445
Ile Ala Leu Asn Val Ile Asn Asp Asn Asn Asn Ser Glu Asn Lys Glu
      450                      455                      460
Leu Gln Gly Lys Arg Asn Leu Glu Lys Ala Ala Met Ile Ala Ala Ser
465                      470                      475                      480
Ala Asp Val Ser Val Asn Met Val Ser Arg Tyr Asp Leu Asn Ile Ala
      485                      490                      495
Ser Gly Ile Ile His Thr Ile Lys Glu Tyr Asp Ala Thr Asp Val Val
      500                      505                      510
Ile Gly Leu His Arg Lys Ala Asn Ile Val Asp Ser Phe Phe Gly Asn
      515                      520                      525
Leu Ala Glu Ser Leu Leu Lys Gly Thr His Arg Glu Val Ile Ile Ala
      530                      535                      540
Lys Phe Leu Met Pro Val Asn Thr Leu Arg Arg Ile Ile Ile Ala Val
545                      550                      555                      560
Pro Pro Lys Ala Glu Tyr Glu Thr Gly Phe Ser Lys Trp Val Glu His
      565                      570                      575
Phe Cys Arg Met Gly Ser Leu Leu Gly Cys Arg Val His Phe Phe Ala
      580                      585                      590
Asn Glu Gln Thr Leu Met Arg Leu Gln Gln Leu Val Lys Lys Lys His
      595                      600                      605
Gly Ser Thr Pro Thr Glu Phe Ser Arg Leu Asp Glu Trp Asp Asp Leu
      610                      615                      620
Leu Leu Leu Thr Gly Gln Val Asn Phe Asp His Leu Leu Val Val Ile
625                      630                      635                      640
Ser Ala Arg Arg Gly Ser Ile Ser Tyr Asp Pro Ser Phe Glu Arg Leu
      645                      650                      655
Pro Asn Gln Leu Gly Lys Tyr Phe Ser Asn Asn Ser Leu Ile Ile Leu
      660                      665                      670
Tyr Pro Asp Gln Phe Gly Glu Pro Gln Glu Ile Val Ser Phe Ser Asp
      675                      680                      685
Pro Arg Gly Tyr Asn Glu Ser Gln His Tyr Asp Lys Val Gly Lys Trp
      690                      695                      700
Phe Tyr Lys Trp Leu Lys Lys Asn
705                      710

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<210> 8870

<211> 969

<212> PRT

<213> B.fragilis

<400> 8870

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Ile Lys Asn Trp Ala Glu Cys Arg Thr Asn Arg Glu Thr Met Lys Met
1                      5                      10                      15
Glu Arg Asn Tyr Ser Ala Phe Leu Gln Asp Ile Gly Arg Phe Ile Pro
      20                      25                      30
Arg Asp Arg Leu Phe Thr Asp Glu Leu His Arg Leu Ala Trp Gly Thr
      35                      40                      45
Asp Ala Gly Phe Tyr Arg Leu Ile Pro Gln Ile Val Ile His Ser Ile
      50                      55                      60
Asn Asp Asp Glu Val Ile Glu Ile Ile Tyr Leu Ala Asp Arg Tyr Asn

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65					70					75				80
Ile	Pro	Val	Thr	Phe	Arg	Ala	Ala	Gly	Thr	Ser	Leu	Ser	Gly	Gln
				85					90					95
Ile	Ser	Asp	Ser	Val	Leu	Ile	Ile	Ala	Gly	Lys	Gly	Trp	Glu	Asn
			100					105					110	Tyr
Glu	Leu	Ser	Pro	Asp	His	Glu	Lys	Ile	Tyr	Leu	Glu	Pro	Gly	Ile
		115					120					125		Val
Gly	Gln	Arg	Val	Asn	Glu	Ile	Leu	Ala	Pro	Tyr	Gly	Arg	Lys	Phe
	130					135					140			Ala
Pro	Asp	Pro	Ala	Ser	Ile	Lys	Ser	Ala	Met	Val	Gly	Gly	Ile	Val
145					150					155				Met
Asn	Asn	Ala	Ser	Gly	Met	Asn	Cys	Gly	Thr	His	Ala	Asn	Ser	Asp
			165						170					Lys
Met	Leu	Leu	Ser	Val	His	Ile	Ile	Phe	Pro	Asp	Gly	Tyr	Tyr	Leu
			180					185					190	Asn
Thr	Asp	Ser	Gln	Glu	Ser	Arg	Glu	Asn	Phe	Lys	Glu	Asp	Tyr	Pro
	195						200					205		Glu
Phe	Leu	Gln	Arg	Ile	Cys	Glu	Leu	Arg	Asp	Gln	Ile	Arg	Ser	Asn
	210				215					220				Glu
Lys	Leu	Ser	Ala	Arg	Ile	Arg	His	Lys	Tyr	Ser	Ile	Lys	Asn	Val
225					230					235				Thr
Gly	Leu	Asn	Ile	Leu	Pro	Phe	Leu	Val	Tyr	Asp	Asp	Pro	Phe	Asp
			245						250				255	Ile
Ile	Ala	His	Leu	Met	Val	Gly	Ser	Glu	Gly	Thr	Leu	Ala	Phe	Leu
		260						265					270	Ala
Gly	Val	Thr	Met	Lys	Thr	Glu	Tyr	Asp	Tyr	Pro	Tyr	Lys	Ala	Ser
		275					280					285		Ala
Met	Leu	Tyr	Phe	Ser	Asp	Ile	Lys	Glu	Ala	Cys	Arg	Ala	Val	Val
	290				295					300				Ala
Met	Lys	Arg	Leu	Val	Asn	Ala	Asn	Gly	Glu	Trp	Ile	Val	Lys	Gly
305					310					315				Ala
Glu	Leu	Leu	Asp	Trp	Lys	Ser	Leu	Ala	Ser	Val	Asn	Asp	Pro	Thr
			325						330				335	Gly
Glu	Gly	Leu	Thr	Ala	Val	Leu	Thr	Glu	Thr	Lys	Ala	Cys	Thr	Gln
		340					345					350		Glu
Glu	Leu	Asn	Gln	Asn	Ile	Ala	Ile	Ile	Glu	Glu	Ala	Leu	Lys	Ala
	355				360							365		Phe
Asp	Thr	Tyr	Ile	Pro	Val	His	Phe	Thr	Asp	Gln	Pro	Glu	Glu	Tyr
	370				375					380				Ser
Lys	Tyr	Trp	Ala	Ile	Arg	Ala	Gly	Ile	Phe	Pro	Ser	Val	Gly	Gly
385				390					395					Thr
Arg	Pro	Ser	Gly	Thr	Thr	Cys	Leu	Ile	Glu	Asp	Val	Ala	Phe	His
			405						410				415	Ile
Glu	Asp	Leu	Pro	Glu	Ala	Thr	Ala	Glu	Leu	Gln	Gln	Leu	Ile	Ala
		420					425					430		Arg
His	Gly	Tyr	Asp	Asp	Ala	Cys	Ile	Tyr	Gly	His	Ala	Leu	Glu	Gly
	435				440						445			Asn
Tyr	His	Phe	Ile	Ile	Asn	Gln	Ser	Phe	Ser	Asn	Glu	Ala	Glu	Val
	450				455					460				Lys
Arg	Tyr	Glu	Ala	Leu	Met	Asn	Asp	Val	Ile	Asp	Leu	Val	Val	Gly
465				470					475					Lys
Tyr	Asp	Gly	Ser	Leu	Lys	Ala	Glu	His	Gly	Thr	Gly	Arg	Asn	Met
			485						490				495	Ala
Pro	Phe	Val	Glu	Tyr	Glu	Trp	Gly	Glu	Glu	Ala	Tyr	Ala	Ile	Met
		500					505					510		Lys
Glu	Val	Lys	Gln	Leu	Phe	Asp	Pro	Lys	Gly	Leu	Phe	Asn	Pro	Gly
	515						520					525		Val
Ile	Phe	Asn	Asp	Asp	Pro	Gln	Cys	His	Ile	Lys	His	Phe	Lys	Pro
	530					535					540			Leu

Ser Pro Leu Thr Ile Gly Gln Asp Thr Gln Val Thr Arg Gln Ile Asp
 545 550 555 560
 Arg Cys Ile Glu Cys Gly Phe Cys Glu Val Asn Cys Leu Ser Cys Gly
 565 570 575
 Phe Thr Leu Ser Ser Arg Gln Arg Ile Val Ile Gln Arg Glu Ile Ser
 580 585 590
 Arg Leu Lys Lys Ser Gly Glu Asn Pro Gln Leu Leu Glu Thr Leu Ser
 595 600 605
 Glu Leu Tyr Arg Tyr Ser Gly Asn Trp Thr Cys Ala Gly Asp Gly Leu
 610 615 620
 Cys Ala Met Ser Cys Pro Met Gly Ile Asn Thr Gly Asp Leu Thr His
 625 630 635 640
 Ile Leu Arg Gln Ala Glu Phe Pro Pro Gly Ser Thr Gly Tyr Arg Ala
 645 650 655
 Gly Lys Phe Ala Ala Asn His Phe Ala Gly Ile Lys Ser Thr Leu Arg
 660 665 670
 Pro Val Leu Ser Leu Ala Asn Ala Ala His Ser Leu Leu Gly Thr Ser
 675 680 685
 Thr Met Thr Ser Ile Thr Arg Lys Met His Ser Ala Trp Gly Leu Pro
 690 695 700
 Gln Trp Thr Pro Ala Met Pro Lys Ser Tyr Lys Ile Arg Lys Ser Asp
 705 710 715 720
 Gln Thr Pro Ala Met Asn Asn Lys Val Val Tyr Phe Pro Ser Cys Ile
 725 730 735
 Asn Gln Thr Met Gly Leu Ala Lys Asp Ser Pro Val Asp Gln Pro Leu
 740 745 750
 Val Lys Gln Met Leu Ser Leu Leu Gln Lys Ala Gly Tyr Glu Val Ile
 755 760 765
 Phe Pro Pro Lys Met Glu Lys Leu Cys Cys Gly Thr Ile Trp Glu Ser
 770 775 780
 Lys Gly Met Leu Asp Ile Ala Asp Ser Lys Ser Thr Glu Leu Glu Ala
 785 790 795 800
 Ala Leu Trp Glu Ala Ser Glu Gln Gly Arg Tyr Pro Val Leu Cys Asp
 805 810 815
 Gln Ser Pro Cys Leu His Arg Met Arg Ala Thr Ile Gln Lys Ile Lys
 820 825 830
 Leu Tyr Glu Pro Ala Glu Phe Ile Tyr Thr Phe Leu Arg Asp Lys Leu
 835 840 845
 Glu Phe Thr Pro Thr Asp Arg Pro Ile Ala Ile His Ile Thr Cys Ser
 850 855 860
 Met Arg Lys Met Gly Leu Ala Asn Ile Leu Ile Ser Leu Ala Lys Leu
 865 870 875 880
 Cys Ser Thr Gln Val Phe Ile Pro Glu Glu Val Gly Cys Cys Gly Phe
 885 890 895
 Ala Gly Asp Lys Gly Phe Thr Gln Pro Glu Leu Asn Thr Tyr Ala Leu
 900 905 910
 Arg Lys Leu Arg Pro Gln Leu Thr Lys Ala Gly Ile Gly Ile Gly Tyr
 915 920 925
 Ser Asn Ser Arg Thr Cys Glu Ile Gly Leu Ala Thr Asn Thr Gly Ile
 930 935 940
 Pro Tyr Val Ser Ile Ala Tyr Leu Val Asp Gln Cys Thr Arg Pro Ile
 945 950 955 960
 Lys Gln Lys Asn Asn Leu Thr Leu Lys
 965

<210> 8871

<211> 385

<212> PRT

<213> B.fragilis

<400> 8871

Ser Lys Ile Trp Phe Pro Phe Gln Leu Leu Ile Ser Phe Phe Lys Thr
 1 5 10 15
 Ile Phe Met Lys Lys Leu Asn Gln Leu Leu Leu Gly Leu Leu Leu Val
 20 25 30
 Gly Ser Ala Ile Ala Cys His Arg Glu Thr Ser Leu Glu Glu Arg Asp
 35 40 45
 Ile Val Ile Asp Leu Ser Val Ser Asn Pro Tyr Leu Pro Met Ser Val
 50 55 60
 Leu Val Asp Thr Ile Glu Ser Val Arg Leu Gln Leu Pro Ser Pro Tyr
 65 70 75 80
 Phe Trp Gly Met Val Asp Asn Val Ile Ser Lys Asp Ser Cys Tyr Tyr
 85 90 95
 Ile Ser Asp Arg Lys Gln Glu Met Ala Phe Arg Phe Ser Lys Asn Gly
 100 105 110
 Thr Phe Leu Asn Ala Ile Gly Gln Arg Gly Glu Gly Pro Gly Glu Tyr
 115 120 125
 Arg Glu Met Asp Ser Phe Phe Val Gly Lys Asp Cys Val Tyr Val Cys
 130 135 140
 Asp Met Gly Lys Arg Thr Ile Tyr Ser Tyr Ser Phe Asp Gly Lys Phe
 145 150 155 160
 Leu His Ser Leu Ser Phe Pro Tyr Ser Leu Val Phe Asn Asp Val Val
 165 170 175
 Glu Leu Pro Asp Gly Arg Phe Leu Cys His Arg Pro Ser Gln Ser Glu
 180 185 190
 Asn Cys Lys Gly Leu Trp Ile Leu Asp Gln Lys Gly Arg Arg Val Lys
 195 200 205
 Asn Leu Leu Glu Tyr Glu Lys Gly Thr Pro Cys Lys Asn Ser Tyr Trp
 210 215 220
 Asn Thr Leu Cys Ala Gln Glu Asp Gly Thr Ile Lys Ile Tyr Asn Pro
 225 230 235 240
 Val Asp Gly Ser Tyr Tyr Gln Tyr Asp Ala Val Asn Asp Thr Val Val
 245 250 255
 Arg Thr Met Arg Gln Lys Ser Asn Leu Pro Met Leu Ala Asp Phe His
 260 265 270
 Cys Ser Asp Arg Glu Leu Tyr Glu Thr Lys Glu Glu Cys Thr Tyr Ser
 275 280 285
 Leu Phe Thr Val Asp Gly Lys Asn Leu Val Phe Ser Leu Trp Ser Phe
 290 295 300
 Asn Ser Ala Asn Lys Gly Met Trp Ser Val Tyr Phe Lys Lys Asp Gly
 305 310 315 320
 Arg Ile Glu Gln Gly Asn Leu Thr Lys Met Asp Ile Pro Gly Tyr Ser
 325 330 335
 Glu Met Gly Arg Pro Val Ser Ser Asn Ile Pro Asn Thr Phe Val Thr
 340 345 350
 Val Tyr Thr Asp Glu Phe Pro Asp Asp Ala Phe Pro Ser Ala Tyr Gln
 355 360 365
 Gln Gln Glu Ile Asn Glu Gln Thr Ala Ile Leu Ser Leu Leu Arg Leu
 370 375 380
 Lys
 385

<210> 8872

<211> 600

<212> PRT

<213> B.fragilis

<400> 8872

Leu	Arg	Gln	Trp	Asn	Leu	Gly	Thr	Ser	Arg	Pro	Asp	Val	Ser	Tyr	Arg
1				5					10					15	
Ile	Val	Arg	Phe	Thr	Ser	Tyr	Phe	Leu	Ile	Tyr	His	Lys	Gln	Leu	Ile
			20					25					30		
Ala	Asn	Tyr	Met	Lys	Lys	Ile	Lys	Tyr	Ile	Ala	Cys	Leu	Leu	Ser	Leu
			35				40					45			
Ala	Val	Val	Ser	Gly	Cys	Asp	Ser	Ile	Leu	Asp	Lys	Gly	Pro	Leu	Asp
	50					55					60				
Ser	Phe	Thr	Asn	Asp	Asn	Phe	Trp	Thr	Gly	Glu	Gly	Asn	Ile	Ser	Gly
65					70					75					80
Tyr	Ala	Asn	Ala	Phe	Tyr	Glu	Gln	Phe	Leu	Gly	Tyr	Gly	Asn	Gly	Asn
				85					90					95	
Gly	Tyr	Gly	Asp	Phe	Tyr	Phe	Lys	Thr	Leu	Ser	Asp	Asp	Gln	Ala	Gly
			100					105					110		
Met	Ser	Phe	Ala	Lys	Trp	Thr	Tyr	Pro	Asp	Asn	Ala	Pro	Ser	Thr	Ser
			115				120					125			
Ala	Thr	Trp	Lys	Asn	Gly	Trp	Ile	Glu	Val	Arg	Arg	Ala	Asn	Ile	Met
	130					135						140			
Leu	Glu	Asn	Val	Pro	Thr	Val	Ala	Ser	Leu	Asp	Glu	Ala	Thr	Lys	Asn
145					150					155					160
His	Trp	Leu	Gly	Val	Ala	Arg	Leu	Met	Arg	Ala	Trp	Gln	Tyr	Tyr	His
				165					170					175	
Leu	Val	Arg	Met	Tyr	Gly	Asn	Leu	Pro	Trp	Ile	Asp	Lys	Ala	Leu	Asn
			180					185					190		
Ile	Asn	Asp	Glu	Gly	Glu	Ile	Tyr	Gly	Asn	Arg	Glu	Asp	Arg	Asp	Met
	195						200						205		
Val	Met	Asp	Lys	Val	Leu	Glu	Asp	Leu	Asp	Phe	Ala	Val	Thr	Asn	Ile
	210					215					220				
Lys	Asp	Ile	Ser	Ser	Lys	Thr	Thr	Trp	Ser	Arg	Ser	Leu	Ala	Asn	Ala
225					230					235					240
Met	Lys	Ala	Glu	Val	Cys	Leu	Tyr	Glu	Gly	Thr	Phe	Arg	Lys	Tyr	Arg
				245					250					255	
Lys	Asn	Glu	Asp	Gly	Gln	Gln	Ala	Pro	Asp	Ala	Thr	Gly	Ala	Ala	Arg
			260					265					270		
Tyr	Leu	Thr	Ala	Cys	Lys	Glu	Ala	Cys	Leu	Ala	Val	Met	Ser	Lys	Gly
	275						280					285			
Tyr	Lys	Leu	Asn	Thr	Ser	Tyr	Gln	Gly	Asn	Tyr	Asn	Ser	Thr	Asp	Leu
	290					295					300				
Ser	Ser	Asn	Pro	Glu	Met	Ile	Leu	Tyr	Lys	Ala	Tyr	Lys	Glu	Gly	Leu
305					310					315					320
Leu	Met	His	Ser	Thr	Ile	Asp	Tyr	Thr	Cys	Ser	Ser	Thr	Gln	Ile	Ser
				325					330					335	
Gly	Met	Ser	Lys	Asn	Ala	Phe	Glu	Ser	Tyr	Leu	Phe	Lys	Asp	Gly	Lys
			340					345					350		
Pro	Met	Ala	Leu	Thr	Ser	Leu	Asn	Lys	Ser	Asp	Glu	Ala	Pro	Phe	Gln
	355						360					365			
Tyr	Gly	His	Leu	Ser	Leu	Lys	Ala	Ile	Leu	Ala	Val	Arg	Asp	Lys	Arg
	370					375					380				
Leu	Ala	Gln	Thr	Ile	Asp	Thr	Val	Leu	Leu	Tyr	Asn	Gly	Arg	Gly	Phe
385					390					395					400
Thr	Arg	Phe	Asn	Thr	Gly	Met	Glu	Ser	Thr	Ser	Ser	Thr	Gly	Tyr	Gly
				405					410					415	
Val	Ala	Lys	Tyr	Asp	Asn	Glu	Ala	Ile	Pro	Glu	Gly	Phe	Arg	Ser	Gln
			420					425					430		
Ser	Gly	Lys	Asn	Tyr	Thr	His	Ala	Pro	Leu	Phe	Trp	Leu	Ser	Val	Ile
	435						440					445			
Tyr	Leu	Asn	Tyr	Ala	Glu	Ala	Cys	Ala	Glu	Leu	Gly	Asn	Ile	Thr	Gln
	450					455					460				
Asp	Asp	Leu	Asp	Lys	Ser	Ile	Asn	Leu	Leu	Lys	Asp	Arg	Ala	Gly	Leu

465 470 475 480
 Pro His Leu Asn Pro Ile Val Gly Phe Ser Asp Pro Ala Asn Asn His
 485 490 495
 Gly Val Ser Asp Leu Ile Trp Glu Ile Arg Arg Glu Arg Arg Cys Glu
 500 505 510
 Leu Met Phe Asp Asn Asp Asn Arg Tyr Trp Asp Leu Ile Arg Trp His
 515 520 525
 Gln Leu Asp Lys Leu Asp Thr Thr Lys Tyr Pro Asp Ile Ile Leu Gly
 530 535 540
 Ala Asn Val Ala Asn Asp Met Asp Gly Cys Glu Ala Asn Lys Val Gly
 545 550 555 560
 Lys Tyr Ile Asp Gly Ser Lys Asp Gly Ser Arg Ile Tyr Asp Lys Lys
 565 570 575
 His Tyr Leu Tyr Pro Ile Pro Thr Gly Gln Ile Ala Leu Asn Pro Gln
 580 585 590
 Leu Ala Pro Asn Asn Pro Gly Trp
 595 600

<210> 8873

<211> 341

<212> PRT

<213> B.fragilis

<400> 8873

Ile Ser Met Leu Asn Leu Ile Asn Ser Ile Val Ala Arg Ala Gln Ala
 1 5 10 15
 Asn Arg Gln Arg Ile Val Leu Pro Glu Gly Thr Glu Glu Arg Thr Leu
 20 25 30
 Lys Ala Ala Asn Gln Ile Leu Thr Asp Glu Val Ala Asp Leu Ile Leu
 35 40 45
 Leu Gly Asn Pro Glu Glu Ile Asn Ala Ala Ala Val Lys Trp Gly Leu
 50 55 60
 Gly Asn Ile Asn Arg Ala Thr Ile Ile Asp Pro Glu Asn His Pro Lys
 65 70 75 80
 Lys Glu Glu Tyr Ala Gln Leu Leu Cys Glu Leu Arg Lys Lys Lys Gly
 85 90 95
 Met Thr Ile Glu Glu Ala Arg Lys Leu Val Leu Asp Pro Leu Tyr Leu
 100 105 110
 Gly Cys Leu Ile Ile Lys Ser Gly Asp Ala Asp Gly Gln Leu Ala Gly
 115 120 125
 Ala Arg Asn Thr Thr Gly Asp Val Leu Arg Pro Ala Leu Gln Ile Ile
 130 135 140
 Lys Thr Ser Pro Gly Ile Thr Cys Val Ser Gly Ala Met Leu Leu Leu
 145 150 155 160
 Thr His Ala Pro Glu Cys Gly Gln Asn Gly Leu Leu Val Met Gly Asp
 165 170 175
 Val Ala Val Thr Pro Val Pro Asp Ala Ser Gln Leu Ala Gln Ile Ala
 180 185 190
 Val Cys Thr Ala Arg Thr Ala Gln Ala Val Ala Gly Ile Ala Glu Pro
 195 200 205
 Lys Val Ala Met Leu Ser Phe Ser Thr Lys Gly Ser Ala Lys His Glu
 210 215 220
 Asn Val Asp Lys Val Val Glu Ala Leu Lys Leu Ala Lys Glu Met Ala
 225 230 235 240
 Pro Asp Leu Asn Ile Asp Gly Glu Met Gln Ala Asp Ala Ala Leu Val
 245 250 255
 Pro Ser Val Gly Ala Ser Lys Ala Pro Gly Ser Pro Val Ala Gly Glu
 260 265 270
 Ala Asn Val Leu Ile Val Pro Ser Leu Glu Val Gly Asn Ile Ser Tyr

275 280 285
 Lys Leu Val Gln Arg Leu Gly His Ala Asp Ala Val Gly Pro Ile Leu
 290 295 300
 Gln Gly Ile Ala Arg Pro Val Asn Asp Leu Ser Arg Gly Cys Ser Ile
 305 310 315 320
 Glu Asp Val Tyr Arg Met Ile Ala Ile Thr Ala Asn Gln Ala Ile Ala
 325 330 335
 Ala Lys Asn Gly Lys
 340

<210> 8874
 <211> 237
 <212> PRT
 <213> B.fragilis

<400> 8874
 Ala Ile Cys Arg Arg Cys Leu Val Val Ile Trp Gln Ser Thr Leu Ser
 1 5 10 15
 Lys Asp Cys Lys Ile Met Ile His Leu Glu Gly Ile Thr Lys Ser Phe
 20 25 30
 Gly Ser Leu Gln Val Leu Lys Gly Ile Asp Leu Glu Ile Thr Gln Gly
 35 40 45
 Glu Val Val Ser Ile Val Gly Pro Ser Gly Ala Gly Lys Thr Thr Leu
 50 55 60
 Leu Gln Ile Met Gly Thr Leu Asp Ser Pro Asp Ala Gly Met Ile Asn
 65 70 75 80
 Ile Asp Gly Thr Asn Val Ser Arg Met Lys Glu Lys Glu Leu Ser Ala
 85 90 95
 Phe Arg Asn Lys His Ile Gly Phe Val Phe Gln Phe His Gln Leu Leu
 100 105 110
 Pro Glu Phe Thr Ala Leu Glu Asn Val Met Ile Pro Ala Phe Ile Ala
 115 120 125
 Gly Val Pro Thr Lys Glu Ala Ser Met Arg Ala Met Glu Ile Leu Asp
 130 135 140
 Phe Met Gly Leu Lys Glu Arg Ala Ser His Lys Pro Asn Glu Leu Ser
 145 150 155 160
 Gly Gly Glu Lys Gln Arg Val Ala Val Ala Arg Ala Leu Ile Asn Gln
 165 170 175
 Pro Ala Val Ile Leu Ala Asp Glu Pro Ser Gly Ser Leu Asp Ser His
 180 185 190
 Asn Lys Glu Glu Leu His Gln Leu Phe Phe Asp Leu Arg Asn Arg Phe
 195 200 205
 Gly Gln Thr Phe Val Ile Val Thr His Asp Glu Ala Leu Ala Lys Ile
 210 215 220
 Thr Asp Arg Thr Ile His Met Val Asp Gly Asn Ile Ile
 225 230 235

<210> 8875
 <211> 328
 <212> PRT
 <213> B.fragilis

<400> 8875
 Gln Arg Phe Arg Met Lys Arg Asn Ile Ala Ile Val Ala Gly Gly Asp
 1 5 10 15
 Thr Ser Glu Ile Val Val Ser Leu Arg Ser Ala Gln Gly Ile Tyr Ser
 20 25 30
 Phe Ile Asp Lys Glu Lys Tyr Asn Leu Tyr Ile Val Glu Met Glu Gly
 35 40 45

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Arg Arg Trp Glu Val Gln Leu Pro Asp Gly Ser Lys Thr Pro Val Asp
 50          55          60
Arg Asn Asp Phe Ser Phe Met Asn Gly Ala Glu Lys Val Val Phe Asp
65          70          75          80
Phe Ala Tyr Ile Thr Ile His Gly Thr Pro Gly Glu Asp Gly Arg Leu
          85          90          95
Gln Gly Tyr Phe Asp Met Met Arg Ile Pro Tyr Ser Cys Cys Gly Val
          100          105          110
Leu Ala Ala Ala Ile Thr Tyr Asp Lys Phe Val Cys Asn Gln Tyr Leu
          115          120          125
Lys Ala Phe Gly Val Arg Ile Ser Glu Ser Leu Leu Leu Arg Gln Gly
          130          135          140
Gln Ala Val Ser Asp Glu Asp Val Val Glu Lys Ile Gly Leu Pro Cys
145          150          155          160
Phe Ile Lys Pro Asn Leu Gly Gly Ser Ser Phe Gly Val Thr Lys Val
          165          170          175
Lys Thr Arg Glu Gln Ile Gln Pro Ala Ile Ala Lys Ala Phe Ser Glu
          180          185          190
Ala Glu Glu Val Met Ile Glu Ala Phe Met Asp Gly Thr Glu Leu Thr
          195          200          205
Cys Gly Cys Tyr Lys Thr Lys Glu Lys Ser Val Val Phe Pro Leu Thr
          210          215          220
Glu Val Val Thr His Asn Glu Phe Phe Asp Tyr Asp Ala Lys Tyr Asn
225          230          235          240
Gly Gln Val Asp Glu Ile Thr Pro Ala Arg Ile Ser Glu Glu Leu Thr
          245          250          255
Arg Arg Val Gln Thr Leu Thr Ser Ala Ile Tyr Asp Ile Leu Gly Cys
          260          265          270
Ser Gly Ile Ile Arg Val Asp Tyr Ile Ile Thr Glu Gly Glu Lys Ile
          275          280          285
Asn Leu Leu Glu Val Asn Thr Thr Pro Gly Met Thr Ala Thr Ser Phe
          290          295          300
Ile Pro Gln Gln Val Arg Ala Ala Gly Leu Asp Ile Lys Asp Val Met
305          310          315          320
Thr Asp Ile Ile Glu Asn Lys Phe
          325

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<210> 8876

<211> 171

<212> PRT

<213> B.fragilis

<400> 8876

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Asn Phe Asp Arg Met Glu Tyr Ile Asn Asp Leu Ile Arg Arg Lys Asp
 1          5          10          15
Arg Leu Leu Ser Glu Asp Glu Ala Met Ser Leu Leu Glu Asn Gly Glu
          20          25          30
Tyr Gly Val Leu Ser Ile Ser Ser Thr Glu Glu Gly Val Tyr Gly Ile
          35          40          45
Pro Ile Asn Tyr Val Trp Asp Lys Gln Gln Ser Ile Tyr Phe His Cys
          50          55          60
Ala Pro Glu Gly His Lys Leu Cys Ile Leu Gln Asn Cys Asn Gln Ala
          65          70          75          80
Ser Phe Cys Val Val Gly Arg Thr Arg Val Val Ser Asn Gln Phe Ser
          85          90          95
Thr Glu Tyr Glu Ser Ile Val Ile Asn Gly Thr Met Ile Cys Gln Leu
          100          105          110
Glu Glu Thr Glu Lys Arg Lys Ala Leu Glu Leu Leu Leu Asp Lys Tyr
          115          120          125

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Ser Pro Glu Asp Lys Lys Val Gly Leu Lys Tyr Ile Glu Lys Ser Phe
 130 135 140
 His Arg Thr His Val Leu Lys Leu Val Ile Lys Val Ile Ser Gly Lys
 145 150 155 160
 Cys Lys Lys Ile Asn Gln Pro Cys Gln Asp Tyr
 165 170

<210> 8877
 <211> 450
 <212> PRT
 <213> B.fragilis

<400> 8877
 Val Ile Ser Ser Pro Asn Arg Lys Ile Ser Gln His Thr Phe Cys Cys
 1 5 10 15
 Leu Cys Ala Glu His Ser Asn Gly Ser Phe Val Leu His Thr Pro Lys
 20 25 30
 Leu Tyr Asn Thr Tyr Ile Thr Met Arg Ile Gln Thr Gly His Gly Thr
 35 40 45
 Ile Pro Leu Ile Thr Leu Ile Gly Ile Trp Ser Ile Ser Ala Leu Asn
 50 55 60
 Ala Leu Pro Gly Leu Ala Val Ser Pro Ile Leu Gly Lys Leu Ser Ala
 65 70 75 80
 Ile Phe Pro His Ser Thr Glu Leu Asp Ile Gln Met Leu Ser Ser Leu
 85 90 95
 Pro Ser Leu Leu Ile Ile Pro Phe Ile Leu Leu Ala Gly Lys Leu Thr
 100 105 110
 Glu Arg Val Asn Phe Ile Arg Leu Leu Gln Ala Gly Leu Ala Ile Phe
 115 120 125
 Ala Leu Ser Gly Val Leu Tyr Leu Leu Ser Gly Gln Met Trp Gln Leu
 130 135 140
 Ile Ala Val Ser Ala Leu Leu Gly Val Gly Ser Gly Leu Ile Val Pro
 145 150 155 160
 Leu Ser Thr Gly Leu Ile Ser Lys Tyr Phe Val Gly Ser Tyr Arg Val
 165 170 175
 Lys Gln Phe Gly Leu Ser Ser Ala Ile Thr Asn Ile Thr Leu Val Val
 180 185 190
 Ala Thr Ala Val Thr Gly Tyr Leu Ala Glu Val Asn Trp His Leu Pro
 195 200 205
 Phe Val Val Tyr Leu Leu Pro Ile Ile Ser Leu Val Leu Ser Val Tyr
 210 215 220
 Leu Gln Arg Ser Met Ala Ser Glu Gly Ser Thr Ser Leu Thr Asn Asp
 225 230 235 240
 Lys Ala Pro Ala Asp Lys Glu Glu Asp Val Asp Thr Gly Asn Ser Lys
 245 250 255
 Tyr Gly Ile His Val Arg His Leu Ala Gly Ile Met Gly Val Tyr Gly
 260 265 270
 Leu Ala Thr Phe Leu Val Leu Val Val Ser Phe Asn Leu Pro Phe Leu
 275 280 285
 Met Glu Glu Tyr His Phe Thr Ser Gly Asn Ser Gly Ile Met Ile Ser
 290 295 300
 Leu Phe Phe Leu Ala Ile Met Thr Pro Gly Phe Phe Leu Asn Arg Ile
 305 310 315 320
 Val Gly Thr Leu Lys Glu Lys Thr Lys Phe Tyr Ser Phe Leu Ser Ile
 325 330 335
 Gly Ile Gly Leu Ala Leu Ile Trp Ile Ser Pro Lys Glu Trp Val Ile
 340 345 350
 Ala Pro Gly Cys Ile Leu Val Gly Leu Gly Tyr Gly Val Ile Gln Pro
 355 360 365

4950

Val Val Tyr Asn Gln Thr Thr His Thr Ala Ile Ser Arg Lys Val Thr
 370 375 380
 Leu Ala Leu Ala Phe Val Met Ala Met Asn Tyr Leu Ala Ile Leu Leu
 385 390 395 400
 Cys Pro Phe Ile Ile Asp Phe Phe Gln Ser Thr Val Phe His Ile Lys
 405 410 415
 Ser Gln Gln Phe Ala Phe Val Phe Asn Leu Cys Ile Ser Ile Val Met
 420 425 430
 Leu Val Ile Ser Tyr Thr Lys Arg Asn Ser Phe Leu Phe Asn Asp Asn
 435 440 445
 Leu Lys
 450

<210> 8878

<211> 486

<212> PRT

<213> B.fragilis

<400> 8878

Leu Lys Ile Arg Val Ile Met Glu Asp Leu Asn Phe Arg Lys Gly Asp
 1 5 10 15
 Ala Lys Thr Glu Ala Phe Gly Ser Asn Arg Met Leu Gln Pro Ser Pro
 20 25 30
 Val Glu Lys Ile Pro Asp Gly Pro Thr Thr Pro Glu Ile Ala Tyr Gln
 35 40 45
 Met Val Lys Asp Glu Thr Phe Ala Gln Thr Gln Pro Arg Leu Asn Leu
 50 55 60
 Ala Thr Phe Val Thr Thr Tyr Met Asp Asp Tyr Ala Thr Lys Leu Met
 65 70 75 80
 Asn Glu Ala Ile Asn Ile Asn Tyr Ile Asp Glu Thr Glu Tyr Pro Arg
 85 90 95
 Ile Ala Val Met Asn Gly Lys Cys Ile Asn Ile Val Ala Asn Leu Trp
 100 105 110
 Asn Ser Pro Glu Lys Asp Thr Trp Lys Thr Gly Ala Leu Ala Ile Gly
 115 120 125
 Ser Ser Glu Ala Cys Met Leu Gly Gly Val Ala Ala Trp Leu Arg Trp
 130 135 140
 Arg Lys Lys Arg Gln Ala Gln Gly Lys Pro Phe Asp Lys Pro Asn Phe
 145 150 155 160
 Val Ile Ser Thr Gly Phe Gln Val Val Trp Glu Lys Phe Ala Gln Leu
 165 170 175
 Trp Gln Ile Glu Met Arg Gln Val Pro Leu Thr Leu Asp Lys Thr Thr
 180 185 190
 Leu Asp Pro Glu Glu Ala Leu Lys Met Cys Asp Glu Asn Thr Ile Cys
 195 200 205
 Val Val Pro Ile Gln Gly Val Thr Trp Thr Gly Leu Asn Asp Asp Val
 210 215 220
 Glu Ala Leu Asp Lys Ala Leu Asp Ala Tyr Asn Ala Lys Thr Gly Tyr
 225 230 235 240
 Asp Ile Pro Ile His Val Asp Ala Ala Ser Gly Gly Phe Ile Leu Pro
 245 250 255
 Phe Leu Tyr Pro Asp Thr Lys Trp Asp Phe Arg Leu Lys Trp Val Leu
 260 265 270
 Ser Ile Ser Val Ser Gly His Lys Phe Gly Leu Val Tyr Pro Gly Leu
 275 280 285
 Gly Trp Val Val Trp Lys Gly Lys Glu Tyr Leu Pro Glu Glu Met Ala
 290 295 300
 Phe Ser Val Asn Tyr Leu Gly Ala Asn Ile Thr Gln Val Gly Leu Asn
 305 310 315 320

Phe Ser Arg Pro Ala Ala Gln Ile Leu Gly Gln Tyr Tyr Gln Phe Ile
 325 330 335
 Arg Leu Gly Phe Gln Gly Tyr Lys Glu Val Gln Tyr Asn Ser Leu Gln
 340 345 350
 Ile Ala Lys Tyr Ile His Ser Gln Ile Ala Lys Met Thr Pro Phe Val
 355 360 365
 Asn Tyr Ser Glu Asp Val Val Asn Pro Leu Phe Ile Trp Tyr Met Lys
 370 375 380
 Pro Glu Tyr Ala Lys Asn Ala Lys Trp Thr Leu Tyr Asp Leu Gln Asp
 385 390 395 400
 Lys Leu Ala Gln His Gly Trp Met Val Pro Ala Tyr Thr Leu Pro Ala
 405 410 415
 Lys Leu Gln Asp Tyr Val Val Met Arg Val Val Val Arg Gln Gly Phe
 420 425 430
 Ser Arg Asp Met Ala Asp Met Leu Leu Gly Asp Ile Lys Asn Ala Ile
 435 440 445
 Ala Glu Leu Glu Lys Leu Glu Tyr Pro Thr Ser Thr Arg Ile Ala Gln
 450 455 460
 Glu Lys Asn Leu Pro Val Glu Ala Lys Val Phe Asn His Thr Gly Lys
 465 470 475 480
 Pro Gln Ala Ala Lys Lys
 485

<210> 8879
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 8879
 Arg Ile Ser Ser Met Ile Asn Ala Gln Asp Ile Lys Asn Gly Thr Cys
 1 5 10 15
 Ile Arg Met Asp Gly Lys Leu Tyr Phe Cys Ile Glu Leu Val His Val
 20 25 30
 Lys Pro Gly Lys Gly Asn Thr Phe Met Arg Thr Lys Leu Lys Asp Val
 35 40 45
 Val Ser Gly Tyr Val Leu Glu Arg Arg Phe Asn Ile Gly Glu Lys Leu
 50 55 60
 Glu Asp Val Arg Val Glu Arg Arg Pro Tyr Gln Tyr Leu Tyr Lys Glu
 65 70 75 80
 Gly Glu Asp Tyr Ile Phe Met Asn Gln Glu Thr Phe Asp Gln His Pro
 85 90 95
 Ile Ala His Asp Leu Ile Asn Gly Val Asp Phe Leu Leu Glu Gly Ala
 100 105 110
 Val Val Glu Val Val Ser Asp Ala Ser Thr Glu Thr Val Leu Tyr Ala
 115 120 125
 Asp Met Pro Ile Lys Val Gln Met Lys Val Thr Tyr Thr Glu Pro Gly
 130 135 140
 Leu Lys Gly Asp Thr Ala Thr Asn Thr Leu Lys Pro Ala Thr Val Glu
 145 150 155 160
 Ser Gly Ala Thr Val Arg Val Pro Leu Phe Ile Ser Glu Gly Glu Thr
 165 170 175
 Ile Glu Ile Asp Thr Arg Asp Gly Ser Tyr Val Gly Arg Val Lys Ala
 180 185 190

<210> 8880
 <211> 470
 <212> PRT
 <213> B.fragilis

<400> 8880

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Asn Ser Thr Arg Met Lys Arg Leu Phe Tyr Phe Phe Leu Phe Val Cys
1      5      10      15
Val Ala Val Ile Ala Asn Ala Gln Ala Lys Tyr Val Phe Tyr Phe Ile
20      25      30
Gly Asp Gly Met Gly Val Asn Gln Val Asn Gly Thr Glu Met Tyr Arg
35      40      45
Ala Glu Ile Gln Lys Gly Arg Ile Gly Val Glu Pro Leu Leu Phe Thr
50      55      60
Gln Phe Pro Val Gly Thr Met Ala Thr Thr Phe Ser Ala Thr Asn Ser
65      70      75      80
Val Thr Asp Ser Ser Ala Ala Gly Thr Ala Leu Ser Thr Gly Glu Lys
85      90      95
Thr Tyr Asn Gly Ser Ile Gly Met Asp Asp Gln Lys Asn Pro Leu Gln
100     105     110
Thr Val Ala Glu Lys Ala Lys Lys Ala Gly Lys Arg Val Gly Val Thr
115     120     125
Thr Ser Val Ser Val Asp His Ala Thr Pro Ala Ala Phe Tyr Ala His
130     135     140
Gln Pro Asp Arg Asn Met Tyr Tyr Glu Ile Ala Thr Asp Leu Pro Lys
145     150     155     160
Ala Gly Phe Asp Phe Tyr Ala Gly Ala Gly Phe Leu Lys Pro Thr Thr
165     170     175
Thr Tyr Asp Lys Lys Glu Ala Pro Ser Ile Phe Pro Met Phe Glu Glu
180     185     190
Ala Gly Tyr Thr Ile Ala Arg Gly Tyr Asn Asp Tyr Lys Ala Lys Ala
195     200     205
Ala Ala Ala Gly Lys Met Ile Leu Ile Gln Glu Glu Gly Ala Asp Thr
210     215     220
Gly Ser Leu Pro Tyr Ala Ile Asp Ser Lys Glu Gly Asp Leu Thr Leu
225     230     235     240
Ala Gln Ile Thr Glu Ser Ala Ile Asp Phe Leu Thr Lys Gly Lys Asn
245     250     255
Lys Gly Phe Phe Leu Met Val Glu Gly Gly Lys Ile Asp Trp Ala Cys
260     265     270
His Gly Asn Asp Ala Ala Thr Val Phe His Glu Val Ala Asp Met Asp
275     280     285
Asn Ala Ile Lys Val Ala Tyr Glu Phe Tyr Lys Lys His Pro Lys Glu
290     295     300
Thr Leu Ile Val Val Thr Ala Asp His Glu Thr Gly Gly Ile Ala Leu
305     310     315     320
Gly Thr Gly Lys Tyr Ala Leu Asn Leu Lys Ala Leu Glu Asn Gln Lys
325     330     335
Ala Ser Ala Glu Val Leu Ser Lys Lys Ile Ser Asp Leu Arg Lys Ala
340     345     350
Lys Asn Asn His Val Ala Trp Glu Asp Ile Lys Asn Leu Leu Ser Glu
355     360     365
Glu Met Gly Phe Trp Ser Val Leu Pro Ile Thr Trp Glu Gln Glu Lys
370     375     380
Lys Leu Arg Asp Glu Tyr Glu Lys Ser Phe Val Arg Asn Lys Val Glu
385     390     395     400
Phe Ala Glu Ser Met Tyr Ala Lys Thr Glu Pro Met Ala Ala Lys Ala
405     410     415
Lys Glu Val Met Asp Gln Ile Ala Met Val Gly Trp Thr Ser Gly Gly
420     425     430
His Ser Ala Gly Tyr Val Pro Val Phe Ala Ile Gly Ala Gly Ser Asp
435     440     445
Leu Phe Ile Gly Lys Met Asp Asn Thr Glu Ile Pro Lys Arg Ile Ala
450     455     460

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Lys Ala Gly Gly Tyr Lys
465 470

<210> 8881

<211> 376

<212> PRT

<213> B.fragilis

<400> 8881

Gln	Lys	Arg	Arg	Gln	Leu	Cys	Lys	Leu	Leu	Val	Ile	Arg	Glu	Gln	Asn		
1				5					10					15			
Ala	Leu	Leu	Phe	Leu	Ile	Lys	Asn	Ile	Ile	Phe	Val	Asn	Glu	Leu	Gln		
			20					25					30				
Thr	Tyr	Pro	Ile	Met	Lys	Gln	Thr	Ala	Tyr	Ile	Tyr	Leu	Leu	Thr	Leu		
		35					40						45				
Ser	Cys	Leu	Leu	Cys	Ala	Cys	Asn	Arg	Glu	Asn	Arg	Thr	Asn	Leu	Pro		
	50					55					60						
Gln	Pro	Gln	Val	Thr	Gly	Val	Ala	Asp	Ser	Leu	Glu	Thr	Val	Pro	Pro		
65					70					75					80		
Glu	Glu	Lys	Pro	Lys	Ala	Ile	Ser	Ala	Glu	Gln	Ile	Glu	Ile	Lys	Lys		
				85					90					95			
Asp	Leu	Leu	Tyr	Asp	Lys	Tyr	Thr	Leu	Glu	Asp	Thr	Tyr	Pro	Tyr	Lys		
			100					105					110				
Asp	Thr	Thr	Arg	Ser	Phe	Gln	Trp	Asp	Lys	Ile	Lys	Glu	Arg	Leu	Ala		
		115					120					125					
Leu	Leu	Glu	Asn	Ile	Gln	Gln	Thr	Pro	Ser	Gln	Trp	Gly	Ile	Leu	Gln		
	130					135					140						
Asn	Tyr	Lys	Asn	Arg	Asn	Gly	Glu	Ala	Pro	Leu	Val	Arg	His	Tyr	Lys		
145					150					155					160		
Arg	Asn	Ala	Tyr	Lys	Arg	Ile	Ala	Asp	Thr	Leu	Gly	Ile	Glu	Arg	Tyr		
				165					170					175			
Gln	Ser	Val	Pro	Leu	Tyr	Leu	Leu	Thr	Asp	Thr	Leu	Val	Pro	Glu	Arg		
			180					185					190				
Tyr	Gly	Glu	Asp	Gly	Ser	Leu	Val	Arg	Phe	Leu	Ala	Asp	Gly	Glu	Asn		
	195					200						205					
Phe	Val	Lys	Val	Ser	Pro	Ile	Tyr	Ile	Gly	Glu	Glu	Trp	Tyr	Val	Pro		
	210					215						220					
Lys	Arg	Tyr	Val	Lys	Val	Leu	Pro	Asp	Thr	Thr	His	Phe	Ile	Lys	Thr		
225					230					235					240		
Ile	Met	Ile	Asp	Arg	Arg	Asp	Gln	Asn	Ile	Met	Thr	Leu	Glu	Gln	Thr		
				245					250					255			
Gly	Glu	Ala	Gln	Trp	Thr	Val	Arg	Ser	Met	Asn	Pro	Ala	Thr	Thr	Gly		
		260						265					270				
Arg	His	Arg	Pro	Ser	Tyr	Ala	Gln	Glu	Thr	Pro	Leu	Gly	Ile	Phe	Val		
		275				280						285					
Leu	Gln	Glu	Lys	Lys	Thr	Arg	Met	Ile	Phe	Leu	Lys	Asp	Gly	Ser	Thr		
	290					295						300					
Ala	Thr	Gly	Arg	Phe	Ala	Pro	Tyr	Ala	Asn	Arg	Phe	Ser	Asp	Gly	Gly		
305					310					315					320		
Tyr	Ile	His	Gly	Val	Pro	Val	Asn	Glu	Pro	Arg	Lys	Ala	Leu	Ile	Glu		
				325					330					335			
Tyr	Ser	Pro	Ser	Leu	Gly	Thr	Thr	Pro	Arg	Ser	His	Met	Cys	Val	Arg		
			340					345					350				
Asn	Ala	Thr	Ser	His	Ser	Lys	Phe	Ile	Phe	Asp	Trp	Ala	Pro	Val	Asn		
		355				360						365					
Glu	Thr	Ile	Ile	Phe	Val	Leu	Glu										
	370					375											

<210> 8882

<211> 413
 <212> PRT
 <213> B.fragilis

<400> 8882

Lys	Cys	Asn	Gly	Asn	Ser	Glu	Lys	Pro	Arg	Lys	Gly	Lys	Arg	Ile	Asn
1				5					10					15	
Ser	Pro	Arg	Ser	Pro	Leu	Cys	His	Thr	Asp	Ile	Leu	Phe	Gln	Asp	Ile
			20					25					30		
Arg	Met	Gly	Glu	Val	Thr	Tyr	Arg	Gln	Lys	Ser	Ile	Tyr	Leu	Cys	Phe
		35					40					45			
Gln	Ile	Val	Ser	Ile	Met	Lys	Lys	Glu	Phe	Thr	Arg	Ile	Ala	Ile	Lys
	50					55					60				
Val	Gly	Ser	Asn	Val	Leu	Thr	Arg	Gln	Asp	Gly	Thr	Leu	Asp	Val	Thr
65					70					75				80	
Arg	Met	Ser	Ala	Leu	Thr	Asp	Gln	Ile	Ala	Ala	Leu	His	Lys	Ala	Gly
			85					90						95	
Val	Glu	Val	Ile	Leu	Ile	Ser	Ser	Gly	Ala	Val	Ala	Ser	Gly	Arg	Ser
		100						105					110		
Glu	Ile	Arg	Thr	Leu	Arg	Lys	Leu	Asp	Ser	Val	Asp	Gln	Arg	Gln	Leu
	115						120					125			
Phe	Ser	Ala	Val	Gly	Gln	Ala	Lys	Leu	Ile	Asn	Arg	Tyr	Tyr	Glu	Leu
	130				135						140				
Phe	Arg	Asp	His	Gly	Ile	Ala	Val	Gly	Gln	Val	Leu	Thr	Thr	Lys	Glu
145				150					155					160	
Asn	Phe	Gly	Thr	Arg	Arg	His	Tyr	Leu	Asn	Gln	Lys	Asn	Cys	Met	Thr
			165					170						175	
Val	Met	Leu	Glu	Asn	Gly	Val	Ile	Pro	Ile	Val	Asn	Glu	Asn	Asp	Thr
		180						185				190			
Ile	Ser	Val	Thr	Glu	Leu	Met	Phe	Thr	Asp	Asn	Asp	Glu	Leu	Ser	Gly
	195						200					205			
Leu	Ile	Ala	Ser	Met	Met	Asn	Ala	Gln	Ala	Leu	Ile	Ile	Leu	Ser	Asn
	210					215						220			
Ile	Asp	Gly	Ile	Tyr	Asn	Gly	Ser	Pro	Ser	Asp	Pro	Asp	Ser	Leu	Val
225				230						235				240	
Ile	Arg	Glu	Ile	Gly	Gln	Gly	Lys	Asp	Leu	Ser	Asn	Tyr	Ile	Gln	Thr
			245					250						255	
Ser	Lys	Ser	Ser	Phe	Gly	Arg	Gly	Gly	Met	Leu	Thr	Lys	Thr	Asn	Ile
		260						265					270		
Ala	Arg	Lys	Val	Ala	Asp	Glu	Gly	Ile	Thr	Val	Ile	Ile	Ala	Asn	Gly
		275					280					285			
Lys	Arg	Asp	Asn	Ile	Leu	Ile	Asn	Leu	Ile	Glu	His	Pro	Glu	Glu	Thr
	290					295					300				
Val	Cys	Thr	Arg	Phe	Ile	Pro	Ala	Ser	Gln	Pro	Val	Ser	Ser	Ile	Lys
305				310						315				320	
Lys	Trp	Ile	Ala	His	Ser	Glu	Gly	Phe	Ala	Lys	Gly	Glu	Ile	His	Ile
			325					330						335	
Asn	Glu	Gln	Ala	Thr	Glu	Val	Leu	Asn	Ser	Asp	Lys	Ala	Val	Ser	Ile
			340					345					350		
Leu	Pro	Val	Gly	Ile	Thr	Arg	Ile	Glu	Gly	Glu	Phe	Glu	Lys	Asp	Asp
		355					360					365			
Ile	Val	Arg	Ile	Ile	Asp	Tyr	Arg	Gly	Thr	Pro	Val	Gly	Val	Gly	Lys
	370					375					380				
Val	Asn	Cys	Asp	Ser	Met	Gln	Ala	Arg	Asp	Ser	Ile	Gly	Lys	His	Gly
385				390						395					400
Lys	Lys	Ala	Val	Val	His	Tyr	Asp	Tyr	Leu	Tyr	Ile	Glu			
			405						410						

<210> 8883

<211> 175
 <212> PRT
 <213> B.fragilis

<400> 8883

Thr	Asn	Leu	Gly	Val	Gln	Phe	Phe	Asn	Lys	Thr	Thr	Lys	Arg	Arg	Tyr
1				5					10					15	
Arg	Ala	Leu	Val	Trp	Gly	Ile	Val	Asp	Gln	Asp	Glu	Arg	Thr	Ile	Val
			20					25					30		
Gly	Ser	Ile	Ala	Arg	Asn	Pro	Lys	Asp	Arg	Met	Gln	Met	Ala	Val	Met
		35					40					45			
Ala	Asp	Pro	Thr	Gln	Gly	Lys	His	Ala	Val	Thr	His	Tyr	Arg	Val	Leu
	50					55					60				
Glu	Arg	Val	Gly	Tyr	Val	Thr	Leu	Val	Glu	Cys	Ile	Leu	Glu	Thr	Gly
65					70					75					80
Arg	Thr	His	Gln	Ile	Arg	Val	His	Met	Lys	His	Ile	Gly	His	Val	Leu
			85						90					95	
Phe	Asn	Asp	Glu	Arg	Tyr	Gly	Gly	His	Glu	Ile	Leu	Lys	Gly	Thr	His
			100					105					110		
Phe	Ser	Lys	Tyr	Lys	Gln	Phe	Val	Asn	Asn	Cys	Phe	Asp	Thr	Cys	Pro
		115					120					125			
Arg	Gln	Ala	Leu	His	Ala	Met	Thr	Leu	Gly	Phe	Val	His	Pro	Val	Thr
		130				135					140				
Gly	Glu	Glu	Met	His	Phe	Thr	Ser	Glu	Leu	Pro	Asp	Asp	Met	Thr	Arg
145					150					155					160
Leu	Ile	Glu	Lys	Trp	Arg	Gly	Tyr	Ile	Ser	Asn	Arg	Asp	Leu	Glu	
				165					170					175	

<210> 8884
 <211> 297
 <212> PRT
 <213> B.fragilis

<400> 8884

Arg	Ile	Met	Gly	Arg	Pro	Ile	Lys	Ile	Ile	Gly	Tyr	Leu	Cys	Phe	Leu
1				5					10					15	
Met	Ala	Leu	Cys	Ser	Cys	Lys	Glu	Thr	Lys	Glu	Gln	Gln	Ile	Ser	Arg
			20					25					30		
Leu	Ile	His	Lys	Trp	Glu	Gly	Arg	Thr	Ile	Val	Tyr	Pro	Ala	Asp	Met
		35					40					45			
Thr	Phe	Ser	Val	Leu	Gly	Lys	Asp	Ser	Ala	Gly	Tyr	Ser	Phe	Pro	Gln
	50					55					60				
Asn	Glu	Tyr	Thr	Ile	Met	Thr	Tyr	Val	Asp	Ser	Val	Gly	Cys	Thr	Ser
65					70					75					80
Cys	Lys	Leu	Gln	Leu	Pro	Thr	Trp	Lys	Tyr	Phe	Ile	Ser	Met	Val	Asp
			85						90					95	
Thr	Met	Ala	Asn	Gly	Lys	Val	Ser	Phe	Leu	Phe	Ala	Phe	His	Pro	Lys
			100					105					110		
Asn	Lys	Lys	Glu	Ile	Ser	Phe	Leu	Leu	Lys	Arg	Asp	Arg	Phe	Leu	Tyr
		115					120					125			
Pro	Val	Phe	Ile	Asp	Glu	Lys	Gly	Gly	Phe	Asp	Ala	Leu	Asn	His	Phe
		130				135					140				
Pro	Ser	Asp	Val	Asn	Phe	Gln	Thr	Phe	Leu	Leu	Asp	Ser	Gln	Asn	Lys
145					150					155					160
Val	Ile	Ala	Ile	Gly	Asn	Pro	Val	His	Asn	Lys	Lys	Val	Arg	Asp	Leu
				165					170					175	
Tyr	Leu	Gln	Ile	Thr	Gly	Arg	Gln	Thr	Gly	Val	Ala	Thr	Ser	Ser	
		180					185					190			
Gln	Thr	Lys	Val	Val	Leu	Asp	Lys	Lys	Leu	Asp	Glu	Met	Gly	Asp	Phe

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      195              200              205
Asp Trp Lys Ile Pro Gln Thr Ala Thr Phe Ser Leu Arg Asn Leu Gly
  210              215              220
Asp His Leu Leu Ile Ile Glu Asp Ile Asn Ala Ser Cys Gly Cys Thr
  225              230              235              240
Ser Val Thr Tyr Ser Lys Glu Pro Val Pro Ser Gly Lys Ser Ala Asp
      245              250              255
Ile Gln Val Thr Tyr Arg Ala Glu His Pro Glu His Phe Glu Lys Thr
      260              265              270
Ile Thr Val Tyr Cys Asn Thr Pro Thr Ser Pro Ile Arg Leu Lys Ile
      275              280              285
Arg Gly Asn Ala Ile Asp Glu Glu Tyr
      290              295

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<210> 8885
 <211> 114
 <212> PRT
 <213> B.fragilis

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<400> 8885
Leu Cys Leu Met Asn Phe Gln Arg Asn Thr Asp Met Thr Lys Phe Glu
  1              5              10              15
Ile Glu Glu Lys Ile Val Asp Met Leu Lys Thr Val Phe Asp Pro Glu
      20              25              30
Ile Pro Val Asn Val Tyr Asp Leu Gly Leu Ile Tyr Lys Ile Asp Val
      35              40              45
Ser Glu Asp Gly Glu Val Ser Ile Asp Met Thr Leu Thr Ala Pro Asn
      50              55              60
Cys Pro Ala Ala Asp Phe Ile Met Glu Asp Val Arg Gln Lys Val Glu
      65              70              75              80
Ser Ile Asp Gly Val Asn Ser Ala Thr Ile Asn Leu Val Phe Glu Pro
      85              90              95
Glu Trp Asp Lys Asp Met Met Ser Glu Glu Ala Lys Leu Glu Leu Gly
      100              105              110
Phe Leu

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<210> 8886
 <211> 521
 <212> PRT
 <213> B.fragilis

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<400> 8886
Ser Leu Ile Met Met Lys Thr Lys His Tyr Phe Ser Phe Val Phe Ala
  1              5              10              15
Ser Leu Phe Leu Ile Pro Ser Val Ile Thr Ala Gln Asp Val Asn Tyr
      20              25              30
Gln Lys Glu Phe Asp Thr Phe Gln Glu Lys Gln Gln Lys Glu Tyr Lys
      35              40              45
Glu Phe Lys Asn Lys Ala Asp Glu Glu Phe Ala Thr Phe Leu Lys Glu
      50              55              60
Ala Trp Gln Lys Tyr Asn Ala Ser Met Gly Asp Ser Met Pro Thr Arg
      65              70              75              80
Pro Glu Pro Val Lys Pro Thr Leu Phe Asp Lys Lys Lys Pro Val Pro
      85              90              95
Ala Pro Val Glu Ile Lys Pro Ala Val Pro Lys Ile Pro Ile Ala Asp
      100              105              110
Lys Pro Gly Val Gly Gly Lys Val Asn Val Glu Val Lys Lys Pro Glu
      115              120              125

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Leu Pro Ala Val Ala Asp Lys Pro Ala Pro Gly Val Tyr Val Pro Gly
 130 135 140
 Lys Pro Tyr Thr Pro Val Lys Val Asp Ile Pro Ala Pro Leu Pro Gly
 145 150 155 160
 Ser Ser Ala His Arg Asn Ala Ile Glu Phe Tyr Gly Thr Arg Phe Glu
 165 170 175
 Val Ala Thr Asp Val Ile Asp Gly Phe Glu Leu Gly Gly Thr Ser Glu
 180 185 190
 Ser Lys Val Ala Gly Ala Trp Ser Arg Leu Cys Lys Ala Asp His Glu
 195 200 205
 Gln Leu Ile Asn Asp Cys Ile Arg Leu Lys Lys Glu His Gln Met Asn
 210 215 220
 Asp Trp Ala Phe Leu Met Phe Ile Lys Gln Leu Gly Val Gln Met Cys
 225 230 235 240
 Gly Val Ala Lys Lys Asp Asp Val Ala Phe Leu Gln Met Phe Ile Leu
 245 250 255
 Asn Lys Cys Gly Tyr Lys Val Arg Leu Ser Lys Ile Asn Asp Lys Leu
 260 265 270
 Lys Leu Leu Val Ala Pro Ala Gly Thr Ile Phe Gly Ile Pro Tyr Ile
 275 280 285
 Thr Phe Lys Gly Val Lys Tyr Tyr Val Phe Glu Ala Asp Lys Gly Gly
 290 295 300
 Ser Met Ala Val Tyr Thr Tyr Ser Gln Asp Phe Ala Asn Ala Lys Asn
 305 310 315 320
 Leu Val Cys Met Asp Leu Ser Ala Val Pro Gln Phe Gly Met Gln Glu
 325 330 335
 Phe Ser Lys Thr Val Ser Pro Ser Glu Lys Ser Leu Leu Lys Val Asn
 340 345 350
 Thr Ala Val Asn Lys Asn Leu Met Asp Phe Tyr Lys Asp Tyr Pro Gln
 355 360 365
 Cys Glu Val Ala Val Tyr Tyr Lys Thr Pro Met Ser Lys Glu Leu Lys
 370 375 380
 Ser Ala Leu Tyr Pro Pro Leu Gln Ala Ala Ile Lys Gly Lys Ser Glu
 385 390 395 400
 Lys Asp Ala Ala Asn Ile Leu Ile Asp Phe Val Gln Asn Ser Phe Gln
 405 410 415
 Tyr Gln Thr Asp Gly Glu Gln Phe Gly Tyr Glu Lys Pro Phe Phe Met
 420 425 430
 Asp Glu Asn Phe Tyr Tyr Pro Ala Cys Asp Cys Glu Asp Arg Ala Ile
 435 440 445
 Leu Phe Ser Asn Leu Val Lys Asp Leu Leu Gly Leu Asp Ala Val Leu
 450 455 460
 Leu Asp Tyr Pro Asn His Ile Ala Ser Ala Val Arg Phe Asn Glu Asp
 465 470 475 480
 Ile Ser Gly Asp Tyr Ile Leu Leu Asp Gly Lys Lys Tyr Leu Ile Cys
 485 490 495
 Asp Pro Thr Tyr Ile Gly Ala Pro Ile Gly Met Cys Met Asp Arg Phe
 500 505 510
 Lys Ser Val Pro Pro Glu Ile Ile Arg
 515 520

<210> 8887

<211> 103

<212> PRT

<213> B.fragilis

<400> 8887

Lys Cys Ile Met Lys Val Lys Leu Leu Phe Val Ile Cys Leu Ser Val
 1 5 10 15

Phe Ser Leu Cys Gly Ile Tyr His Val Gln Ala Asn Lys Glu Asp Lys
 20 25 30
 Asn Val Ser Thr Leu Val Leu Gln Asn Ile Glu Ser Leu Ala Gln Asn
 35 40 45
 Glu Gly Asn Ser Asp His Gly Asn Ile Asp Thr Thr Leu Glu Pro Tyr
 50 55 60
 Tyr Tyr Gln Ser Ser Arg Asp Tyr Trp Leu Pro Gly Met Asn Gly Thr
 65 70 75 80
 Thr Glu Ile Pro Cys Cys Glu Lys Cys Glu Ser Lys Tyr Ser Gly Cys
 85 90 95
 Ala Lys Gly Leu Ala Arg Cys
 100

<210> 8888

<211> 424

<212> PRT

<213> B.fragilis

<400> 8888

Asn Arg Val Met Arg Ile Thr Asn Leu Phe Trp Thr Val Val Leu Leu
 1 5 10 15
 Ala Pro Leu Ser Val Phe Ala Gln Gln Lys Glu Asn Leu Phe Thr
 20 25 30
 Ile Asp Ala Gln Ile Arg Thr Arg Gly Glu Tyr Arg Asn Gly Val Leu
 35 40 45
 Asn Pro Arg Pro Glu Gly Glu Glu Pro Thr Phe Phe Val Asn Glu Arg
 50 55 60
 Ala Arg Leu Ser Leu Gly Tyr Gln Arg Asp Arg Leu Gln Met Arg Leu
 65 70 75 80
 Ser Ala Gln His Val Gly Val Trp Gly Gln Asp Pro Gln Ile Asp Lys
 85 90 95
 Asn Gly Arg Phe Ile Leu His Glu Ala Trp Ala Arg Leu Asp Phe Ser
 100 105 110
 Lys Gly Leu Phe Ala Gln Leu Gly Arg Gln Pro Leu Ser Tyr Asp Asp
 115 120 125
 Glu Arg Leu Leu Gly Gly Leu Asp Trp Asn Val Ala Gly Arg Phe His
 130 135 140
 Asp Ala Leu Lys Leu Gly Tyr Glu Ser Lys Leu His Lys Leu His Leu
 145 150 155 160
 Ile Leu Ala Phe Asn Gln Asn Asp Glu Asn Arg Ser Tyr Gly Gly Thr
 165 170 175
 Tyr Tyr Ala Pro Gly Ala Gln Pro Tyr Lys Thr Met Gln Thr Val Trp
 180 185 190
 Tyr Asn Gly His Trp Ala Lys Asp Phe Thr Val Ser Leu Leu Phe Met
 195 200 205
 Asn Thr Gly Phe Glu Thr Gly Thr Glu Gly Asn Gly Lys Thr Ala Asn
 210 215 220
 Met Gln Thr Met Gly Thr Tyr Leu Val Tyr Thr Pro Gly Ala Trp Leu
 225 230 235 240
 Phe Asn Gly Ser Ala Tyr Tyr Gln Phe Gly Lys Asn Lys Ala Asp Lys
 245 250 255
 Lys Val Ser Ala Tyr Met Phe Ser Leu Lys Ala Gly Tyr Lys Ile Asp
 260 265 270
 Pro Lys Trp Ser Val Ser Leu Gly Thr Asp Tyr Leu Ser Gly Asp Pro
 275 280 285
 Asp Ser Lys Lys Val Ser Thr Phe Asp Pro Leu Tyr Gly Thr His His
 290 295 300
 Lys Phe Tyr Gly Gly Met Asp Tyr Phe Tyr Ala Ser Ala Tyr Asn Lys
 305 310 315 320

Gly Leu Trp Asp Lys Ile Leu Ser Val Asp Phe Lys Pro Thr Lys Lys
 325 330 335
 Leu Ser Phe Ser Leu Asn Tyr His His Phe Ser Thr Thr Tyr Asp Val
 340 345 350
 Met Ala Thr Asp Gly Lys Glu Gly Arg Cys Leu Gly Ser Glu Leu Asp
 355 360 365
 Met Gln Val Asp Tyr Ile Leu Met Lys Asp Val Lys Leu Thr Ala Gly
 370 375 380
 Tyr Ser Thr Met Leu Gly Thr Lys Tyr Met Asp Ile Val Lys Gly Gly
 385 390 395 400
 Asn His Lys Ser Trp Gln Asp Trp Gly Trp Leu Thr Leu Asn Ile Asn
 405 410 415
 Pro Arg Ile Leu Phe Thr Lys Trp
 420

<210> 8889

<211> 85

<212> PRT

<213> B.fragilis

<400> 8889

Thr His Tyr Ile Pro Thr Ile Met Lys Glu Asp Lys Asp Thr Arg Val
 1 5 10 15
 Val Glu Val Phe Thr Gly Ser Pro Trp Glu Ala Glu Phe Ile Lys Gly
 20 25 30
 Leu Leu Glu Ser Asn Gly Ile Glu Ser Ile Leu Lys Asp Gly Gly Gly
 35 40 45
 Leu Ala Ala Leu Ala Pro Tyr Tyr Ile Gly Gln Glu Ile Ala Val Leu
 50 55 60
 Val Asn Glu Asp Asp Tyr Glu Asn Ala Met Glu Ile Val Arg Asn Arg
 65 70 75 80
 Glu Lys Ala Asn Glu
 85

<210> 8890

<211> 376

<212> PRT

<213> B.fragilis

<400> 8890

Ile Lys Asn Met His Ile Ile Lys Val Ile Phe Ser Leu Ala Leu Ile
 1 5 10 15
 Leu Asn Ile Cys Val Ser Cys His Glu Asn Asp Asp Thr Ala Tyr Phe
 20 25 30
 Asn Gly Lys Ile Gln Thr Ile Glu Asp Ser Ile Lys Asp Thr Lys Lys
 35 40 45
 Ala Thr Leu Lys Ile Leu Pro Leu Asp Gly Ala Asn Phe Gly Trp Leu
 50 55 60
 Ser Thr Tyr Asp Ser Leu Met Phe Phe Met Asn Pro Lys Leu Pro Asp
 65 70 75 80
 Arg Phe Tyr Asn Ile Phe Asn Ile Asp Thr Gly Lys Glu Ile Gly Thr
 85 90 95
 Phe Cys Tyr Arg Gly Ser Gly Pro Gly Glu Val Ala Ala Leu Gly Pro
 100 105 110
 Ile Phe His Phe Phe Lys Glu Lys Asp Leu Lys Thr Leu Leu Phe
 115 120 125
 Ala Pro Asn Glu Glu Lys Leu Phe Ile Trp Asn Ile Thr Gln Ser Ile
 130 135 140
 Lys Arg Asp Thr Thr Val Met Asp Lys Gln Ile Ser Tyr Pro Trp Arg

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145          150          155          160
Glu Glu Asn Gly Gly Ala Pro Tyr Tyr Leu Met Phe Leu Lys Asp Glu
165          170          175
Asn Thr Leu Ile Thr Glu Leu Gln Ser Phe Pro Leu Asn Asp Lys Glu
180          185          190
Ala Thr Leu Pro Ala Tyr Gln Lys Arg Thr Leu Asp Thr Asn Lys Leu
195          200          205
Leu Lys Ser Phe Ser Ser Tyr Lys Lys Ser Ile Arg Asn Asp Glu Ala
210          215          220
Ser Ile Leu Pro Glu Ser Phe Phe Tyr Ser Asn Asp Ala Ile Lys Pro
225          230          235          240
Asp Gly Thr Lys Val Val Gln Ala Met Val His Leu Ala Gln Leu Asn
245          250          255
Ile Leu Asp Leu Glu Thr Gly His Val Ser Gly Tyr Arg Leu Glu Gly
260          265          270
Glu Pro Asp Phe Ser Val Phe Lys Ser Asp Glu Lys Ile Lys Ser Tyr
275          280          285
Phe Thr Arg Val Gln Ala Asp Asp Asn Tyr Ile Tyr Ala Val Tyr Trp
290          295          300
Gly Lys Glu Arg Trp Glu Arg Phe Glu Thr Pro His Met Asn Ile Ile
305          310          315          320
His Val Tyr Asp Trp Asp Gly Asn Leu Val Gln Lys Ile Glu Thr Asp
325          330          335
Tyr Ser Ile Gly Gln Met Trp Ile Asp Pro Ile Arg Asn Arg Leu Tyr
340          345          350
Val Thr Asn Pro Gln Ile Asp Asp Val Leu Tyr Leu Asp Leu Asp Asp
355          360          365
Phe Leu Val Pro Asn Thr Gly Leu
370          375

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<210> 8891

<211> 285

<212> PRT

<213> B.fragilis

<400> 8891

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Glu Lys Asn Ile Tyr Lys Asn Met Ile Leu Ile Ala Asp Ser Gly Ser
1      5      10      15
Thr Lys Thr Asp Trp Cys Val Val Glu His Gly Gln Leu Ile Gln Gln
20      25      30
Ile Phe Thr Lys Gly Thr Asn Pro Phe Phe Gln Ser Glu Glu Glu Ile
35      40      45
Ser Asn Glu Ile Ala Thr Ala Leu Ile Pro Gln Leu Lys Thr Asn Lys
50      55      60
Phe Glu Ala Val His Phe Tyr Gly Ala Gly Cys Ala Phe Pro Asp Lys
65      70      75      80
Ile Glu Thr Met Arg Lys Ala Ile Ala Ser His Leu Gln Val Ser Gly
85      90      95
Glu Ile Glu Val Ser Thr Asp Met Leu Ala Ala Ala Arg Ser Leu Cys
100     105     110
Gly His Gln Pro Gly Ile Ala Cys Ile Met Gly Thr Gly Ser Asn Ser
115     120     125
Cys Tyr Tyr Asp Gly Lys Asn Ile Val Thr Asn Val Ser Pro Leu Gly
130     135     140
Phe Ile Leu Gly Asp Glu Gly Ser Gly Ala Val Leu Gly Lys Leu Leu
145     150     155     160
Val Gly Asp Ile Leu Lys Asn Gln Met Thr Pro Gly Leu Lys Glu Lys
165     170     175
Phe Leu Glu Gln Phe Asn Leu Thr Pro Ala Glu Ile Ile Asp Arg Val

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305          310          315          320
Ser Asp Leu Asn Thr Gln Ala Ser Ala Tyr Gln Ala Leu Tyr Glu Ile
          325          330          335
Lys Lys Glu Gln Gly Glu Leu Asn Asp Ala Ile Leu Tyr Asn Asp Thr
          340          345          350
Ser Leu Ile Leu Tyr Asp Ser Ile Gln Asp Leu Asn His Ser Ala Glu
          355          360          365
Ile Ser His Ile Leu Lys Gln His Ala Thr Glu Thr Leu Gln Gln Ala
          370          375          380
Glu Val Ile Lys Arg Gln Lys His Thr Ala Phe Leu Ile Val Thr Thr
385          390          395          400
Leu Leu Leu Ile Ala Cys Ile Thr Phe Ile Phe Leu Tyr Lys Asp Asn
          405          410          415
Lys Arg Lys Lys Val Tyr Ile Lys Ile Gln Cys Glu Leu Arg Asn Asn
          420          425          430
Gln Ile Glu Lys Asp Glu Leu Lys Glu Lys Ile Lys Thr Leu Ile Asp
          435          440          445
Ser Asn Thr Tyr Ile Ala Glu Arg Asn Lys Glu Leu Lys Lys Glu Glu
450          455          460
Leu Lys Gln Gln Gln Ile Glu Leu Trp Lys Arg Thr Leu Gln Ile Cys
465          470          475          480
Thr Arg Leu Phe His Thr Ser Thr Ser Tyr Lys Lys Leu His Ala Ile
          485          490          495
Glu Thr Ala Lys Phe Lys Lys Glu Arg Glu Glu Lys Gln Lys Glu Ile
          500          505          510
Asn Ser Ile Gln Lys Glu Ile Asn Glu Val Phe Ile Glu Ala Ile Gln
          515          520          525
Glu Leu Arg Glu Gln Tyr Pro Lys Leu Thr Gln Glu Asp Leu Phe Tyr
530          535          540
Cys Ile Leu Gln Tyr Leu Arg Leu Ser Thr Ser Thr Ile Lys Phe Cys
545          550          555          560
Met Arg Val Glu Ser Asn Gln Ala Leu Thr Gln Arg Lys Tyr Arg Ile
          565          570          575
Lys Lys Gln Ile Ser Pro Gln Thr Phe Ser Ile Ile Phe Asn Glu Ser
          580          585          590
Ser Pro Ser Glu Gly Val Leu
          595

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<210> 8893

<211> 437

<212> PRT

<213> B.fragilis

<400> 8893

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Thr His Thr Ile Ile Met Lys Asn Lys Asn Ile Ser Pro Trp Ala Trp
1          5          10          15
Ile Pro Thr Leu Tyr Phe Ala Gln Gly Leu Pro Tyr Val Ala Val Met
          20          25          30
Thr Ile Ser Val Ile Met Tyr Lys Asn Leu Gly Ile Ser Asn Thr Asp
          35          40          45
Ile Ala Leu Tyr Thr Ser Trp Leu Tyr Leu Pro Trp Val Ile Lys Pro
50          55          60
Phe Trp Ser Pro Phe Val Asp Leu Leu Lys Thr Lys Arg Trp Trp Ile
65          70          75          80
Val Ser Met Gln Leu Val Gly Ala Gly Leu Ala Gly Ile Ala Phe
          85          90          95
Thr Ile Pro Met Ser Asn Phe Phe Gln Thr Thr Leu Ala Ile Phe Trp
          100          105          110
Leu Val Ala Phe Ser Ser Ala Thr His Asp Ile Ala Ala Asp Gly Phe

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      115              120              125
Tyr Met Leu Ala Leu Asn Val Gln Asp Gln Ala Leu Tyr Val Gly Ile
    130              135              140
Arg Ser Thr Phe Tyr Arg Ile Ala Thr Ile Ala Gly Gln Gly Leu Leu
145              150              155              160
Val Met Leu Ala Gly Gly Leu Glu Ile Trp Thr Gly Ser Ile Lys Tyr
      165              170              175
Gly Trp Ser Ile Thr Phe Phe Ile Leu Ala Gly Leu Phe Leu Ala Phe
      180              185              190
Cys Leu Tyr His Lys Cys Ile Leu Pro Lys Pro Asn Ser Asp Lys Ala
      195              200              205
Val Val Gly Glu Asn Ser Ala Ser Ala Ile Phe Ser Gly Phe Ile Glu
      210              215              220
Thr Phe Ala Ser Phe Phe Arg Lys Lys Gln Ala Gly Val Ala Ile Leu
225              230              235              240
Phe Met Leu Phe Tyr Arg Phe Pro Glu Ala Gln Leu Val Lys Leu Ile
      245              250              255
Asn Pro Phe Leu Leu Asp Pro Ile Asp Lys Gly Gly Leu Gly Leu Thr
      260              265              270
Thr Ala Glu Val Gly Leu Val Tyr Gly Thr Ile Gly Ile Ile Gly Leu
      275              280              285
Thr Leu Gly Gly Ile Ile Gly Gly Ile Cys Ala Ala Lys Gly Gly Leu
      290              295              300
Gln Lys Trp Leu Trp Pro Met Ala Trp Ser Leu Ser Leu Thr Cys Leu
305              310              315              320
Thr Phe Val Tyr Leu Gly Tyr Phe Gln Pro Gln Asn Phe Val Ile Ile
      325              330              335
Asn Leu Cys Val Phe Ile Glu Gln Phe Gly Tyr Gly Phe Gly Phe Thr
      340              345              350
Ala Tyr Met Leu Tyr Leu Ile Tyr Tyr Ser Asp Gly Glu His Lys Thr
      355              360              365
Ala His Tyr Ala Ile Cys Thr Ala Phe Met Ala Leu Gly Met Met Leu
      370              375              380
Pro Gly Met Ala Ala Gly Trp Leu Gln Glu Leu Ile Gly Tyr Glu Asn
385              390              395              400
Phe Phe Ile Trp Val Met Val Cys Cys Thr Ala Thr Ile Ala Val Cys
      405              410              415
Ala Phe Ile Lys Ile Asp Pro Asn Tyr Gly Lys Lys Ala Glu Gly Ile
      420              425              430
Pro Gln Lys Thr Lys
      435

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<210> 8894

<211> 419

<212> PRT

<213> B.fragilis

<400> 8894

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Thr Asn Cys Ile Met Asn Leu Asn Asp Thr Phe Ala Ala Val Gln Ala
1      5      10      15
Ala Gly Arg His Leu Ala Leu Leu Pro Asp Asp Arg Ile Asn Gln Ile
      20      25      30
Leu Asn Ala Val Ala Glu Ala Ala Leu Glu Gln Thr Ser Tyr Ile Leu
      35      40      45
Ser Glu Asn Arg Lys Asp Leu Glu Arg Met Ser Pro Asp Asn Pro Lys
      50      55      60
Tyr Asp Arg Leu Arg Leu Thr Glu Glu Arg Leu Arg Gly Ile Ala Ser
      65      70      75      80
Asp Ile Arg Asn Val Ala Thr Leu Pro Ser Pro Leu Gly Arg Ile Leu

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85 90 95
 Lys Glu Ser Ile Arg Pro Asn Gly Met Arg Leu Thr Lys Ile Ser Val
 100 105 110
 Pro Phe Gly Val Ile Gly Ile Ile Tyr Glu Ala Arg Pro Asn Val Ser
 115 120 125
 Phe Asp Val Phe Ser Leu Cys Leu Lys Ser Gly Asn Ala Cys Ile Leu
 130 135 140
 Lys Gly Gly Ser Asp Ala Asp Tyr Ser Asn Arg Ala Ile Val Glu Val
 145 150 155 160
 Ile His Gln Val Leu Arg Gln Phe Asn Ile Asp Thr His Met Val Glu
 165 170 175
 Leu Leu Pro Ala Asp Arg Glu Ala Thr Arg Glu Leu Leu His Ala Ala
 180 185 190
 Gly Tyr Val Asp Leu Ile Ile Pro Arg Gly Ser Ser Ala Leu Ile Asn
 195 200 205
 Phe Val Arg Gln Asn Ala Thr Ile Pro Val Ile Glu Thr Gly Ala Gly
 210 215 220
 Ile Cys His Thr Tyr Phe Asp Glu Tyr Gly Asp Thr Ala Lys Gly Ala
 225 230 235 240
 Ala Ile Ile His Asn Ala Lys Thr Arg Arg Val Ser Val Cys Asn Ala
 245 250 255
 Leu Asp Cys Val Ile Val His Glu Ser Arg Leu Ser Asp Leu Pro Leu
 260 265 270
 Leu Cys Glu Lys Leu Lys Ala Asp Lys Val Ile Ile Tyr Ala Asp Pro
 275 280 285
 Ser Ala Tyr Gln Ala Leu Glu Gly His Tyr Pro Ala Gly Leu Leu Lys
 290 295 300
 Pro Ala Thr Pro Glu Ser Phe Gly Thr Glu Phe Leu Asp Tyr Lys Met
 305 310 315 320
 Ala Ile Lys Thr Val Asn Ser Phe Glu Asn Ala Leu Gly His Ile Gln
 325 330 335
 Glu Tyr Ser Ser Arg His Ser Glu Ser Ile Val Thr Glu Asn Pro Lys
 340 345 350
 Arg Ala Ala Leu Phe Thr Arg Met Val Asp Ala Ala Cys Val Tyr Thr
 355 360 365
 Asn Val Ser Thr Ala Phe Thr Asp Gly Ala Gln Phe Gly Leu Gly Ala
 370 375 380
 Glu Ile Gly Ile Ser Thr Gln Lys Leu His Ala Arg Gly Pro Met Gly
 385 390 395 400
 Leu Glu Glu Ile Thr Ser Tyr Lys Trp Ile Ile Glu Gly Asp Gly Gln
 405 410 415
 Thr Arg Gln

<210> 8895

<211> 184

<212> PRT

<213> B.fragilis

<400> 8895

Lys Lys Arg Met Ile Glu Glu Leu Pro Asp Asp Ile Glu Gln Asp Glu
 1 5 10 15
 Leu Asp Asp Ile Glu Pro Val Gly Asp Glu Asn Gln Leu Tyr Glu His
 20 25 30
 Phe Arg Val Val Val Asp Lys Gly Gln Ala Met Val Arg Val Asp Lys
 35 40 45
 Tyr Leu Phe Glu Arg Ile Val Asn Ala Ser Arg Asn Arg Ile Gln Lys
 50 55 60
 Ala Ala Glu Asp Gly Phe Val Met Ala Asn Gly Lys Pro Val Lys Ser

65 70 75 80
 Ser Tyr Lys Val Lys Pro Leu Asp Val Ile Thr Val Met Met Asp Arg
 85 90 95
 Pro Arg Tyr Asp Asn Glu Ile Ile Pro Glu Asp Ile Pro Leu His Ile
 100 105 110
 Val Tyr Glu Asp Lys Tyr Leu Met Val Val Asn Lys Pro Ala Gly Leu
 115 120 125
 Val Val His Thr Gly His Gly Asn Tyr His Gly Thr Leu Val Asn Ala
 130 135 140
 Ile Ala Trp His Leu Lys Asp Asn Pro Asp Tyr Asp Ala Asn Asp Pro
 145 150 155 160
 His Val Gly Leu Val His Arg Ile Asp Lys Asp Thr Ser Gly Leu Leu
 165 170 175
 Val Ile Ala Lys Thr Pro Asp Ala
 180

<210> 8896

<211> 202

<212> PRT

<213> B.fragilis

<400> 8896

Ile His Ser Ile Ile His Thr Met Lys Val Lys Glu Tyr Ile Gln Trp
 1 5 10 15
 Leu Leu Pro Ser Arg Lys Trp Arg Val Leu Ala Ile Ile Ile Thr Gly
 20 25 30
 Val Ile Val Gly Gly Gly Ala Leu Phe Leu Tyr Met Leu Arg Ala His
 35 40 45
 Thr Tyr Leu Ala Asp Asp Pro Ser Ala Cys Val Asn Cys His Ile Met
 50 55 60
 Gly Pro Tyr Tyr Ala Thr Trp Phe His Ser Ser His Ser Arg Asn Ala
 65 70 75 80
 Thr Cys Asn Asp Cys His Val Pro His Glu Asn Pro Val Lys Lys Trp
 85 90 95
 Val Phe Lys Gly Met Asp Gly Met Arg His Val Ala Val Phe Leu Thr
 100 105 110
 Arg Gly Glu Lys Asp Val Leu Arg Ala Asn Lys Glu Ser Ala Glu Val
 115 120 125
 Ile Met Asn Asn Cys Ile Arg Cys His Thr Gln Leu Asn Thr Glu Phe
 130 135 140
 Val Asn Thr Gly Arg Ile Asp Tyr Met Met Ser Gln Val Gly Glu Gly
 145 150 155 160
 Lys Ala Cys Trp Asp Cys His Arg Asp Val Pro His Gly Gly Ser Asn
 165 170 175
 Ser Ala Ala Ser Thr Pro Asp Ala Leu Val Pro Tyr Pro Asp Ser Pro
 180 185 190
 Thr Pro Glu Trp Leu Arg Lys Met Ile Glu
 195 200

<210> 8897

<211> 642

<212> PRT

<213> B.fragilis

<400> 8897

Ala Phe Val Leu Thr Met Lys Tyr Val Leu Phe Ile Leu Leu Val Leu
 1 5 10 15
 Thr Leu Ala Ala Cys Gln Ser Glu Lys Asp Arg Arg Leu Glu Tyr Ala
 20 25 30

Leu Glu Phe Ala Gly Asp Asn Arg Val Glu Leu Glu Lys Val Leu Glu
 35 40 45
 His Tyr Arg Thr Asp Pro Glu Lys Leu Glu Ala Ala Arg Phe Leu Ile
 50 55 60
 Arg Asn Met Pro Gly Trp Tyr Ser Tyr Glu Gly Asn Glu Leu Asp Ser
 65 70 75 80
 Ile His His Leu Leu Val Gly Val Cys Glu Gly Arg Ser Ile Ser Lys
 85 90 95
 Arg Glu Lys Asn Lys Trp Asn Arg Ile Ser Phe Asn Ser Leu Ser Lys
 100 105 110
 Ile Tyr Asp Ala Gln Val Ile Thr Ala Glu Tyr Leu Ile Asp Asn Ile
 115 120 125
 Asp Leu Ala Phe Glu Val Trp Arg Lys Tyr Pro Trp Asn Arg Asn Leu
 130 135 140
 Pro Phe Asp Asp Phe Cys Glu Leu Ile Leu Pro Tyr Arg Ile Ala Asp
 145 150 155 160
 Glu Pro Leu Ser Asp Trp Arg Lys Leu Tyr Tyr Glu Asp Tyr Gly Thr
 165 170 175
 Leu Leu Asp Ser Leu Tyr Lys Gly Ser Asp Val Ile Glu Ala Ser Lys
 180 185 190
 Ile Ile Asp Gly Lys Leu Arg Lys Leu Tyr Tyr Ile Tyr Asn Thr Asp
 195 200 205
 Phe Arg Val Pro His Leu Asn Ala Val Phe Leu Tyr His Asn Arg Ile
 210 215 220
 Gly Tyr Cys Arg Glu Ala Cys Asp Leu Thr Ile Tyr Ala Met Arg Ala
 225 230 235 240
 Cys Gly Ile Pro Val Ala Thr Asp Tyr Phe Val Tyr Ser Pro Asp Tyr
 245 250 255
 Gln His Tyr His Cys Trp Thr Met Leu Arg Asp Thr Thr Gly Thr Phe
 260 265 270
 Leu Gln Phe Gly Phe Asn Glu Phe Glu Ala Ser Arg Asp Thr Leu Arg
 275 280 285
 His Asp Gly Arg Lys Lys Gly Lys Val Tyr Arg Tyr Cys Phe Gly Met
 290 295 300
 Gln Ala Asp Lys Asn Ser Gly Thr Ser Gly Asn Arg Gln Leu Ser Pro
 305 310 315 320
 Val Leu Lys Asn Arg Phe Val Lys Asp Val Thr Ser Glu Tyr Phe Gly
 325 330 335
 Ser Asn Asp Thr Thr Ile Pro Ile Gln Met Ser Gly Glu Gln Tyr Ile
 340 345 350
 Tyr Leu Gly Ile Phe Ser Pro Gly Gly Trp Ile Pro Ile Asp Met Ala
 355 360 365
 Leu Gly Asn Ala Gly Lys Val Thr Phe Arg Asp Ile Glu Pro Asp Val
 370 375 380
 Ile Tyr Gln Thr Leu Tyr Gln Gly Asp Gly Gly Lys Leu Tyr Pro Ala
 385 390 395 400
 Gly Tyr Pro Phe Ile Ser Lys Thr Gly Gly Gly Phe Val Leu Leu Lys
 405 410 415
 Pro Asn Ile Asp Leu Met Glu Glu Ala Ile Leu Lys Arg Lys Met Pro
 420 425 430
 Gln Gln Lys Thr Ile Ala Glu Trp Ala Tyr Arg Ala Ile Ile Gly Ala
 435 440 445
 Lys Val Glu Ala Ala Asp Asp Leu Ser Phe Met Gln Ala Asp Leu Leu
 450 455 460
 Trp Gln Phe Glu Asp Thr Leu Thr Thr Asn Tyr Cys Val Leu Thr Pro
 465 470 475 480
 Leu Leu Arg Lys Lys Tyr Arg Tyr Val Arg Tyr Val Ala Pro Ile Gly
 485 490 495
 Lys Arg Met Glu Leu Ala Glu Leu Ala Leu Phe Lys Asp Ser Leu Cys

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          500                      505                      510
Lys Glu Lys Val Arg Leu Gly Arg Ile Asn Ser Ile Glu Pro Ile Ala
      515                      520                      525
Lys Leu Glu Tyr Val Thr Asp Gly Asn Ile Leu Thr Tyr Phe Gln Ala
      530                      535                      540
Arg Asp Thr Ser Cys Tyr Leu Ala Tyr Asp Leu Gly Glu Ser Thr Leu
545                      550                      555                      560
Ile Glu Arg Ile Val Phe Ser Pro Arg Asn Asp Asp Asn Tyr Ile Trp
      565                      570                      575
Pro Gly Asp Asn Tyr Glu Leu Phe Tyr Gln Asp Gly Ile Asn Gly Trp
      580                      585                      590
Lys Ser Leu Gly Ser Lys Val Ala Thr Glu Arg Glu Ile Asp Phe Leu
      595                      600                      605
Val Pro Gln Asn Ala Leu Leu Trp Leu Arg Asn Arg Thr Lys Gly Arg
      610                      615                      620
Glu Glu Gln Val Phe Ile Tyr Lys Asn Gly Arg Gln Tyr Phe Ala Phe
625                      630                      635                      640
Asp Leu

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<210> 8898

<211> 217

<212> PRT

<213> B.fragilis

<400> 8898

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Gln Leu Ile Ile Met Thr Ile Lys Glu Phe Phe Ser Phe Lys Ala Asn
1          5          10          15
Arg Phe Phe Trp Ile Asn Ile Ile Ala Met Val Val Val Ala Val Leu
      20          25          30
Ile Val Val Gly Thr Leu Lys Gly Leu Asp Ile Tyr Thr Arg His Gly
      35          40          45
Glu Ala Val Ile Val Pro Asp Val Lys Gly Met Ser Val Ser Glu Ala
      50          55          60
Glu Lys Met Phe Arg Asn His Gly Leu Thr Cys Val Val Ser Asp Ser
65          70          75          80
Ser Tyr Val Lys Asn Lys Pro Ser Gly Ile Ile Leu Asp Leu Asn Pro
      85          90          95
Ser Val Gly Gln Lys Val Lys Glu Gly Arg Thr Ile Tyr Leu Thr Ile
      100          105          110
Asn Thr Leu Ser Thr Pro Leu Ser Val Val Pro Asp Val Ala Asp Asn
      115          120          125
Ser Ser Val Arg Gln Ala Gln Ala Lys Leu Ile Ala Ala Gly Phe Lys
      130          135          140
Leu Thr Glu Asn Arg Met Val Ser Gly Glu Lys Asp Trp Val Tyr Gly
145          150          155          160
Val Ile Tyr Gln Gly Arg Gln Leu Gln Ile Gly Asp Lys Ala Pro Ile
      165          170          175
Gly Ala Thr Leu Thr Leu Met Val Gly Asp Gly Val Gln Ser Thr Ala
      180          185          190
Thr Asp Ser Val Asp Met Val Glu Asn Ala Ala Met Ser Val Glu Asp
      195          200          205
Ser Gly Thr Asp Asp Asp Ser Trp Phe
      210          215

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<210> 8899

<211> 1027

<212> PRT

<213> B.fragilis

<400> 8899

Leu Asn Ile Ile Met Lys Pro Ile Leu Thr Ser Leu Ile Leu Leu Leu
 1 5 10 15
 Thr Ala Gly Leu Phe Pro Gln Ala Ala Thr Gln Glu Leu Ser Lys
 20 25 30
 Glu Leu Arg Ser Gln Ile Gly Asp Phe Leu Asn Gly Thr Ala Arg Lys
 35 40 45
 Glu Ile Ser Val Gly Lys Ile His Ile Asp Ser Val Asn Thr Glu Gly
 50 55 60
 Asn Asp Leu Ile Leu Phe Ala Asn Ile Asn Cys Ser Tyr Ile Pro Phe
 65 70 75 80
 Arg Thr Asp Asn Val Ser Lys Ile Tyr Gln Gly Ile Lys Ala Leu Leu
 85 90 95
 Pro Pro Glu Leu Ala Lys Arg Lys Leu Gln Ile Arg Thr Asp His His
 100 105 110
 Ala Ile Glu Glu Leu Ile Pro Leu Ala Leu Arg Asn Thr Arg Gly Arg
 115 120 125
 Lys Ile Pro Thr Phe Ser Tyr Lys Ala Asp Thr Pro Leu Ile Thr Arg
 130 135 140
 Leu Ser Val Pro Tyr Thr Pro Thr Asn Gly Leu Gln Asn Arg His Ile
 145 150 155 160
 Ala Leu Trp Gln Ser His Gly Phe Tyr Tyr Glu Ser Lys Leu Ala Arg
 165 170 175
 Trp Glu Trp Gln Arg Ala Arg Ile Phe Gln Thr Val Glu Asp Leu Tyr
 180 185 190
 Thr Gln Ser Tyr Val Leu Pro Phe Leu Val Pro Met Leu Glu Asn Ala
 195 200 205
 Gly Ala Thr Ile Leu Leu Pro Arg Glu Arg Asp Pro Gln Thr Val Glu
 210 215 220
 Ile Ile Val Asp Asn Asp Arg Cys Arg Asp Gly His Ser Val Tyr Ser
 225 230 235 240
 Glu Leu Asn Gly Ser Lys Met Trp Lys Asn Gly Glu Glu Ala Gly Phe
 245 250 255
 Ala His Leu Lys Arg Thr Tyr Lys Asp Phe Glu Asn Pro Phe Arg Glu
 260 265 270
 Gly Thr Tyr Arg Gln Val Glu Thr Thr Lys Lys Gly Thr Val Ser Val
 275 280 285
 Ala Glu Trp Ile Pro Glu Ile Pro Arg Ala Gly Arg Tyr Ala Val Tyr
 290 295 300
 Ile Ser Tyr Lys Thr Val Asn Asn Ser Thr Glu Asp Ala Leu Tyr Thr
 305 310 315 320
 Val Tyr His Gln Gly Gly Lys Ser Gln Phe Lys Val Asn Gln Gln Met
 325 330 335
 Gly Gly Gly Thr Trp Ile Tyr Leu Gly Thr Phe Ser Phe Gly Ile Gly
 340 345 350
 Lys Thr Asp Cys Lys Ile Val Leu Ser Asn Gln Ser Ala Lys Glu Gly
 355 360 365
 Arg Leu Val Thr Ala Asp Ala Val Lys Ile Gly Gly Gly Tyr Gly Asn
 370 375 380
 Ile Ala Arg Ser Ile Ser Glu Glu Gly Val Thr Val Asn Thr Lys Ser
 385 390 395 400
 Ser Asp Thr Met Ile Thr Asp Thr Tyr His Pro Lys Ala Gln Val Asn
 405 410 415
 Tyr Pro Tyr Glu Ile Ser Gly Tyr Pro Arg Phe Cys Glu Ala Ala Arg
 420 425 430
 Tyr Trp Met Gln Trp Ala Gly Ile Pro Asp Ser Val Tyr Ser Asp Ser
 435 440 445
 His Gly Lys Asn Asp Tyr Thr Asp Asp Tyr Lys Ser Arg Gly Ile Trp

Ala Ala Arg Asn Gly Lys Val Lys Ser Val Ala Ser Pro Phe Pro Glu
 930 935 940
 Ile Thr Gly Ser Tyr Thr Tyr Tyr Gln Asp Leu Asn Pro Glu Ser Tyr
 945 950 955 960
 Val Val Glu Ser Pro Asp Ala Leu Glu Pro Ala Ala Gln Gly Ala Phe
 965 970 975
 Thr Ile Leu Arg Tyr Ser Glu Asn Asn Leu Ser Ala Gly Ile Ala Tyr
 980 985 990
 Lys Gly Asn Tyr Lys Thr Cys Val Leu Gly Phe Pro Phe Glu Ala Ile
 995 1000 1005
 Arg Thr Val Thr Glu Arg Glu Leu Leu Met Lys Ala Ile Leu Thr Phe
 1010 1015 1020
 Phe Glu His
 1025

<210> 8900

<211> 87

<212> PRT

<213> B.fragilis

<400> 8900

Lys Met Val Ile Ile Leu Phe Ile Lys Val Tyr Asp Met Gly Glu Ile
 1 5 10 15
 Lys Leu Ile Ser Ser Leu Phe Val Gln Gly Lys Arg Ser Leu Gly Asn
 20 25 30
 Cys Val Lys Ser Asn Glu Ser Ile Val Tyr Leu His Val Ala Gln Leu
 35 40 45
 Asp Asn Val Arg Leu Leu Leu Ile Lys Phe Ile Asp Glu Thr Gly Gly
 50 55 60
 Arg Lys Ile Ile Phe Tyr Leu Gln Ser Thr Leu Phe Leu Ile Phe Phe
 65 70 75 80
 Ala Lys Glu Asn Asp Glu Gln
 85

<210> 8901

<211> 342

<212> PRT

<213> B.fragilis

<400> 8901

His Asn Pro Met Ile Lys Glu Gln Val Lys Ser Leu Trp Lys Leu Cys
 1 5 10 15
 Phe Asp Asp Ser Glu Ala Phe Ile Glu Leu Tyr Phe Arg Leu Arg Tyr
 20 25 30
 Asn Asn Glu Val Asn Leu Ala Ile Gln Ser Gly Glu Glu Val Ile Ala
 35 40 45
 Ala Leu Gln Met Leu Pro Tyr Pro Met Thr Phe Cys Asn Lys Ile Val
 50 55 60
 Pro Thr Ser Tyr Ile Ser Gly Ala Cys Thr His Pro Asp Tyr Arg Ala
 65 70 75 80
 Lys Gly Val Met Arg Glu Leu Leu Ser Gln Ser Phe Ala Arg Met Leu
 85 90 95
 Arg Asn Gly Val Leu Phe Ser Thr Leu Ile Pro Ala Glu Pro Trp Leu
 100 105 110
 Phe Gly Tyr Tyr Ala Lys Thr Gly Tyr Thr Pro Ala Phe Arg Ile Ser
 115 120 125
 His Lys Val Phe Ser Leu Ser Glu Leu Thr Ile Gly Pro Glu Pro Asp
 130 135 140
 Thr Met Ile Glu Glu Thr Thr Glu Tyr Gln Glu Asp Tyr Tyr Gln Tyr

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145          150          155          160
Leu Thr Gly Lys Leu Ser Glu Arg Ala Cys Cys Leu Gln His Thr Pro
          165          170          175
Thr Asp Phe Lys Val Val Leu Ala Asp Leu Ala Leu Thr Gln Asn Thr
          180          185          190
Val Leu Ile Ala Arg Lys Asp Asn Arg Val Thr Gly Ile Ala Val Ala
          195          200          205
Tyr Lys His Asp Asp Ser Ser Tyr Ile Asn Glu Leu Phe Ala Asp Asn
          210          215          220
Glu Ala Val Arg Ala Gln Leu Leu Tyr Arg Ala Gly Leu Arg Asn Gly
225          230          235          240
Thr Glu Arg Ile Ile Leu Gln Leu Pro Pro Val Glu Ser Leu Pro Ser
          245          250          255
Val Pro Leu Gly Met Ala Arg Ile Ile Asp Ala Arg Ala Val Leu Gln
          260          265          270
Leu Tyr Ala Ala Gly Cys Pro Glu Val Glu Met Asn Ile Glu Leu Thr
          275          280          285
Asp Glu Gln Leu Ser Val Asn Asn Gly Tyr Tyr Tyr Leu Cys Lys Gly
          290          295          300
Lys Cys Met Thr Ser Glu Val Arg Leu Pro Gly Val His Thr Arg Met
305          310          315          320
Thr Ile Ala Glu Leu Ser Glu Lys Ile Leu Asp Glu Met Gln Pro Tyr
          325          330          335
Met Ser Leu Met Met Asn
          340

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<210> 8902
<211> 105
<212> PRT
<213> B.fragilis

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<400> 8902
Glu Asn Lys Met Lys Thr Arg Met Lys Ile Thr Ile Ala Phe Val Ala
1          5          10          15
Val Met Val Leu Ser Phe Thr Gly Tyr Asn Val Tyr Lys Thr Gln Lys
          20          25          30
Ala Ile Gln Leu Ser Asp Val Ala Met Ala Asn Val Glu Ala Leu Ala
          35          40          45
Asp Gly Glu Gly Thr Asn Ala Gly Tyr Cys Tyr Leu Glu Asp Thr Trp
          50          55          60
Ser Thr Lys Arg Gly Tyr Lys Tyr Phe Cys Asp Ser Lys Thr Asp Lys
65          70          75          80
Asn Thr Ile Tyr Pro Cys Pro Ser Ser Met Glu Ser Gly Trp Tyr Asp
          85          90          95
Asp Asn Lys Gln Asp Arg Cys Thr Lys
          100          105

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<210> 8903
<211> 313
<212> PRT
<213> B.fragilis

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<400> 8903
Glu Thr Lys Met Asn Lys Glu Ile Glu Thr Leu Leu Ser Glu Gln Leu
1          5          10          15
Ser Ser Trp Glu Thr Ala Gln Asn Asn Tyr Ala Val Leu Lys Arg Val
          20          25          30
Arg Ile Lys Asp Val Lys Val Asn Gly Cys Leu Tyr Arg Ile Gln Phe
          35          40          45

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Asn Pro Ala Arg Ile Val Ser Ser Ala Ala Lys Val Asp Asp Lys Ser
 50          55          60
Ile Gln Glu Arg Lys Cys Phe Leu Cys Pro Ala Asn Leu Pro Pro Met
 65          70          75          80
Gln Lys Gly Ile Pro Phe Gly Glu His Tyr Gln Ile Leu Val Asn Pro
          85          90          95
Phe Pro Ile Phe Pro Lys His Leu Thr Val Pro Glu Leu Gln His Val
          100          105          110
Glu Gln Arg Ile Leu His Arg Phe Ser Asp Met Leu Asp Leu Ala Thr
          115          120          125
Tyr Ala Glu Asp Tyr Ile Ile Phe Tyr Asn Gly Pro Gln Cys Gly Ala
          130          135          140
Ser Ala Pro Asp His Leu His Phe Gln Ala Gly Asn Lys Gly Phe Leu
          145          150          155          160
Pro Ile Glu Gln Glu Trp Lys Glu Lys Arg Gly Glu Lys Val Ile Thr
          165          170          175
Cys Lys Asp Ala Thr Leu Trp Ala Leu Asn Asp Tyr Pro Arg Ala Thr
          180          185          190
Leu Val Ile Glu Ala Gly Ser Lys Glu Thr Ala Ile Met Leu Phe Asn
          195          200          205
Thr Val Tyr Gln Ala Met Pro Ser Thr Ser Gly Glu Asp Glu Pro Met
          210          215          220
Met Asn Val Leu Val Trp Lys Glu Gln Lys Asn Trp Ile Val Cys Ile
          225          230          235          240
Phe Pro Arg Asn Lys His Arg Pro Ser Cys Tyr Thr Ala Glu Gly Asp
          245          250          255
Thr Asn Ile Leu Ile Ser Pro Ala Ser Val Asp Met Gly Gly Val Phe
          260          265          270
Ile Thr Pro Gln Glu Lys Asp Phe Glu Lys Ile Thr Ala Asn Asp Ile
          275          280          285
Ala Asp Ile Leu Gly Glu Val Cys Leu Arg Pro Ala Ala Phe Arg Ile
          290          295          300
Leu Ile Glu Arg Ile Lys Gln Gln Leu
          305          310

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<210> 8904

<211> 249

<212> PRT

<213> B.fragilis

<400> 8904

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Lys Ala Val Val Asp Val Cys Gln Ser Val Asp Gln Leu Phe Gly Arg
 1          5          10          15
Ser Ser Met Arg Ile Trp Thr Leu His Ile Val Leu Ser Val Leu Phe
          20          25          30
Ser Val Phe Leu Phe Ser Cys Asn Glu Asp Asp Gly Ala Pro Tyr Pro
          35          40          45
Ser Val Arg Leu Glu Phe Leu Thr Ala Glu Ser Gly Ala Asp Gly Arg
          50          55          60
Leu Gln Thr Leu Val Thr Asp Lys Gly Glu Arg Leu Val Val Ala Glu
          65          70          75          80
Asp Arg Thr Glu Ser Glu Leu Leu Pro Asn Ser Ser Ser Arg Val Val
          85          90          95
Ser Asn Tyr Glu Val Leu Ser Ser Val Gly Gly Arg Lys Glu Ile Arg
          100          105          110
Ile Tyr Ala Leu Ala Asn Thr Val Ser Pro Val Pro Leu Pro Ala Gly
          115          120          125
Glu Phe Arg Asn Gly Leu Lys Phe Asp Pro Val Asp Met Leu Ser Ile
          130          135          140

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Trp Met Gly Arg Asp Tyr Leu Asn Met Thr Leu Ser Ile Arg Ala Gln
 145 150 155 160
 Asn Ala Arg His Thr Phe His Phe Ile His Glu Ser Val Glu Arg Asp
 165 170 175
 Ala Val Thr Gly Lys Leu Lys Val His Leu Met Leu Tyr His Asp Asp
 180 185 190
 Gly Gly Asp Val Glu Ala Tyr Ala Lys Arg Ala Tyr Val Ser Val Pro
 195 200 205
 Leu Arg Gln Tyr Thr Ser Asp Ile Gly Glu Ser Ala Ile Ile Tyr Phe
 210 215 220
 Asn Phe His Thr Tyr Asp Gly Glu Val Gln Thr Tyr Gln Phe Glu Tyr
 225 230 235 240
 Val Pro Ser His Leu Thr Ile Asn Tyr
 245

<210> 8905
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 8905
 Lys Val Tyr Val Ile Leu Gln Phe Asp Arg Phe Ser Arg Phe Lys Arg
 1 5 10 15
 Ala Asn Ile Glu Asn Val Pro Tyr Ile Cys Asp Ser Ser Val Ile Tyr
 20 25 30
 Leu Gly Met Leu Ser Tyr Ile Lys Lys Tyr Pro Val Ser Leu Phe Ile
 35 40 45
 Ile Leu Ala Val Ile Tyr Leu Ser Phe Phe Lys Pro Pro Ser Thr Glu
 50 55 60
 Ile Ser Lys Ile Pro Asn Ile Asp Lys Val Val His Ile Cys Met Tyr
 65 70 75 80
 Phe Gly Met Ser Gly Met Leu Trp Leu Glu Phe Leu Arg Ala His Arg
 85 90 95
 Arg Asp His Thr Pro Val Trp His Ala Trp Val Gly Ala Phe Ile Cys
 100 105 110
 Pro Val Leu Phe Ser Gly Cys Val Glu Leu Leu Gln Glu Tyr Cys Thr
 115 120 125
 Thr Tyr Arg Gly Gly Asp Trp Met Asp Phe Ala Ala Asn Thr Thr Gly
 130 135 140
 Ala Val Leu Ala Ser Leu Ile Gly Tyr Phe Ile Ile Arg Pro Arg Ile
 145 150 155 160
 Leu Ser Lys Lys

<210> 8906
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 8906
 Ile Leu Arg Val Gly Val His Leu Ala Tyr Ser Lys Glu Pro Val Ser
 1 5 10 15
 Ser Gly Lys Ser Ala Asp Ile Gln Val Thr Tyr Arg Ala Glu His Pro
 20 25 30
 Glu His Phe Glu Lys Thr Ile Thr Val Tyr Cys Asn Thr Ser Thr Ser
 35 40 45
 Pro Ile Arg Leu Lys Ile Arg Gly Asn Ala Val Asp Lys Glu Asn
 50 55 60

<210> 8907
 <211> 323
 <212> PRT
 <213> B.fragilis

<400> 8907

Gln	Asn	Ser	Phe	Ile	Phe	Val	Ile	Tyr	Lys	Gln	Leu	Lys	Gly	Asn	Asn
1				5					10					15	
Asn	Phe	Met	Ile	Ala	Phe	Arg	Asp	Ile	Thr	Ile	Gln	Asp	Lys	Asp	Thr
			20					25					30		
Ile	Thr	Ala	Tyr	Thr	Met	Asn	Ser	Cys	Arg	Arg	Asn	Cys	Asp	Leu	Ser
		35					40					45			
Phe	Ser	Asn	Leu	Cys	Ser	Trp	Arg	Phe	Leu	Tyr	His	Thr	Lys	Phe	Ala
	50					55					60				
Ile	Ile	Asn	Asn	Phe	Leu	Val	Phe	Lys	Phe	Trp	Ala	Gly	Asp	Glu	Leu
65					70					75				80	
Ala	Tyr	Met	Met	Pro	Val	Gly	Glu	Gly	Asn	Leu	Glu	Glu	Val	Leu	Asn
				85					90					95	
Glu	Leu	Ile	Glu	Asp	Ala	Arg	Gln	Glu	Gly	Glu	Pro	Phe	Cys	Met	Leu
			100					105					110		
Gly	Val	Cys	Ser	Cys	Met	Arg	Glu	Asp	Leu	Glu	Ala	Ile	Met	Pro	Gly
		115					120					125			
Gln	Phe	Gly	Phe	Thr	Val	Asp	Arg	Asp	Tyr	Ala	Asp	Tyr	Ile	Tyr	Leu
	130					135					140				
Arg	Ser	Asp	Leu	Ala	Thr	Leu	Lys	Gly	Lys	Lys	Phe	Gln	Ser	Lys	Arg
145					150					155					160
Asn	His	Ile	Asn	Lys	Phe	Arg	Asn	Thr	Tyr	Pro	Asp	Tyr	Glu	Tyr	Ser
				165					170					175	
Pro	Ile	Thr	Lys	Asp	Arg	Ile	Gln	Glu	Cys	Leu	Glu	Leu	Glu	Ala	Lys
			180					185					190		
Trp	Cys	Lys	Ala	Asn	Asp	Cys	Asp	Gln	Gln	Glu	Gly	Thr	Gly	Asn	Glu
		195					200					205			
Arg	Arg	Ala	Leu	Ile	Tyr	Ala	Leu	Asn	His	Phe	Glu	Glu	Leu	Gly	Leu
		210				215					220				
Thr	Gly	Gly	Ile	Leu	His	Val	Asn	Gly	Gln	Ile	Val	Ala	Phe	Thr	Phe
225					230					235					240
Gly	Met	Pro	Ile	Asn	Lys	Glu	Thr	Phe	Gly	Val	His	Val	Glu	Lys	Ala
				245					250					255	
Asp	Thr	Ser	Ile	Asp	Gly	Ala	Tyr	Ala	Met	Ile	Asn	Tyr	Glu	Phe	Ala
			260					265					270		
Asn	His	Ile	Pro	Glu	Gln	Tyr	Ile	Tyr	Ile	Asn	Arg	Glu	Glu	Asp	Leu
			275				280					285			
Gly	Ile	Glu	Gly	Leu	Arg	Lys	Ala	Lys	Leu	Ser	Tyr	His	Pro	Glu	Thr
	290					295					300				
Ile	Leu	Glu	Lys	Tyr	Met	Ala	Cys	Leu	Lys	Glu	Gln	Pro	Val	Glu	Met
305					310					315					320
Ile	Lys	Trp													

<210> 8908
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 8908

Cys	His	Thr	Val	Val	Phe	Gln	Cys	Leu	Met	Val	Asn	Ser	His	Thr	Val
1				5					10					15	
Arg	Ser	Thr	Asp	Gly	Val	Leu	Thr	Thr	Val	Thr	Phe	Thr	Asp	Thr	Val
			20					25					30		

Phe Phe Ile Ile Leu Ala Met Glu Val Glu Leu Lys Ile Val Asn Asp
 35 40 45
 Leu Thr Ser Leu Phe Arg Gln Ser Val Phe Leu Tyr Gln Arg His Tyr
 50 55 60
 Ser Gln Phe His Arg Cys Gln Cys Ser Arg Gln Phe Gln Tyr Asn Ala
 65 70 75 80
 Ala Phe Thr Ile Phe Gln Leu Leu Phe Ala Ile Ser Ser Arg His Asn
 85 90 95
 Thr Glu Glu His Thr Ile Asn Thr Asp Arg Arg Phe Asp Tyr Val Arg
 100 105 110
 Ser Ile Arg Phe Val Gln Phe Arg Ile Glu Ile Leu Asn Ala Leu Ser
 115 120 125
 Arg Lys Phe Phe Val Leu Arg Lys Val Glu Ile Arg Thr Gly Val Asn
 130 135 140
 Thr Phe Tyr Phe Phe Glu Thr Lys Trp His Gln Glu Leu Asn Val Ser
 145 150 155 160
 Ser Gly Val Cys Ile Val Ser Gln Phe Ile Val Ile Val Glu Thr Ile
 165 170 175
 Met Ile Val Thr Lys Ala Gln Cys Leu Val Pro Leu Gln Thr Asn Phe
 180 185 190
 Phe Pro Phe Leu Glu Ile Phe Gln Phe Ala Ala Arg Thr Asn Lys Glu
 195 200 205
 Leu His Leu His Leu Phe Glu Leu Thr His Thr Glu Asp Glu Leu Thr
 210 215 220
 Gly Tyr Asn Leu Val Thr Glu Ser Phe Thr Asp Leu Ser Asp Thr Glu
 225 230 235 240
 Arg Asn Phe His Ala Ala Gly Arg Leu Tyr Val Gln Ile Ile Asp Lys
 245 250 255
 Asp Thr Leu Cys Arg Leu Arg Thr Lys Ile Asp Phe His Arg Thr Ile
 260 265 270
 Gly Ser Arg Thr His Ile Gly Arg Glu His Gln Ile Glu Leu Thr Asn
 275 280 285
 Phe Cys Pro Ile Leu Ser Thr Gly Asn Arg Ala Ser Tyr Phe Phe Val
 290 295 300
 Asn Asn Asp Leu Thr Glu Leu Phe Gln Ile Val Ile Val Gln Arg Phe
 305 310 315 320
 Cys Glu Thr Phe Val Gln Cys Ile Thr Leu Cys Leu Met Leu Lys Asn
 325 330 335
 Thr Pro Ile Gly Ala Ala Glu Leu Ser Phe Val Glu Ser Phe Thr Lys
 340 345 350
 Ser Phe Gly Ser Phe Gly His Leu Phe Ile Asn Leu Ile Ile Val Leu
 355 360 365
 Ser Gln Leu Ile Phe Asn Gln His Ile Gly Thr Val Ala Phe Phe Arg
 370 375 380
 Val Phe Ile Ile Asn Gln Arg Ile Val Lys Cys Ile His Met Ser Gly
 385 390 395 400
 Ser Leu Pro Asp Gly Arg Val His Lys Asp Cys Arg Val Asn Thr Asp
 405 410 415
 Asn Val Phe Val Gln Gln His His Ala Val Pro Pro Val Phe Phe Asn
 420 425 430
 Ile Val Phe Gln Phe Asn Thr His Leu Ser Val Val Ile His Arg Ala
 435 440 445
 Gln Ser Val Val Asp Ile Ala
 450 455

<210> 8909

<211> 112

<212> PRT

<213> B.fragilis

<400> 8909

Glu Arg Gly Phe Ser Thr Phe Asp Val Phe Arg Leu Leu Ser Gly Ser
 1 5 10 15
 Leu Val Lys Ile Ser Val Glu Trp Leu Asn Leu Ser Tyr Arg Arg Gly
 20 25 30
 Gln Gly Gly His Arg Val Phe Leu Ser Phe Arg Tyr Ala Tyr Ile Ile
 35 40 45
 Val Pro Ile Ser Val Val Phe Val Leu Trp Gly Gly Met Lys Gly Gly
 50 55 60
 Asn Lys Ile Glu Leu Pro Ala Phe Gln Pro Asp Ile Pro Ala Glu Cys
 65 70 75 80
 Arg Glu Ala Val Leu Met Ser Leu Cys Ile Leu Met Leu Ser His Asp
 85 90 95
 Leu Arg Lys Asn Arg His Glu Tyr Arg Ser Arg Leu Phe Arg Leu His
 100 105 110

<210> 8910

<211> 64

<212> PRT

<213> B.fragilis

<400> 8910

Gly Arg Gly Phe Leu Ile Ile Leu Thr Gly Leu Ile Tyr Phe Leu Thr
 1 5 10 15
 Leu Thr Gly Tyr Tyr Phe Asn Asn Lys Phe Gln Asp Val Gly Thr Met
 20 25 30
 Lys Arg Leu Phe Tyr Ile Leu Gln Pro His Leu Phe Ile Phe Trp Arg
 35 40 45
 Ile Phe Ile Lys Gln Lys Phe Gln Cys Leu Ser Leu Leu Ser Phe Phe
 50 55 60

<210> 8911

<211> 62

<212> PRT

<213> B.fragilis

<400> 8911

Ala Lys Arg Val Leu His Asn Lys Thr Thr Met Ser Arg Ile Phe Phe
 1 5 10 15
 Ile Lys Ile Val Leu Gly Gly Ser Phe Cys Cys Ser Lys Asp Thr Phe
 20 25 30
 Tyr Phe Asn Ile Lys Asn Asn Tyr Leu Glu Ile Phe Tyr Ile Ile Ile
 35 40 45
 Asp Asn Leu Gln Ile Gly Cys Tyr Arg Val Lys Leu Phe Ser
 50 55 60

<210> 8912

<211> 168

<212> PRT

<213> B.fragilis

<400> 8912

Ser Val Leu Leu Ile Ile Val Leu Tyr Ala Val Gly Met Thr Ala Gln
 1 5 10 15
 Ala Gln Lys Phe Ala Leu Ile Asp Met Glu Tyr Ile Val Lys Asn Ile
 20 25 30
 Pro Ala Tyr Glu Arg Ala Asn Glu Gln Leu Ser Gln Ala Thr Lys Gln
 35 40 45


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Trp Gln Gly Glu Val Glu Val Leu Ala Lys Glu Ala Arg Thr Met Phe
   50                      55                      60
Lys Asp Tyr Leu Ala Ala Tyr Ala Lys Leu Thr Ala Ala Gln Lys Thr
65                      70                      75                      80
Gln Ile Glu Asp Ala Val Val Glu Lys Glu Arg Val Ala Ser Gln Leu
                      85                      90                      95
Glu Arg Glu Cys Phe Gly His Glu Gly Glu Leu Phe Lys Lys Arg Glu
                      100                    105                    110
Glu Leu Met Lys Pro Ile Leu Asp Glu Ile Tyr Asn Ala Val Lys Ala
                      115                    120                    125
Val Ala Glu Glu Asn Gly Tyr Ala Val Val Val Asp Arg Ala Ser Ala
                      130                    135                    140
Ser Ser Ile Ile Phe Ala Thr Pro Arg Ile Asp Val Ser Asn Glu Val
145                      150                    155                    160
Leu Ala Lys Leu Gly Tyr Ser Asn
                      165

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<210> 8913

<211> 447

<212> PRT

<213> B.fragilis

<400> 8913

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Leu Phe Ile Phe Val Thr Gln Phe Leu Leu Leu Leu Pro Gly Asp Arg
1                      5                      10                      15
Lys Tyr Arg Pro Glu Ala His Leu Phe Gly Gln Gln Ile Leu Asn Val
                      20                      25                      30
Phe Pro Ser Tyr Met Ile Val Leu Ser Phe Ala Gln Ile Thr Asp Leu
                      35                      40                      45
Phe Arg Glu Tyr Phe Gly Arg Cys Phe Leu Val Leu Lys Cys Phe Glu
50                      55                      60
Ile Gln Gly Ile Leu Ser Ser Ser Gln Cys Asp Thr Ser Cys Phe Met
65                      70                      75                      80
Val Gly Ser Tyr His Asn Gln Ser Phe Phe Arg Val Phe Leu Val Lys
                      85                      90                      95
Leu Ile Ser Asn Phe Asp Gly Ile Ile His Ile Arg His Phe Val Glu
                      100                    105                    110
His Arg Ser Gly Ile Ile Pro Val Thr Ser Pro Val Tyr Leu Thr Pro
115                      120                    125
Phe Tyr His Gln Lys Glu Thr Phe Val Phe Ala Phe Ser Gln Lys Val
130                      135                    140
Asn Ser Ala Phe Cys Asn Leu Cys Gln Ser Gln Val Ser Phe Phe Thr
145                      150                    155                    160
Ile Asp Ser Ile Arg Gln Arg Ala Arg Ile Gly Thr Phe Phe Leu Asn
                      165                    170                    175
Gln Tyr His Leu Thr Cys Arg Ser Ser Phe Gly Phe Ile Ile Val Ile
                      180                    185                    190
Pro Thr Ser Asn Gly Val Thr Gly Phe Phe Lys His Arg Glu Asn Ala
195                      200                    205
Arg Ser Phe Phe Leu Ile Ile Ser Ser Gly Trp Phe Gln Glu Thr Gly
210                      215                    220
Thr Gly Ile Lys Ile Lys Thr Cys Phe Arg Lys Ile Gly Ser Tyr Phe
225                      230                    235                    240
Ile Ile His Ile Pro Ile Arg Leu Met Cys Val Glu Ser Ser Arg Ser
                      245                    250                    255
Ser Met Ile Asp Thr Asp Thr Gly Ser Asn Ser His Pro Phe Thr Gly
260                      265                    270
Phe Leu Cys Phe Leu Ser Asn Cys Leu Gln Arg Ile Leu Leu Ile Ile
275                      280                    285

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His Pro Asn Gly Thr Ile Ile Ser Leu Phe Ala Gly Gly Lys Ser Ser
 290 295 300
 Ser Arg Ser Arg Arg Ile Ser His Gly Ile Ser Gly Arg Glu Ser Ser
 305 310 315 320
 Ser His Cys Pro His Arg Glu Leu Cys Lys Lys Gln Arg Leu Tyr Thr
 325 330 335
 Asn Ala Ala Leu Leu Asp Phe Gly Thr Ile His Phe Arg Thr Ile His
 340 345 350
 Leu Ile Asp Thr His Ser Ile Thr Asn Glu Ile Glu Asn Ile Phe Cys
 355 360 365
 Leu Ser Ile Gly Tyr Asn Cys His Thr Asp Lys Lys Lys Glu Ile Lys
 370 375 380
 Lys Ser Phe His Ser Cys Thr Ile Leu Ser Leu Phe Glu Leu Val Ile
 385 390 395 400
 Ala Lys Ile Lys Ile Leu Lys Arg Arg Lys Gly Glu Arg Asp Met Asn
 405 410 415
 Ile Leu Leu Asn Arg Ser Pro Ser Ile Asn Tyr Pro Ser Thr Gln Thr
 420 425 430
 Ala Ile Ser Asn Leu Pro His Ile Lys Lys Pro Glu Asn Arg Glu
 435 440 445

<210> 8914

<211> 404

<212> PRT

<213> B.fragilis

<400> 8914

Lys Val Ser Leu Leu Gln Gln Lys Leu Pro Pro Asn Thr Ile Phe Met
 1 5 10 15
 Lys Lys Ile Leu Leu Ile Val Val Leu Leu Cys Ser Thr Leu Phe Ala
 20 25 30
 Gln Ala Gln Lys Ser Asp Val Ile Ile Gly Ala Glu Gln Thr Lys Ala
 35 40 45
 Tyr Phe Pro Ile Leu Lys Asn Lys Arg Ile Ala Ile Phe Ser Asn His
 50 55 60
 Thr Gly Met Val Gly Asn Lys His Leu Leu Asp Ile Leu Leu Glu Asn
 65 70 75 80
 Asn Phe Asn Val Val Ala Ile Phe Ser Pro Glu His Gly Phe Arg Gly
 85 90 95
 Asn Ala Asp Ala Gly Glu His Val Ser Ser Thr Ile Asp Ser Lys Thr
 100 105 110
 Gly Val Pro Ile Leu Ser Leu Tyr Asn Gly Lys Ser Lys Lys Pro Ser
 115 120 125
 Glu Ala Ser Met Lys Lys Phe Asp Ile Leu Ile Val Asp Ile Gln Asp
 130 135 140
 Val Gly Leu Arg Phe Tyr Thr Tyr Tyr Ile Ser Met Val Arg Leu Met
 145 150 155 160
 Asp Ala Cys Ala Glu Tyr Asp Arg Lys Ile Leu Ile Leu Asp Arg Pro
 165 170 175
 Asn Pro Asn Gly His Tyr Val Asp Gly Pro Ile Leu Asp Met Lys Tyr
 180 185 190
 Lys Ser Gly Val Gly Gly Leu Pro Ile Pro Ile Val His Gly Met Thr
 195 200 205
 Leu Gly Glu Leu Ala Leu Met Val Asn Gly Glu Arg Trp Leu Pro Ser
 210 215 220
 Ser Arg Ile Cys Asp Val Thr Val Ile Pro Cys Lys Asn Tyr Thr His
 225 230 235 240
 Gln Thr Met Tyr Arg Leu Pro Ile Pro Pro Ser Pro Asn Leu Pro Asn
 245 250 255

Met Lys Ala Ile Tyr Leu Tyr Pro Ser Ile Cys Leu Phe Glu Gly Thr
 260 265 270
 Pro Val Ser Leu Gly Arg Gly Thr Thr Leu Pro Phe Gln Val Tyr Gly
 275 280 285
 His Pro Asn Met Thr Gly Tyr Asn Tyr Asn Phe Thr Pro Arg Ser Ile
 290 295 300
 Pro Gly Ala Lys Asn Pro Pro Gln Leu Asn Lys Leu Cys His Gly Val
 305 310 315 320
 Asn Leu Ser Asn Leu Ser Asp Glu Glu Ile Trp Lys Lys Gly Ile Asn
 325 330 335
 Leu Asp Tyr Leu Ile Asp Ala Tyr His Asn Leu Asn Met Gly Asp Arg
 340 345 350
 Phe Phe Arg Pro Phe Phe Glu Leu Leu Val Gly Thr Asp Tyr Val Arg
 355 360 365
 Lys Met Ile Glu Gly Gly Lys Ser Ala Asp Glu Ile Lys Ala Arg Trp
 370 375 380
 Lys Arg Asp Val Glu Arg Phe Lys Ile Gln Arg Lys Pro Tyr Leu Leu
 385 390 395 400
 Tyr Gln Asp Asn

<210> 8915

<211> 494

<212> PRT

<213> B.fragilis

<400> 8915

Asn Ile Ser Phe Ile Asn Leu Lys Ser Met Thr Pro Val Ala Val Leu
 1 5 10 15
 Ile Thr Ile Ala Ser Tyr Phe Leu Ile Leu Phe Thr Ile Ser Tyr Ile
 20 25 30
 Ala Gly Arg Lys Ala Asp Asn Glu Gly Phe Phe Val Gly Asn Arg Lys
 35 40 45
 Ser Ala Trp Tyr Val Val Ala Phe Ala Met Ile Gly Ser Ser Ile Ser
 50 55 60
 Gly Val Thr Phe Val Ser Val Pro Gly Met Val Gly Ile Ser Asn Phe
 65 70 75 80
 Ser Tyr Leu Gln Met Val Leu Gly Phe Val Thr Gly Gln Ile Ile Ile
 85 90 95
 Ala Phe Val Leu Ile Pro Leu Phe Tyr Arg Met Asn Leu Val Ser Ile
 100 105 110
 Tyr Glu Tyr Leu Glu Asn Arg Phe Gly Thr Ser Ser Tyr Lys Thr Gly
 115 120 125
 Ala Trp Phe Phe Phe Ile Ser Lys Ile Leu Gly Ala Ala Val Arg Leu
 130 135 140
 Tyr Leu Val Cys Leu Thr Leu Gln Leu Leu Val Phe Glu Pro Phe His
 145 150 155 160
 Met Pro Phe Ile Met Asn Val Ile Leu Thr Val Ala Leu Val Trp Leu
 165 170 175
 Tyr Thr Phe Arg Gly Gly Val Lys Ser Leu Ile Trp Thr Asp Ser Leu
 180 185 190
 Lys Thr Phe Cys Leu Ile Val Ser Val Val Leu Cys Ile Tyr Tyr Ile
 195 200 205
 Ser Thr Asp Leu Lys Leu Ser Phe Thr Glu Met Phe Ser Thr Val Ser
 210 215 220
 Asp Ser Ala Leu Ser His Met Phe Phe Phe Asp Asn Val Asn Asp Lys
 225 230 235 240
 Arg Tyr Phe Phe Lys Gln Phe Leu Ala Gly Val Phe Thr Met Ile Ala
 245 250 255

Met Thr Gly Leu Asp Gln Asp Met Met Gln Arg Asn Leu Ser Cys Lys
 260 265 270
 Asn Phe Lys Asp Ser Gln Lys Asn Met Ile Thr Ser Gly Ile Ser Gln
 275 280 285
 Phe Phe Ile Ile Leu Leu Phe Leu Met Leu Gly Val Leu Leu Tyr Thr
 290 295 300
 Phe Thr Ser His Gln Gly Ile Thr Asn Pro Ala Lys Ser Asp Glu Leu
 305 310 315 320
 Phe Pro Met Ile Ala Thr Gly Gly Tyr Phe Pro Ile Ile Val Gly Ile
 325 330 335
 Leu Phe Ile Ile Gly Leu Ile Ser Ser Ala Tyr Ser Ala Ala Gly Ser
 340 345 350
 Ala Leu Thr Ala Leu Thr Thr Ser Phe Thr Val Asp Ile Leu Gly Ile
 355 360 365
 Lys Gly Lys Thr Glu Asp Thr Val Arg Lys Thr Arg Lys Lys Val His
 370 375 380
 Val Gly Met Ala Ile Val Met Gly Ile Val Ile Phe Ile Phe Asn Leu
 385 390 395 400
 Leu Asn Asn Thr Ser Val Ile Asp Ala Val Tyr Ile Leu Ala Ser Tyr
 405 410 415
 Thr Tyr Gly Pro Ile Leu Gly Leu Phe Ala Phe Gly Ile Leu Thr Lys
 420 425 430
 Arg Gln Val Arg Asp Arg Tyr Ile Pro Leu Val Ser Ile Leu Ser Pro
 435 440 445
 Ile Leu Cys Phe Ile Leu Gln Lys Asn Ser Glu Thr Trp Phe His Gly
 450 455 460
 Tyr Gln Phe Ser Tyr Glu Leu Leu Ile Phe Asn Ala Leu Phe Thr Phe
 465 470 475 480
 Ile Gly Leu Cys Phe Leu Ile Lys Lys Thr Ile Asn Leu Thr
 485 490

<210> 8916

<211> 188

<212> PRT

<213> B.fragilis

<400> 8916

Phe His Thr Phe Ala Pro Asp Asn Leu Lys Val Ile Ile Gln Ile Asn
 1 5 10 15
 Asn Lys Thr Met Leu Lys Lys Ile Ala Leu Leu Met Met Leu Ile Leu
 20 25 30
 Pro Met Gly Val Phe Ala Gln Asn Leu Lys Phe Gly His Ile Asn Ala
 35 40 45
 Met Glu Ile Val Ser Ala Met Pro Glu Tyr Thr Lys Ala Gln Ser Glu
 50 55 60
 Leu Gln Ala Leu Asn Lys Gln Leu Gly Gln Asp Leu Gln Arg Ser Gln
 65 70 75 80
 Glu Glu Phe Ser Lys Lys Tyr Gln Glu Phe Met Gln Gln Lys Asp Ser
 85 90 95
 Leu Pro Ala Val Ile Ala Glu Arg Arg Gln Lys Glu Leu Glu Asp Met
 100 105 110
 Met Gln Arg Gln Glu Gln Phe Gln Ala Lys Ala Gln Gln Asp Met Glu
 115 120 125
 Lys Ala Asn Asn Asp Leu Met Ala Pro Val Tyr Lys Lys Leu Asp Asp
 130 135 140
 Ala Ile Lys Ala Val Gly Ala Ala Glu Gly Val Ile Tyr Ile Phe Asp
 145 150 155 160
 Met Ala Arg Thr Pro Ile Pro Tyr Val Asn Glu Ala Gln Ser Ile Asn
 165 170 175

Leu Thr Pro Lys Val Lys Thr Gln Leu Gly Ile Lys
 180 185

<210> 8917
 <211> 521
 <212> PRT
 <213> B.fragilis

<400> 8917
 Met Ile Lys Phe Val Asn Lys Thr Met Ala Pro Glu Asp Val Phe Lys
 1 5 10 15
 Lys Val Val Ser His Cys Lys Glu Tyr Gly Phe Val Phe Pro Ser Ser
 20 25 30
 Asp Ile Tyr Asp Gly Leu Gly Ala Val Tyr Asp Tyr Gly Gln Met Gly
 35 40 45
 Val Glu Leu Lys Asn Asn Ile Lys Lys Tyr Trp Trp Asp Ser Met Val
 50 55 60
 Leu Leu His Glu Asn Ile Val Gly Ile Asp Ser Ala Ile Phe Met His
 65 70 75 80
 Pro Thr Ile Trp Lys Ala Ser Gly His Val Asp Ala Phe Asn Asp Pro
 85 90 95
 Leu Ile Asp Asn Lys Asp Ser Lys Lys Arg Tyr Arg Ala Asp Val Leu
 100 105 110
 Ile Glu Asp Gln Leu Ala Lys Tyr Asp Asp Lys Ile Asn Lys Glu Val
 115 120 125
 Ala Lys Ala Ala Lys Arg Phe Gly Glu Ala Phe Asp Glu Ala Gln Phe
 130 135 140
 Arg Ser Thr Asn Gly Arg Val Leu Glu His Gln Ala Lys Arg Asp Ala
 145 150 155 160
 Leu His Glu Arg Phe Ala Lys Ala Leu Asn Asp Asn Asn Leu Glu Glu
 165 170 175
 Leu Arg Gln Ile Ile Val Asp Glu Glu Ile Ala Cys Pro Ile Ser Gly
 180 185 190
 Thr Lys Asn Trp Thr Glu Val Arg Gln Phe Asn Leu Met Phe Ser Thr
 195 200 205
 Asp Met Gly Ser Thr Ala Asp Gly Ser Met Lys Ile Tyr Leu Arg Pro
 210 215 220
 Glu Thr Ala Gln Gly Ile Phe Val Asn Tyr Leu Asn Val Gln Thr Thr
 225 230 235 240
 Gly Arg Met Lys Val Pro Phe Gly Ile Ala Gln Ile Gly Lys Ala Phe
 245 250 255
 Arg Asn Glu Ile Val Ala Arg Gln Phe Ile Phe Arg Met Arg Glu Phe
 260 265 270
 Glu Gln Met Glu Met Gln Phe Phe Val Arg Pro Gly Ser Glu Leu Glu
 275 280 285
 Tyr Phe Lys Lys Trp Lys Glu Ile Arg Leu Lys Trp His Lys Ala Leu
 290 295 300
 Gly Phe Gly Asp Asp His Tyr Arg Phe His Asp His Asp Lys Leu Ala
 305 310 315 320
 His Tyr Ala Asn Ala Ala Thr Asp Ile Glu Phe Leu Met Pro Phe Gly
 325 330 335
 Phe Lys Glu Val Glu Gly Ile His Ser Arg Thr Asn Phe Asp Leu Ser
 340 345 350
 Gln His Glu Lys Phe Ser Gly Lys Ser Ile Lys Tyr Phe Asp Pro Glu
 355 360 365
 Leu Asn Glu Ser Tyr Thr Pro Tyr Val Ile Glu Thr Ser Ile Gly Val
 370 375 380
 Asp Arg Met Phe Leu Ser Ile Met Ser Ala Ala Tyr Cys Glu Glu Gln
 385 390 395 400

Leu Glu Asn Gly Glu Ser Arg Val Val Leu Lys Leu Pro Ala Ala Leu
 405 410 415
 Ala Pro Val Lys Leu Ala Val Met Pro Leu Val Lys Lys Asp Gly Leu
 420 425 430
 Pro Glu Lys Ala Arg Glu Ile Ile Asp Asn Leu Lys Phe His Phe His
 435 440 445
 Cys Gln Tyr Asp Glu Lys Asp Ser Ile Gly Lys Arg Tyr Arg Arg Gln
 450 455 460
 Asp Ala Ile Gly Thr Pro Tyr Cys Val Thr Val Asp His Gln Thr Leu
 465 470 475 480
 Glu Asp Asn Cys Val Thr Leu Arg Asn Arg Asp Thr Met Glu Gln Glu
 485 490 495
 Arg Val Ala Ile Ser Glu Leu Asn Asn Ile Ile Ala Asp Arg Val Ser
 500 505 510
 Ile Thr Ser Leu Leu Lys Thr Ile Gln
 515 520

<210> 8918

<211> 357

<212> PRT

<213> B.fragilis

<400> 8918

Thr Met Lys Phe Ile Tyr Ser Ile Leu Phe Ala Leu Leu Trp Ile Gly
 1 5 10 15
 Val Thr Ile Thr Phe Gly Ser Tyr Leu Tyr Arg Met Gly Leu Pro Ile
 20 25 30
 Val Asn Ala Ser Ala Gln Lys Leu Leu Leu Arg Thr Ile Asp Glu Asp
 35 40 45
 Leu Glu Cys Arg Phe Arg Lys Leu Lys Pro Asn Gln Ala Tyr Val Thr
 50 55 60
 Gly Lys Lys His Thr Lys Asn Lys Lys Val Thr Leu Thr Asp Lys Ser
 65 70 75 80
 Gly Thr His Asn Val Arg Gln Phe Ala Ile Asp Thr Val Tyr Thr Asp
 85 90 95
 Thr Ser Phe Val His Arg Val Lys Gln Ser Tyr Leu Ile Glu Arg Asn
 100 105 110
 Ser Ile Asn Val Asp Ser Leu Asn Gln Lys Trp Gln Leu Lys Leu Arg
 115 120 125
 Met Asp Gly Ile Cys Ala Asn Thr Gly Ile Lys Leu Thr Asn Ser Leu
 130 135 140
 Lys Asn Gly Glu Arg Ile Ser Ala Ser Ser Gly Leu Asn Glu Pro Asp
 145 150 155 160
 Cys Phe Leu Leu Ala Tyr Ser Thr Gly Val Gly Tyr Gly Ile Lys Met
 165 170 175
 Asp Ala Phe Ile Arg Pro Phe Trp Ala Thr Val Val Leu Lys Ala His
 180 185 190
 Trp Asn Asn Ile Trp Thr Trp Asn Tyr Val Leu Phe Ser Leu Ile Phe
 195 200 205
 Cys Leu Phe Tyr Val Pro Gly Val Arg Leu Phe Leu Val Gln Val Leu
 210 215 220
 Ser Lys Phe Arg Ile Val Asp Asn His Val Lys Ser Ser Gln Pro Leu
 225 230 235 240
 Val Gln Gln Lys Ser Glu Phe Val Trp Glu Val Asn Gly Leu Thr Phe
 245 250 255
 Asp Tyr Leu Gln Arg Ser Ile Thr Tyr His Asn Gln Thr Cys Ile Leu
 260 265 270
 Arg Lys Gln Val Val Glu Val Leu Leu Ala Phe Leu Lys Val Pro Gly
 275 280 285

His Leu Leu Leu Asn Glu Asp Leu Lys Lys Leu Phe Trp Lys Glu Leu
 290 295 300
 Glu Asp Val Asp Ser Cys Met Glu Arg Arg Asn Arg Leu Ile Thr Asp
 305 310 315 320
 Leu Arg Thr Asp Leu Arg Lys Ile Gly Ala Asn Leu Gly Val Thr Leu
 325 330 335
 Val Asn Gly Gly Tyr Gln Leu His Phe Arg Ser Glu Asn Ser Lys Lys
 340 345 350
 Ser Val Lys Asn Gln
 355

<210> 8919

<211> 196

<212> PRT

<213> B.fragilis

<400> 8919

Leu Leu Ser Ser Pro Arg Glu Ala Ser Ala Glu Ala Lys Arg Lys Trp
 1 5 10 15
 Ile Asn Ser Ile Arg Glu Val Ser Thr Trp Val Ser Arg Arg Glu Val
 20 25 30
 Tyr Gln Ala Leu Gly Arg Phe Ser Asn Met Arg Phe Gly Glu His Ile
 35 40 45
 Asp Phe Ser Ile Arg Ile Ser Lys Gly Gly Tyr Gln Cys Arg Leu Phe
 50 55 60
 Pro Asp Ala Trp Val Tyr His Lys Arg Arg Thr Asp Phe Lys Lys Phe
 65 70 75 80
 Phe Lys Gln Val His Asn Ser Gly Ile Ala Arg Ile Asn Leu Tyr Lys
 85 90 95
 Lys Tyr Pro Glu Ser Leu Lys Val Val His Leu Leu Pro Val Val Phe
 100 105 110
 Thr Ser Gly Val Ala Leu Leu Leu Leu Cys Thr Pro Phe Cys Leu Phe
 115 120 125
 Asn Leu Val Pro Ile Leu Leu Tyr Ala Leu Leu Val Cys Leu Asp Ser
 130 135 140
 Ala Leu Gln Asn Lys Ser Leu Arg Ile Gly Ile Tyr Ser Ile Ala Ala
 145 150 155 160
 Ser Phe Ile Gln Leu Ile Gly Tyr Gly Thr Gly Phe Trp Arg Ala Trp
 165 170 175
 Trp Glu Arg Cys Ile Leu Gly Arg Asn Glu Phe Glu Ala Phe Arg Lys
 180 185 190
 Asn Phe Tyr Lys
 195

<210> 8920

<211> 260

<212> PRT

<213> B.fragilis

<400> 8920

Thr Ile His Ser Tyr Ser Met Lys Asn Val Tyr Phe Leu Ser Asp Ala
 1 5 10 15
 His Leu Gly Ser Arg Ala Ile Glu His Gly Arg Thr Gln Glu Arg Arg
 20 25 30
 Leu Val Asn Phe Leu Asp Ser Ile Lys His Lys Ala Ala Val Tyr
 35 40 45
 Leu Leu Gly Asp Met Phe Asp Phe Trp Tyr Glu Phe Arg Leu Val Val
 50 55 60
 Pro Lys Gly Tyr Thr Arg Phe Leu Gly Lys Leu Ser Glu Leu Thr Asp

65				70				75				80			
Met	Gly	Val	Glu	Val	His	Phe	Phe	Thr	Gly	Asn	His	Asp	Ile	Trp	Cys
				85					90					95	
Gly	Asp	Tyr	Leu	Thr	Lys	Glu	Cys	Gly	Val	Thr	Ile	His	Arg	Glu	Pro
			100					105					110		
Val	Thr	Thr	Glu	Ile	Tyr	Gly	Lys	Glu	Phe	Tyr	Leu	Ala	His	Gly	Asp
			115				120					125			
Gly	Leu	Gly	Asp	Pro	Asp	Lys	Lys	Phe	Lys	Leu	Leu	Arg	Thr	Met	Phe
			130			135					140				
His	Ser	Arg	Thr	Leu	Gln	Thr	Leu	Phe	Ser	Ala	Ile	His	Pro	Arg	Trp
145					150					155				160	
Ser	Ile	Asp	Leu	Gly	Leu	Asn	Trp	Ala	Lys	His	Ser	Arg	Leu	Lys	Arg
			165						170					175	
Glu	Gly	Gly	Lys	Glu	Pro	Asp	Tyr	Met	Gly	Glu	Asn	Lys	Glu	Phe	Leu
			180					185					190		
Val	Leu	Tyr	Thr	Lys	Glu	Tyr	Leu	Lys	Ser	His	Pro	Asn	Ile	Asn	Phe
			195				200					205			
Phe	Ile	Tyr	Gly	His	Arg	His	Ile	Glu	Leu	Asp	Leu	Met	Leu	Ser	Ala
			210			215					220				
Thr	Ala	Arg	Ile	Leu	Ile	Leu	Gly	Asp	Trp	Ile	Asn	Phe	Phe	Ser	Tyr
225					230					235				240	
Ala	Val	Phe	Asp	Gly	Glu	Asn	Leu	Phe	Leu	Glu	Asn	Tyr	Ile	Glu	Gly
			245						250					255	
Glu	Thr	Gln	Leu												
			260												

<210> 8921
 <211> 123
 <212> PRT
 <213> B.fragilis

<400> 8921																
Ala	Met	His	Ser	Cys	Leu	Ile	Cys	Ile	Gly	Ser	Asn	Tyr	Asn	Arg	Lys	
1				5					10					15		
Glu	Asn	Leu	Leu	Leu	Ala	Arg	Arg	Arg	Leu	Thr	Ala	Leu	Phe	Pro	Ser	
		20						25					30			
Ile	Arg	Phe	Thr	Gly	Glu	Gln	Glu	Thr	Arg	Pro	Leu	Phe	Phe	Arg	Asn	
		35				40						45				
Pro	Ala	Leu	Phe	Ser	Asn	Gln	Met	Ala	Arg	Phe	Tyr	Thr	Asp	Ala	Asp	
		50				55					60					
Ala	Glu	Arg	Val	Val	Lys	Glu	Leu	Lys	Thr	Ile	Glu	Arg	Glu	Ala	Gly	
65					70				75					80		
Arg	Glu	Gln	Glu	Asp	Lys	Lys	Lys	Glu	Lys	Val	Cys	Leu	Asp	Ile	Asp	
			85					90					95			
Leu	Leu	Val	Phe	Asp	Asp	Arg	Ile	Leu	Arg	Pro	Glu	Asp	Leu	Gln	Arg	
			100					105					110			
Glu	Tyr	Val	Arg	Lys	Gly	Leu	Glu	Glu	Leu	Lys						
		115					120									

<210> 8922
 <211> 336
 <212> PRT
 <213> B.fragilis

<400> 8922																
Gly	Phe	Ser	Ser	Gly	Leu	Val	Ala	Arg	Leu	Tyr	Ala	Cys	Leu	Leu	Arg	
1				5					10					15		
Thr	Thr	Gln	Leu	Ile	Cys	Pro	Met	Lys	Arg	Pro	Thr	Ile	Pro	Leu	Met	
			20					25					30			


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Leu Leu Ile Ala Ala Ser Ile Phe Val Phe Phe Leu Leu Asn Leu Leu
  35          40          45
Leu Gly Ser Val Ser Ile Pro Ile Gly Ser Val Trp Asn Ile Leu Trp
  50          55          60
Gly Gly Thr Asp Glu Ser Val Ile Trp Gln Asn Ile Ile Trp Lys Ser
  65          70          75          80
Arg Val Pro Gln Ala Leu Thr Ala Leu Val Ala Gly Ala Gly Leu Ser
          85          90          95
Ile Ser Gly Leu Gln Met Gln Thr Ile Phe Arg Asn Pro Leu Ala Gly
          100          105          110
Pro Ser Val Leu Gly Ile Ser Ser Gly Ala Ser Leu Gly Val Ala Phe
          115          120          125
Val Val Leu Leu Ser Gly Ala Phe Gly Gly Val Ala Leu Ser Lys Leu
          130          135          140
Gly Tyr Met Gly Glu Val Ala Leu Ser Leu Ala Ala Val Ile Gly Ala
          145          150          155          160
Leu Ser Val Met Ala Leu Ile Val Tyr Val Ser Gln Lys Val Lys Gly
          165          170          175
Asn Val Thr Leu Leu Ile Ile Gly Val Met Ile Gly Tyr Val Ala Ser
          180          185          190
Ala Val Ile Gly Val Leu Lys Tyr Phe Ser Val Glu Glu Asp Ile Arg
          195          200          205
Ala Tyr Val Ile Trp Gly Leu Gly Ser Phe Ala Arg Val Ser Gly Asp
          210          215          220
Gln Met Thr Leu Phe Val Cys Ile Met Val Val Leu Ile Pro Leu Ser
          225          230          235          240
Phe Leu Leu Ile Lys Thr Met Asn Leu Met Leu Leu Gly Asp Gly Tyr
          245          250          255
Ala Arg Asn Leu Gly Leu Asn Ile Arg Arg Ala Arg Leu Val Gly His
          260          265          270
Phe Met Phe Gly Ser Ala Cys Ser His Arg Asp Arg Leu Leu Arg Thr
          275          280          285
Asp Tyr Val His Trp Phe Gly Gly Ser Ser Ser Leu Pro Cys His Leu
          290          295          300
Ser Tyr Leu Gly Ser Pro His Pro Asp Ala Gly His Phe Ala Gly Arg
          305          310          315          320
Cys Phe Val Gly Phe Gly Met Gln Ser Gly Cys Pro His Ala Gly Leu
          325          330          335

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<210> 8923

<211> 70

<212> PRT

<213> B.fragilis

<400> 8923

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Leu Ala Thr Pro Ser Ala Val Arg Thr Thr Lys Asn Val Leu Ser Ala
  1          5          10          15
Gly Phe Gly Leu Thr Met Ile Ser Lys Ser Ala Ala Thr Val Gly Gly
          20          25          30
Phe Phe Leu Ala Asp Met Met Leu Val Gly Val Asn Thr Pro Leu Thr
          35          40          45
Leu Ile Lys Val Ala Ala Ser Thr Leu Asp Val Pro Glu Ile Tyr Trp
          50          55          60
Asn Ala Phe Ser Val Ala
          65          70

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<210> 8924

<211> 350

<212> PRT

<213> B.fragilis

<400> 8924

Cys Asn Ala Pro Ser Ser Lys Gly Leu Phe Val Ser Ile Gly Ala Thr
 1 5 10 15
 Lys Val Thr Asp Tyr Leu Phe Thr Asp Lys Asn Ile Lys Thr Met Ile
 20 25 30
 Met Arg Asn Ile Asn Thr Asp Leu Ile Asp Ala Met Lys Ile Tyr Leu
 35 40 45
 Pro Lys Gly Asn Asn Leu Ala Asn Ala Leu Met Asp Ile Leu Tyr Leu
 50 55 60
 Gly Lys Glu Ala Thr Tyr Arg Arg Leu Arg Gly Glu Val Pro Phe Thr
 65 70 75 80
 Phe Ala Glu Val Ala Thr Ile Ser Gln His Met Gly Ile Ser Leu Asp
 85 90 95
 Lys Ile Val Gly Ala Asp Leu Asn Asp Asn Ala Ile Val Asn Leu Asn
 100 105 110
 Met Leu Gln Cys Gln Arg Pro Ala Glu Thr Tyr Tyr Ser Ile Ile Asp
 115 120 125
 Ser Tyr Ile Lys Leu Phe Gly Gln Leu Ile Glu Arg Glu Ser Ser Glu
 130 135 140
 Arg Ser Thr Ser Ser Asn Thr Val Pro Gln Thr Leu Tyr Leu Lys Tyr
 145 150 155 160
 Glu Ala Leu Ser Lys Phe Gln Leu Phe Lys Trp Ile Tyr Gln His Glu
 165 170 175
 Ser Thr Tyr Ala Gly Arg His Tyr Glu Asp Leu Glu Ile Pro Glu Lys
 180 185 190
 Leu Ile Asp Lys Gln Lys Glu Phe Val Asn Leu Ser Gln Leu Phe Gln
 195 200 205
 Ser Thr Asn Tyr Ile Trp Asp Lys Glu Ile Phe Ile Arg Leu Val Asn
 210 215 220
 Glu Val Lys Phe Phe Leu Asn Ile Asn Leu Ile Ser Glu Asp Ser Val
 225 230 235 240
 Lys Arg Ile Lys Lys Glu Leu Leu Ile Leu Leu Asn Glu Leu Glu Lys
 245 250 255
 Ile Ser Ala Gln Gly Lys Tyr Ser Ser Gly Lys Asp Val Lys Ile Tyr
 260 265 270
 Ile Ser Asp Ile Asn Phe Glu Ser Thr Tyr Ser Tyr Val Glu Thr Asp
 275 280 285
 Ile Tyr His Gln Cys Leu Ile Gly Val Phe Ser Ile Asn Ser Ile Thr
 290 295 300
 Ser Lys Asp Asp Phe Leu Phe Gln His Leu Lys Leu Trp Ile Gln Ser
 305 310 315 320
 Leu Lys Lys Tyr Ser Thr Leu Ile Ser Gln Ser Gly Glu Val Gln Arg
 325 330 335
 Ile His Phe Phe Asn Arg Gln Gln Glu Leu Val Lys Ser Leu
 340 345 350

<210> 8925

<211> 69

<212> PRT

<213> B.fragilis

<400> 8925

Ala Thr Glu Pro Ser Phe Ile Ala Ser Ala Lys Val Val Leu Phe Leu
 1 5 10 15
 Lys Ser Pro Lys Lys Ser Val Ser Phe Phe Thr Tyr Ile Phe Thr Tyr
 20 25 30
 Ile Phe Tyr Asn Pro Lys Gly Lys Leu Val Lys Tyr Gln Ile Lys Ser

35 40 45
 Asn Ile Val Gln Pro Ile Ser Ile Tyr Thr Glu Tyr Arg Gln Val Tyr
 50 55 60
 Phe Lys Ser Glu Pro
 65

<210> 8926
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 8926
 Asn Arg Glu Pro Val Val Phe Gln Leu Gln Gly Gln Asp Lys Leu Leu
 1 5 10 15
 Arg Gln Ala Ala Phe Asp Leu Leu Ile Leu Asp Ile Ile Met Pro Lys
 20 25 30
 Met Ile Gly Leu Glu Leu Cys Arg Leu Tyr Arg His Gln Tyr Gly Tyr
 35 40 45
 Leu Thr Pro Val Ile Met Leu Thr Ala Leu Gly Thr Thr Glu Asp Ile
 50 55 60
 Val Lys Gly Leu Asp Ser Gly Ala Asp Asp Tyr Leu Val Lys Pro Phe
 65 70 75 80
 Ser Phe Gln Glu Leu Glu Ala Arg Ile Lys Ala Ile Leu Arg Arg Gly
 85 90 95
 Arg Glu Asp Ser Val Gln Gln Leu Val Cys Asp Asp Leu Val Leu Asn
 100 105 110
 Cys Asn Thr Arg Arg Ala Arg Arg Lys Glu Val Glu Ile Glu Leu Thr
 115 120 125
 Val Lys Glu Tyr Arg Leu Leu Glu Tyr Phe Met Thr His Gln Gly Met
 130 135 140
 Val Leu Ser Arg Leu Thr Leu Leu Lys Asp Val Trp Asp Lys Asn Phe
 145 150 155 160
 Asp Thr Asn Thr Asn Val Val Asp Val Tyr Val Asn Tyr Leu Arg Gly
 165 170 175
 Lys Ile Asp Lys Glu His Asp Lys Lys Leu Ile His Thr Val Val Gly
 180 185 190
 Ser Gly Tyr Ile Met Tyr Ala
 195

<210> 8927
 <211> 90
 <212> PRT
 <213> B.fragilis

<400> 8927
 Arg Asn Lys Phe Leu Ser Glu Val Ile Glu Ile Leu Pro Gly Leu Phe
 1 5 10 15
 Lys Ile Ile Leu Pro Glu Ser Val Pro Gln Gly Leu Ser Leu Phe Leu
 20 25 30
 Lys Glu Ser Thr Ile Gln Pro Ile Asp Pro His Ala Gly Asn Leu Ala
 35 40 45
 Ser Asn Gln Gln Met Cys Leu Asn Ile Gly Arg Lys Glu Cys Phe Cys
 50 55 60
 Ser Arg Ser Leu Ser Ser Glu Arg Phe Ser Ile Thr Cys Asn Phe Tyr
 65 70 75 80
 Arg Leu Ser Leu Tyr Asp Val Pro Leu Cys
 85 90

<210> 8928

<211> 60
 <212> PRT
 <213> B.fragilis

<400> 8928

Thr	Thr	Thr	Thr	Arg	Phe	Glu	Ile	Gly	Asn	Tyr	Leu	Phe	Asp	Ser	Leu
1				5					10					15	
Ala	Gln	Thr	Leu	Thr	His	Ala	Gly	Leu	Lys	His	Glu	Leu	Ser	His	Arg
			20					25					30		
Glu	Ser	Glu	Ile	Leu	Arg	Ala	Thr	Leu	Arg	Lys	Ser	Glu	Ser	Ser	Gly
		35					40					45			
Gln	His	Thr	Glu	Cys	Ile	Thr	Arg	Pro	Met	Gly	Arg				
	50					55					60				

<210> 8929
 <211> 236
 <212> PRT
 <213> B.fragilis

<400> 8929

Gln	Met	Ile	Thr	Thr	His	Pro	Ile	Arg	Phe	Val	Ser	Leu	Gly	Pro	Gly
1				5					10					15	
Glu	Pro	Asp	Leu	Ile	Thr	Leu	Lys	Gly	Leu	Lys	Ala	Leu	Gln	Gly	Ala
			20					25					30		
Asp	Cys	Ile	Phe	Cys	Pro	Ala	Thr	Met	Thr	Gln	Asp	Gly	Lys	Ser	Ser
		35					40					45			
Ser	Arg	Ala	Leu	Ser	Ile	Leu	Asn	Thr	Leu	Gly	Phe	Ser	Asp	Thr	Val
	50					55				60					
Gln	Cys	Phe	Arg	Leu	Pro	Met	Asp	Lys	Asp	Arg	Thr	Leu	Ala	Leu	Arg
65					70				75					80	
Ser	Tyr	Glu	Ala	Val	Tyr	Glu	Ser	Ser	Lys	Ile	Leu	Arg	Ala	Glu	Gly
				85					90					95	
Gln	Asn	Val	Val	Ile	Val	Ala	Glu	Gly	Asp	Ala	Gly	Leu	Tyr	Ser	Ser
			100					105					110		
Ile	His	Tyr	Ile	Tyr	Asp	Lys	Leu	Gln	Gln	Asp	Asp	Ile	Pro	Val	Glu
		115					120					125			
Gln	Ile	Ala	Gly	Ile	Pro	Ala	Phe	Ile	Ala	Ser	Gly	Ala	Met	Ala	Gly
	130					135					140				
Leu	His	Ile	Val	Ser	Gln	Glu	Glu	Arg	Leu	Ile	Val	Ile	Pro	Gly	His
145					150				155					160	
Val	Thr	Ala	Lys	Glu	Leu	Asp	Asp	Tyr	Leu	Lys	His	Gln	Thr	Val	Val
			165						170					175	
Val	Ile	Met	Lys	Leu	Ser	Gln	Cys	Ile	Asp	Glu	Val	His	Gln	Cys	Ile
			180					185					190		
Ile	Asn	His	Pro	Glu	Tyr	Gln	Tyr	His	Tyr	Phe	Glu	Asn	Val	Gly	Thr
		195					200					205			
Glu	Lys	Glu	Tyr	Tyr	Ser	Cys	Ser	Thr	Glu	Glu	Leu	Arg	Glu	Lys	Arg
	210					215					220				
Tyr	Pro	Tyr	Phe	Ser	Val	Met	Ile	Ile	Arg	Phe	Gly				
225					230						235				

<210> 8930
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8930

Arg	Gly	Val	Thr	Leu	Ser	Glu	Ser	Asp	Asn	His	Tyr	Arg	Glu	Ile	Arg
1				5					10					15	

Ile Ser Phe Phe Pro Lys Phe Phe Gly Gly Ala Arg Val Val Phe Leu
 20 25 30
 Leu Gly Pro Tyr Ile Phe Lys Val Val Val Leu Val Phe Arg Met Val
 35 40 45
 Asn Tyr Thr Leu Val Tyr Leu Val Tyr Thr Leu Arg
 50 55 60

<210> 8931

<211> 492

<212> PRT

<213> B.fragilis

<400> 8931

Leu Ile Trp Thr Ile Trp Lys Gln Met Lys Ser Lys Trp Arg Met Pro
 1 5 10 15
 His Pro Ala Thr Met Phe Phe Leu Phe Thr Leu Ala Val Ile Phe Leu
 20 25 30
 Ser Trp Ile Phe Asp Ile Tyr Gly Leu Arg Val Gln Leu Pro Gln Thr
 35 40 45
 Gly Ala Glu Ile Arg Val Gln Ser Leu Leu Ser Pro Glu Gly Ile Arg
 50 55 60
 Trp Met Leu Arg Asn Ala Ile Thr Asn Phe Thr Gly Phe Ala Pro Leu
 65 70 75 80
 Gly Met Val Leu Ile Ala Met Phe Gly Ile Gly Val Ala Gln His Ser
 85 90 95
 Gly Phe Ile Asp Ala Cys Val Arg Gln Gly Val Lys Asn Arg Lys Asn
 100 105 110
 Thr Arg Arg Ile Ile Leu Trp Val Ile Ile Leu Gly Leu Leu Ser Asn
 115 120 125
 Ile Val Gly Asp Ala Gly Tyr Ile Ile Leu Leu Pro Ile Ala Ala Thr
 130 135 140
 Leu Phe Tyr Ser Val Gly Leu Asn Pro Val Ala Gly Ile Ile Thr Ala
 145 150 155 160
 Tyr Val Ser Val Ser Cys Gly Tyr Ser Ala Asn Val Val Leu Ser Thr
 165 170 175
 Met Asp Pro Leu Ile Ala Arg Thr Thr Gln Glu Ala Ala Ile Asp Ser
 180 185 190
 Gly Val Tyr Gln Gly Asn Thr Gly Pro Leu Cys Asn Tyr Tyr Phe Met
 195 200 205
 Ser Val Ser Thr Phe Val Ile Gly Ala Ile Ile Tyr Arg Ile Thr Cys
 210 215 220
 Lys Arg Leu Ile Pro Ser Leu Gly Gln Tyr Glu Gly Lys Gln Ile Phe
 225 230 235 240
 Glu Gly Tyr Lys Gln Leu Ser Arg Lys Glu Arg Arg Ala Met Thr Met
 245 250 255
 Ala Ile Val Val Gly Met Leu Tyr Ala Ala Ile Ile Leu Trp Ala Thr
 260 265 270
 Phe Ser Ser Trp Gly Ile Leu Arg Gly Val Asn Gly Gly Leu Ile Arg
 275 280 285
 Ser Pro Phe Ile Met Gly Ile Leu Phe Leu Leu Ser Leu Gly Ala Ala
 290 295 300
 Ile Met Gly Met Val Tyr Gly Phe Ser Ser Gly Arg Tyr Arg Ser Asp
 305 310 315 320
 Asn Asp Val Ile Glu Gly Leu Ala Gln Pro Met Lys Leu Leu Gly Gly
 325 330 335
 Tyr Leu Val Ile Ala Phe Phe Ala Ala Gln Met Phe Ala Cys Leu Glu
 340 345 350
 Tyr Ser His Leu Asp Lys Cys Val Ala Ile Ile Gly Ala Asn Leu Leu
 355 360 365

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Ser Ser Val Gln Ala Gly Pro Leu Trp Thr Leu Ile Leu Phe Ile Leu
  370          375          380
Phe Thr Ala Thr Ile Asn Leu Ile Met Val Ser Ala Thr Ala Lys Trp
 385          390          395          400
Ala Phe Met Ala Phe Ile Phe Val Pro Val Phe Ala Arg Met Gly Ile
          405          410          415
Glu Pro Asp Met Thr Gln Cys Ala Phe Arg Ile Gly Asp Ser Ala Thr
          420          425          430
Asn Ala Ile Thr Pro Phe Met Phe Tyr Met Pro Leu Val Leu Thr Tyr
          435          440          445
Met Gln Gln Tyr Asp Lys Gln Ala Thr Tyr Gly Ser Leu Leu Lys Tyr
          450          455          460
Thr Trp Arg Tyr Ser Val Tyr Ile Leu Ile Gly Trp Thr Met Leu Leu
 465          470          475          480
Phe Ile Trp Tyr Leu Thr Ser Leu Pro Leu Gly Leu
          485          490

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<210> 8932
 <211> 240
 <212> PRT
 <213> B.fragilis

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<400> 8932
Ile Arg Met Ala Ser His Cys Val Gly Tyr Phe Lys Tyr Leu Gly Gln
 1          5          10          15
His Val Gly Phe Phe Ser Arg Ile Thr Pro Val Phe Gln Glu Arg Arg
          20          25          30
Lys Val Met Lys Ser Ser Leu Ile Val Val Ala Phe Phe Cys Ile Gly
          35          40          45
Cys Leu Val Gly Ile Phe Asn Asp Phe Gln Phe Asp Met His Asn Leu
          50          55          60
Ser Met Tyr Ile Leu Tyr Ala Leu Met Leu Gln Val Gly Ile Ser Ile
 65          70          75          80
Gly Ser Asn Lys Asn Leu Lys Phe Leu Ile Lys Ser Leu Arg Pro Asn
          85          90          95
Met Leu Leu Val Pro Ile Ala Thr Ile Val Gly Thr Leu Leu Phe Ser
          100          105          110
Ala Phe Ala Ser Leu Leu Leu Ser Gln Trp Ser Val Phe Asp Cys Met
          115          120          125
Ala Val Gly Ser Gly Phe Ala Tyr Tyr Ser Leu Ser Ser Ile Leu Ile
          130          135          140
Thr Gln Phe Lys Glu Ala Ser Val Gly Leu Gln Leu Ala Thr Glu Leu
 145          150          155          160
Gly Thr Ile Ala Leu Leu Ala Asn Ile Phe Arg Glu Met Met Ala Leu
          165          170          175
Leu Gly Thr Pro Leu Ile Arg Lys Tyr Phe Gly Lys Leu Ala Pro Ile
          180          185          190
Ser Ala Ala Gly Val Asn Ser Met Asp Val Leu Leu Pro Ser Ile Thr
          195          200          205
His Tyr Ser Gly Lys Asp Met Ile Pro Val Ala Ile Phe His Gly Ile
          210          215          220
Leu Ile Asp Met Ser Val Pro Phe Phe Val Ser Leu Phe Cys Ser Leu
 225          230          235          240

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<210> 8933
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 8933

Val Met Val Ala Gly Gln Lys Met Gln Ser Ala Pro Cys Ser Ala Leu
 1 5 10 15
 Ser Pro Phe Asn Val Ile Arg Ser Gly Ser Pro Gly Pro Lys Asp Thr
 20 25 30
 Lys Arg Met Gly Cys Val Val Ile Ile Cys Tyr Arg Phe Ile Ile Leu
 35 40 45
 Met Phe Cys Lys Ser Glu Glu Asn Ile Ser Met Lys Gln Glu Leu Leu
 50 55 60
 Ser Ile Phe Asp Arg Cys Asn Leu Asn
 65 70

<210> 8934

<211> 163

<212> PRT

<213> B.fragilis

<400> 8934

Glu Ser Leu Tyr Lys Ile Phe Tyr Lys Ile Met Ser Glu Asn Lys Gln
 1 5 10 15
 Ala Leu Gln Val Ala Ala Leu Lys Asn Gly Thr Val Ile Asp His Ile
 20 25 30
 Pro Ser Glu Lys Leu Phe Thr Val Val Ser Leu Leu Gly Leu Glu His
 35 40 45
 Met Thr Thr Asn Ile Thr Ile Gly Phe Asn Leu Asp Ser Lys Lys Leu
 50 55 60
 Gly Lys Lys Gly Ile Ile Lys Ile Ala Asp Lys Phe Phe Cys Asp Glu
 65 70 75 80
 Glu Ile Asn Arg Ile Ser Val Val Ala Pro His Val Lys Leu Asn Ile
 85 90 95
 Ile Arg Asp Tyr Glu Val Val Glu Lys Lys Glu Val Arg Met Pro Asp
 100 105 110
 Glu Leu Lys Ala Ile Val Lys Cys Ala Asn Pro Lys Cys Ile Thr Asn
 115 120 125
 Asn Glu Pro Met Ala Thr Leu Phe His Val Ile Asp Lys Asp Asn Cys
 130 135 140
 Val Ile Lys Cys His Tyr Cys Glu Lys Glu Gln Lys Arg Glu Asp Ile
 145 150 155 160
 Thr Ile Ile

<210> 8935

<211> 198

<212> PRT

<213> B.fragilis

<400> 8935

Leu Val Thr Tyr Lys Val Asn Lys Lys Met Lys Gln Asp Trp Lys Pro
 1 5 10 15
 Gly Thr Leu Ile Tyr Pro Leu Pro Ala Val Leu Val Ser Cys Gly Ser
 20 25 30
 Asp Glu Ser Glu Tyr Asn Ile Leu Thr Val Ala Trp Thr Gly Thr Ile
 35 40 45
 Cys Thr Asn Pro Pro Met Cys Tyr Ile Ser Val Arg Pro Glu Arg His
 50 55 60
 Ser Tyr Pro Ile Ile Lys Lys Asn Met Glu Phe Val Ile Asn Leu Thr
 65 70 75 80
 Thr Arg Asp Met Ala Phe Ala Thr Asp Trp Cys Gly Val Arg Ser Gly
 85 90 95

Lys Asp Tyr His Lys Phe Glu Glu Met Lys Leu Thr Pro Gly Lys Cys
 100 105 110
 Ser Val Val Asp Ala Pro Leu Ile Glu Glu Ser Pro Leu Cys Ile Glu
 115 120 125
 Cys Arg Val Lys Glu Ile Val Ser Leu Gly Ser His Asp Met Phe Ile
 130 135 140
 Ser Asp Val Val Asn Ile Arg Ala Asp Asp Arg His Leu Asn Arg Glu
 145 150 155 160
 Thr Gly Lys Leu Glu Leu Ala Glu Ala Asn Pro Leu Val Tyr Val His
 165 170 175
 Gly Gly Tyr Tyr Asn Leu Gly Glu Lys Ile Gly Lys Phe Gly Trp Ser
 180 185 190
 Val Glu Lys Lys Thr Lys
 195

<210> 8936

<211> 682

<212> PRT

<213> B.fragilis

<400> 8936

Lys Lys Ala Tyr Ile Cys Tyr Leu Gln Thr Thr Asn Asn Met Met Arg
 1 5 10 15
 Tyr Ile Ile Leu Leu Val Leu Cys Ala Trp Thr Gly Ile Ala Leu Ala
 20 25 30
 Ile Asp Tyr His Ala Lys Asp Ser Leu Leu Leu Gln Leu Lys Gln Thr
 35 40 45
 Thr Ile Ala Ala Glu Arg Ile Asn Ile Tyr Arg Asn Leu Ala Asp Ile
 50 55 60
 Cys Phe Glu Thr Pro Asp Glu Lys Thr Tyr Leu Leu Asn Met Tyr Arg
 65 70 75 80
 Glu Ala Gln Lys Ala Gly Asp Thr Ser Gly Met Leu Asn Ala Leu Asn
 85 90 95
 Asp Leu Val Cys Gly Glu Thr Lys Glu Tyr Arg Met Asp Ser Ala Tyr
 100 105 110
 His Tyr Met Glu Leu Ile Lys Ala Ile Arg Glu Pro Gln Glu Thr Ala
 115 120 125
 Pro Val Leu Ala Tyr Leu Gln Met Arg Phe Phe Asp Thr Leu Cys Ser
 130 135 140
 His Asn Glu Thr Glu Glu Ala Ile Thr Lys Glu Leu Gln Phe Ile Glu
 145 150 155 160
 Glu Lys Lys Ser Asp Glu Ala Ser Leu Tyr Ser Lys Ile Ala Gln Ala
 165 170 175
 Tyr Ile Thr Gly Gly Ser Leu His Tyr Asn Asp Met Ile Lys Glu Ala
 180 185 190
 Leu Pro Tyr Leu Glu Thr Ala Met Asn Leu Ser Lys Gln Leu Pro Pro
 195 200 205
 Glu Lys Gln Ile Leu Phe Val Ser Ile Ile Val Trp Lys Leu Ser Asn
 210 215 220
 Thr Tyr Ser Met Leu Asn Lys Cys Asp Ser Ala Ile Arg Ile Leu Asp
 225 230 235 240
 Glu Asn Leu Gln Thr Gln Gln Gln Tyr Tyr Lys Asp His Tyr Gln Thr
 245 250 255
 Gln Arg Pro Phe Tyr Asn Met Ala Ile His Glu Leu Arg Phe Tyr Thr
 260 265 270
 Ser Leu Leu Thr Asn Ala Ile Ser Glu Ala Pro Glu Lys Met Asp Tyr
 275 280 285
 Tyr Trp Gln Gln Ile Val Lys Leu Asn Lys Lys Leu Thr Asn Pro Tyr
 290 295 300


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Asp Arg Tyr Asn Tyr Phe Leu Ser Met Asp Asn Tyr Tyr Leu Asn Gln
305                      310                      315                      320
Lys Pro Gln Pro His Tyr Glu Lys Ala Leu Val Ala Asn Asp Ser Leu
                      325                      330                      335
Ile Gln Ile Ala Gln Glu Ile Ile Pro Asn Asn Leu Pro Gly Leu Tyr
                      340                      345                      350
Asp Ile Gln Ser Gln Thr Tyr Glu Ala Met Gly Asn Phe Lys Glu Ala
                      355                      360                      365
Leu Ala Tyr Leu Arg Ile Ala Thr Gln Tyr Lys Asp Ser Leu Thr Thr
                      370                      375                      380
Glu Asn Met Gln Lys Gln Leu Gly Glu Leu Gln Ile Lys Tyr Glu Val
385                      390                      395                      400
Asn Lys Leu Asn Asn Glu Lys Ser Gln Leu Glu Ile Lys Asn Lys Arg
                      405                      410                      415
Ile Leu Val Ile Cys Leu Ser Ile Ile Leu Ile Ile Val Ile Phe Val
                      420                      425                      430
Cys Leu Tyr Leu Tyr His Asp Leu Lys Lys Glu Lys Lys Met Lys Phe
                      435                      440                      445
His Leu Arg Asn Leu Lys Gln Lys Ala Glu Glu Ser Glu Lys Met Lys
                      450                      455                      460
Thr Ala Phe Ile Asn Ser Ile Cys His Glu Ile Arg Thr Pro Leu Asn
465                      470                      475                      480
Ser Ile Val Gly Phe Ser Asp Leu Ile Phe Asn Asp Glu Ile Asp Lys
                      485                      490                      495
Glu Thr Arg Glu Gly Phe Ser Gln Glu Ile Gln Lys Ser Thr Ile Leu
                      500                      505                      510
Leu Thr Ser Leu Ile Asp Asn Met Leu Glu Ile Ser Ser Leu Asp Val
                      515                      520                      525
Ser Gln Glu Lys Leu Pro Cys Lys Glu Ala Asn Leu Asn Ser Ile Cys
                      530                      535                      540
Ile Gln Glu Met Thr Leu Leu Asn Arg Ser His Lys Pro Asp Ile Asp
545                      550                      555                      560
Tyr Arg Thr Asp Leu Pro Glu His Pro Ile Ile Leu Thr Thr His Glu
                      565                      570                      575
Lys Tyr Leu Ser Leu Val Ile Glu His Leu Leu Asn Asn Ala Asn Lys
                      580                      585                      590
Phe Thr Glu Lys Gly Ile Ile Thr Leu His Cys His Ile Asp Glu Ala
                      595                      600                      605
Arg Gln Gln Val His Ile Ser Val Thr Asp Thr Gly Cys Gly Ile Pro
610                      615                      620
Ala Asp Lys His Lys Glu Val Phe Glu Arg Phe Ser Lys Leu Asn Ala
625                      630                      635                      640
Phe Thr Pro Gly Asn Gly Leu Gly Leu Tyr Leu Cys Gln Leu Ile Ile
                      645                      650                      655
Arg Arg Leu Ser Gly Lys Ile Ser Ile Asp Pro Thr Tyr Thr Gly Gly
                      660                      665                      670
Thr Arg Ile Thr Val Ile Leu Pro Val Gln
                      675                      680

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<210> 8937
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 8937
 Leu Met Pro His Arg Met Phe Thr Cys Lys Ile Glu Ala Gly Phe Arg
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 Val Phe Ile Phe Ile Ile Leu His Phe Val Leu Thr Asn Cys Ile Arg
 20 25 30

Glu Asp Met Ser Gly Cys Pro Arg Asp Asp Gly Gly Leu Ala Leu Lys
 35 40 45
 Phe Ser Tyr Asp Thr Asn Ala Asp Ser Arg Leu Ser Thr Ala Gln Gly
 50 55 60
 Val Asp Arg Leu Ala Val Phe Ile Phe Asp Glu Lys Gly Leu Phe Ile
 65 70 75 80
 Ser Gln Val Asn Asp Ser Met Thr Ser Ile Asn Asp Asp Tyr Val Met
 85 90 95
 Glu Leu Pro Tyr Lys Gln Gly Ser Tyr Gln Phe Val Ala Trp Gly Gly
 100 105 110
 Tyr Asp Lys Ser Thr Tyr Gln Thr Ser Glu Cys Val Pro Arg Lys Thr
 115 120 125
 Tyr Ile Asp Asp Phe Phe Leu Ser Val Lys Arg Gln Glu Asp Asn Arg
 130 135 140
 Val Thr Asn Gln Pro Lys Leu Leu Tyr His Gly Met His Asp Ile Val
 145 150 155 160
 Glu Leu Asn Ser Lys Glu Lys Thr Ile Val Leu Ile Asn Leu Lys Gln
 165 170 175
 Met Thr Asn His Ile Arg Val Ile Ala His Asn Leu Asn Gln Asp Arg
 180 185 190
 Ser Asp Asn Ile Tyr Ile Glu Asp Asn Asn Gly Lys Tyr Gly Tyr Asp
 195 200 205
 Ser Gln Phe Ser Asp Asp Asp Arg Ile Thr Tyr Ile Pro Ile Tyr Glu
 210 215 220
 Ala Ser Ser Glu Gln Ser Asn Pro Leu Ile Ala Asp Phe Asn Val Met
 225 230 235 240
 Arg Leu Glu Lys Asp Arg Glu Pro Arg Leu Arg Ile Ala Asp Lys Thr
 245 250 255
 Gly Thr Ile Arg Tyr Asp Glu Asn Leu Ile Gly Lys Leu Ile Gly Gly
 260 265 270
 Asn Pro Asn Ile Asp Phe Glu His Asn His Asp Phe Thr Ile Glu Ile
 275 280 285
 Ser Phe Asp Asn Tyr Ile Pro Val Ile Ile Lys Ile Asn Gly Trp Glu
 290 295 300
 Ile Val Asn Glu Glu Ile
 305 310

<210> 8938

<211> 317

<212> PRT

<213> B.fragilis

<400> 8938

Gln Leu Leu His Thr Met Ser Glu Lys Ala Pro Phe Met Val Phe Ser
 1 5 10 15
 Gly Thr Asn Ser Arg Tyr Leu Ala Glu Lys Ile Cys Ala Ser Leu Asn
 20 25 30
 Cys Pro Leu Gly Asn Met Asn Ile Thr His Phe Ala Asp Gly Glu Phe
 35 40 45
 Ala Val Ser Tyr Glu Glu Ser Ile Arg Gly Ala His Val Phe Leu Val
 50 55 60
 Gln Ser Thr Phe Pro Asn Ser Asp Asn Leu Met Glu Leu Leu Leu Met
 65 70 75 80
 Ile Asp Ala Ala Lys Arg Ala Ser Ala Lys Ser Val Val Ala Val Ile
 85 90 95
 Pro Tyr Phe Gly Trp Ala Arg Gln Asp Arg Lys Asp Lys Pro Arg Val
 100 105 110
 Ser Ile Gly Ala Lys Leu Val Ala Asp Leu Leu Ser Val Ala Gly Ile
 115 120 125

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Asp Arg Leu Ile Thr Met Asp Leu His Ala Asp Gln Ile Gln Gly Phe
130 135 140
Phe Asn Ile Pro Val Asp His Leu Tyr Ala Ser Ala Val Phe Leu Pro
145 150 155 160
Tyr Ile Gln Ser Leu Lys Leu Asp Glu Leu Val Ile Ala Thr Pro Asp
165 170 175
Val Gly Gly Ser Lys Arg Ala Ser Thr Phe Ser Lys Tyr Leu Gly Val
180 185 190
Pro Leu Val Leu Cys Asn Lys Ser Arg Glu Lys Ala Asn Glu Val Ala
195 200 205
Ser Met Gln Ile Ile Gly Asp Val Lys Gly Lys Asn Val Val Leu Ile
210 215 220
Asp Asp Ile Val Asp Thr Ala Gly Thr Ile Thr Lys Ala Ala Asn Ile
225 230 235 240
Met Leu Glu Ala Gly Ala Asn Ser Val Arg Ala Ile Ala Ser His Cys
245 250 255
Val Met Ser Asp Pro Ala Ser Phe Arg Val Gln Glu Ser Gly Leu Thr
260 265 270
Glu Met Val Phe Thr Asp Ser Ile Pro Tyr Ser Lys Lys Cys Ala Lys
275 280 285
Val Lys Gln Leu Ser Ile Ala Asp Met Phe Ala Glu Thr Ile Lys Arg
290 295 300
Val Met Asn Asn Glu Ser Ile Ser Ser Gln Tyr Ile Ile
305 310 315

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<210> 8939

<211> 94

<212> PRT

<213> B.fragilis

<400> 8939

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Lys Val Thr Gln Cys Thr Pro Trp Gln Leu Leu Cys Ile Ser Cys Arg
1 5 10 15
Thr Val Pro Leu Phe His Leu Ile Leu Ile Ser Glu Arg Lys Glu Ile
20 25 30
Asn Gln Thr Thr Lys Gln Gly Val Ile Gln Ile Asn Pro Leu Asn Gln
35 40 45
Cys Thr Cys Thr Met Gln Cys Pro Tyr Arg Ile Leu Phe Ser Cys Thr
50 55 60
Ala Leu Cys Met Leu Tyr Val Val Asn Asn Arg Phe Ile Leu Phe Ile
65 70 75 80
Asn Tyr Ser Ala Lys Val Ile Leu Leu Arg Ile Phe Ser Lys
85 90

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<210> 8940

<211> 388

<212> PRT

<213> B.fragilis

<400> 8940

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Ile Lys Arg Gln Ile Pro Met Lys Gln Phe Leu Ile Gly Cys Ala Leu
1 5 10 15
Leu Ala Cys Ile Ser Leu Ala Gly Cys Arg Pro Lys Asn Asn Gln Asn
20 25 30
Ala Thr Ile Val Thr Gly Glu Val Ser Asp Thr Ser Ser Val Arg Ile
35 40 45
Thr Pro Val Tyr Ala Lys Gly Phe Lys Val Thr Tyr Thr Pro Thr Cys
50 55 60
Arg Leu Val Asp Ile Ser Asp Pro Gln Lys Glu Gly Gly Glu Ser Phe

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<210> 8941
<211> 789
<212> PRT
<213> B.fragilis
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<400> 8941																
Leu	Ser	Leu	Gln	Leu	Arg	Ile	Lys	Leu	Arg	Asn	Lys	Met	Ile	Lys	Lys	
1				5					10					15		
Ile	Val	Lys	Gly	Leu	Trp	Val	Phe	Phe	Ala	Leu	Met	Val	Leu	Ala	Gly	
			20					25					30			
Ile	Ala	Val	Phe	Ala	Ser	Ile	Ala	Tyr	Gly	Trp	Ile	Gly	Tyr	Met	Pro	
		35					40					45				
Pro	Val	Glu	Glu	Leu	Glu	Asn	Pro	Asn	Tyr	Lys	Phe	Ala	Thr	Glu	Ile	
	50					55					60					
Leu	Ser	Glu	Asp	Gly	Lys	Val	Leu	Gly	Thr	Trp	Ser	Leu	Ser	Lys	Glu	
65					70					75					80	
Asn	Arg	Val	Tyr	Thr	Ser	Tyr	Asn	Glu	Leu	Ser	Pro	Asn	Ile	Val	Asn	

Asn Asn Trp Ile Ser Ala Tyr Leu Met Ser Lys Leu Asn Pro Tyr Ala
 565 570 575
 Leu Ala Arg Leu Ile His Ser Phe Gly Val Arg Asn Lys Glu Ile Gln
 580 585 590
 Pro Thr Val Ser Leu Cys Leu Gly Pro Cys Glu Ile Ser Val Gly Glu
 595 600 605
 Met Val Ser Ala Tyr Thr Ala Phe Ala Asn Lys Gly Ile Arg Val Ala
 610 615 620
 Pro Leu Phe Val Thr Lys Ile Glu Asp Ser Glu Gly Asn Val Leu Ala
 625 630 635 640
 Thr Phe Ser Pro Gln Met Glu Glu Val Ile Ser Ala Ser Ser Ala Tyr
 645 650 655
 Lys Met Leu Val Met Leu Arg Ala Val Ile Asn Glu Gly Thr Gly Ala
 660 665 670
 Arg Val Arg Arg Tyr Gly Ile Thr Ala Asp Met Gly Gly Lys Thr Gly
 675 680 685
 Thr Thr Asn Arg Asn Ser Asp Gly Trp Phe Met Gly Phe Thr Pro Ser
 690 695 700
 Leu Val Ser Gly Cys Trp Val Gly Gly Glu Glu Arg Asp Ile His Phe
 705 710 715 720
 Asp Thr Met Thr Tyr Gly Gln Gly Ala Ser Leu Ala Leu Pro Ile Trp
 725 730 735
 Thr Lys Tyr Met His Lys Val Tyr Ala Asp Gln Thr Leu Gly Tyr Asp
 740 745 750
 Pro Lys Glu Thr Phe Asn Leu Pro Asp Gly Phe Asp Pro Cys Lys Asp
 755 760 765
 Phe Ser Ile Ser Gly Asp Ser Ile Ile Asp Glu Pro Glu Ser Gly Leu
 770 775 780
 Asp Asp Leu Phe Asn
 785

<210> 8942
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 8942
 Pro Ile Leu Lys Val Tyr Lys Ser Met Gly Lys Thr Leu Pro Glu Asn
 1 5 10 15
 Ser Ser Arg Asn Phe Ile Thr Val Leu Arg Ala Ala Arg Thr Ser Lys
 20 25 30
 Ser Arg Tyr Leu Gln Asn Thr Arg Asp Cys Lys Tyr Thr Thr Ala Asn
 35 40 45
 Ser Glu Asp His Arg Cys Tyr His Arg Gln His Arg
 50 55 60

<210> 8943
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 8943
 Asn Asn Ile Lys Thr Lys Ser Met Glu Asn Gln Glu Thr Lys Thr Glu
 1 5 10 15
 Lys Lys Ile Val Lys Val Lys Leu Ser Asp Ala Ile Lys Lys Ala Ser
 20 25 30
 Ile Leu Lys Ala Val Leu Leu Ala Tyr Lys Asp Lys Glu Leu Ser Ala
 35 40 45
 Glu Leu Lys Ser Lys Val Met Met Thr Arg Ile Tyr Tyr Gly Lys Phe

50		55		60
Arg Lys Gln Phe Glu Glu Asp Val Lys Glu Ala Arg Glu Gly Leu Lys				
65		70		75
Pro Glu Gly Tyr Asp Thr Gln Leu Gln Glu Ile Asp Glu Leu Glu Asn				
	85		90	
Lys Ala Arg Gly Asp Lys Asp Ile Arg Asn Leu Thr Pro Glu Met Leu				
	100		105	
Lys Ser Ala Leu Thr Glu Glu Glu Tyr Asp Lys His Glu Thr Phe Met				
	115		120	
Pro Ile Phe Asn Lys Tyr Met Glu Glu Val Thr Asn Phe Lys Ser Glu				
	130		135	
Lys Leu Asp Glu Glu Val Glu Met Glu Glu Lys Lys Phe Thr Gln Lys				
	145		150	
Glu Phe Asp Glu Ile Leu Asn Val Asn Thr Ala Glu Ser Tyr Asn Leu				
	165		170	
Asp Leu Cys Met Pro Tyr Asn Gly Lys Asn Met Ile Phe Pro Gly Thr				
	180		185	
Met Lys Ser Ala Asp Phe Met Glu Val Leu Tyr Glu Glu Phe Ile Asp				
	195		200	
			205	

<210> 8944

<211> 198

<212> PRT

<213> B.fragilis

<400> 8944

Phe Gly Asp Lys His Val Glu Phe Ala Thr Cys Leu Trp Asn Asn Ser		
1	5	10
Thr Asn Lys Ile Leu Leu Leu Leu Leu Leu Ile Lys Leu Glu Ile Lys		
	20	25
Lys Asn Leu Ile Met Lys Lys Leu Lys Phe Asn Leu Leu Thr Gly Leu		
	35	40
Leu Leu Leu Ile Ser Val Ser Val Phe Ala Ala Gly Phe Pro Pro Pro		
	50	55
Asp Lys Val Gln Glu Thr Phe Gln Lys Met Tyr Pro Lys Val Thr Thr		
	65	70
Val Asp Trp Gln Arg Lys Gly Asp Tyr His Ile Ala Asp Ile Arg Val		
	85	90
Asp Gly Arg Glu Leu Asn Val Trp Phe Ser Asp Lys Gly Lys Trp Leu		
	100	105
Met Thr Glu Val Asp Val Glu Thr Leu Glu Ala Val Pro Ala Ala Val		
	115	120
Ala Lys Ala Phe Met Gln Ser Thr Met Ala Ser Met Gln Leu Glu Asp		
	130	135
Val Arg Ile Ile Thr Phe Pro Lys Gln Pro Ala Val Ile Val Ile Glu		
	145	150
Val Glu Glu Tyr Asn Thr Asp Ser Glu Phe Gln Leu Phe Tyr Ala Pro		
	165	170
Asp Gly Lys Leu Leu Gln Thr Leu Asn Val Ser Asp Thr Gly Gly Glu		
	180	185
Ile Tyr Pro Gly Leu Phe		190
	195	

<210> 8945

<211> 137

<212> PRT

<213> B.fragilis

<400> 8945

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Lys Asn Lys Lys Met Ser Arg Gly Leu Arg Asn Asn Asn Pro Gly Asn
 1 5 10 15
 Ile Arg His Asp Arg Asp Lys Trp Gln Gly Glu Ile Val Pro Ser Gln
 20 25 30
 Asp Arg Lys Phe Lys Gln Phe Ile Ser Met Ala Tyr Gly Tyr Arg Ala
 35 40 45
 Leu Ile Lys Leu Leu Gln Asn Tyr Arg Lys Leu His Asn Arg Gln Thr
 50 55 60
 Ile Ala Glu Phe Ile Asn Arg Tyr Ala Pro Pro Cys Glu Asn Asn Thr
 65 70 75 80
 Ser Gly Tyr Ile Thr Arg Val Cys Ser Glu Met Gln Val Pro Ser Thr
 85 90 95
 Tyr Ile Pro Asp Ile Asp Asp Lys Ala Thr Met Cys Ala Phe Ala Ala
 100 105 110
 Ala Ile Gly Gln Val Glu Asn Gly Val Pro Ala Val Met Ala Asp Ile
 115 120 125
 Glu Ala Gly Trp Asp Leu Leu Met Lys
 130 135

<210> 8946

<211> 259

<212> PRT

<213> B.fragilis

<400> 8946

Phe Arg Arg Lys Asp Arg Lys Ile Arg Leu Val Ser Arg Lys Glu Asn
 1 5 10 15
 Lys Val Lys Arg Ile Val Leu Leu Phe Ile Ser Ile Trp Ile Ala Phe
 20 25 30
 Ala Ala Tyr Gly Glu Asp Asn His Lys Lys Glu Arg His Pro Asp Asp
 35 40 45
 Arg Lys Ile Asn Val Gly Ile Arg Gly Gly Phe Asn Ser Ser Met Phe
 50 55 60
 Leu Val Ser Asp Leu Lys Ile Lys Asp Val Thr Ile Asp Glu Ile Gln
 65 70 75 80
 Asn Asn Tyr Lys Ile Gly Tyr Phe Gly Ala Leu Phe Met Arg Leu Asn
 85 90 95
 Met Lys Arg His Phe Ile Gln Pro Glu Ile Ser Tyr Asn Ile Ser Arg
 100 105 110
 Cys Glu Ile Ser Phe Asp Lys Leu Gly Ser Gln His Pro Asp Ile Glu
 115 120 125
 Pro Asp Tyr Ala Ser Val Ser Ser Thr Ile His Ser Ile Asp Phe Pro
 130 135 140
 Leu Leu Tyr Gly Tyr His Val Val Lys Gln Gly Pro Tyr Thr Met Ser
 145 150 155 160
 Leu Phe Ala Gly Pro Lys Leu Arg Tyr Leu Trp Asn Lys Lys Asn Lys
 165 170 175
 Ile Thr Phe Glu Asn Phe Asp Gln Gln Gly Ile His Glu Lys Leu Tyr
 180 185 190
 Pro Phe Asn Val Ser Ala Val Ile Gly Val Ser Val Asn Ile Ser Arg
 195 200 205
 Ile Phe Phe Asp Phe Arg Tyr Glu Gln Gly Leu His Asn Leu Ser Lys
 210 215 220
 Ser Val Thr Tyr Asp Asn Ile Asp Met Glu Gly Arg Pro Glu Val Ser
 225 230 235 240
 Asn Ile Thr Phe Arg Arg Arg Asp Asn Val Leu Ser Phe Ser Leu Gly
 245 250 255
 Val Ile Phe

<210> 8947
 <211> 1496
 <212> PRT
 <213> B.fragilis

<400> 8947

Leu	Tyr	Leu	Lys	Glu	Met	Asn	Pro	Arg	Leu	Leu	Ile	Pro	Leu	Phe	Cys
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Met	Leu	Leu	Leu	Thr	Thr	Phe	Phe	Ser	Cys	Val	Asp	Thr	Ala	Pro	Thr
			20					25					30		
Lys	Glu	Val	Gln	His	Ile	Asp	Ser	Leu	Asn	Ser	Arg	Ala	Tyr	Met	Tyr
		35					40					45			
Arg	Tyr	Arg	Asp	Leu	Asp	Ser	Ser	Cys	Lys	Ala	Ala	Ser	Gln	Ala	Tyr
	50					55					60				
Lys	Glu	Val	Ser	Met	Tyr	Ser	Gln	Gly	Lys	Ala	Glu	Ala	Ser	Asn	Asn
65					70					75					80
Leu	Ala	Phe	Cys	Ala	Phe	Met	Arg	Met	Asp	Phe	Asp	Thr	Ala	Glu	Arg
			85						90					95	
Leu	His	Lys	Gly	Val	Tyr	Asp	Leu	Thr	Lys	Asn	Glu	Leu	Glu	Leu	Leu
			100					105					110		
Ile	Ala	Asp	Ile	Gly	Leu	Met	Lys	Ile	Tyr	Gln	Arg	Thr	Ala	Met	Asn
		115					120					125			
Lys	Glu	Phe	Tyr	Asp	Tyr	Arg	Asn	Ser	Ala	Ile	Arg	Arg	Met	Lys	Arg
	130					135					140				
Ile	Asp	Glu	Glu	Asn	Asn	Leu	Phe	Val	Asp	Arg	His	Glu	Ser	Ala	Arg
145					150					155					160
Leu	Asp	Tyr	Ala	Phe	Thr	Glu	Phe	Phe	Ile	Val	Ser	Ala	Val	Tyr	Tyr
			165						170					175	
Tyr	Tyr	Leu	Gln	Gln	Arg	Thr	Glu	Ala	Met	Ala	Ser	Leu	Asn	Glu	Ile
		180						185					190		
Gln	Leu	Asn	Glu	Asp	Leu	Ala	Thr	Asp	Thr	Asn	Gln	Ile	Leu	Tyr	Phe
		195					200					205			
His	Tyr	Ile	Lys	Gly	Ser	Ala	Gly	Leu	Cys	Glu	Gly	Lys	Thr	Pro	Asp
	210					215					220				
Glu	Arg	Lys	Leu	Glu	Glu	Phe	Asp	Glu	Leu	Tyr	Thr	Thr	Trp	Lys	Met
225					230					235					240
Ala	Ser	Glu	Gln	Gly	Tyr	Leu	Tyr	Phe	Glu	Gly	Asn	Gly	Leu	Gln	Gly
			245						250					255	
Leu	Thr	Asn	Leu	Met	Ala	Ser	Gln	Glu	Ser	Tyr	Glu	Leu	Phe	Leu	Asn
		260						265					270		
Arg	Arg	Ser	His	Ala	Leu	Thr	Arg	Phe	Gly	Ile	Pro	Val	Asp	Ser	Leu
		275					280					285			
Leu	Pro	Leu	Arg	Leu	Gly	Gln	Met	Ala	Leu	Glu	Arg	Phe	Arg	Lys	Tyr
	290					295					300				
Asn	Asp	Leu	Tyr	Gln	Ile	Ala	Gly	Ala	Tyr	Val	Ser	Ile	Gly	Lys	Tyr
305					310					315					320
Leu	Asn	Ala	His	Gly	Arg	Tyr	Thr	Glu	Ala	Leu	Asp	Thr	Leu	Ala	Lys
			325						330					335	
Ala	Leu	Asp	Cys	Val	Asn	Gln	His	His	Met	Ser	Tyr	Tyr	His	Ser	Val
		340					345						350		
Ala	Asp	Thr	Leu	Asp	Lys	Leu	Gln	Val	Phe	Val	Pro	Asn	Lys	Asp	Val
		355					360					365			
Ala	Tyr	Thr	Glu	Val	Thr	Trp	Leu	Gly	Lys	Glu	Lys	Val	Lys	Thr	Val
	370					375					380				
Pro	Glu	Trp	Ile	Ser	Arg	Ile	Arg	Glu	Gln	Leu	Ser	Val	Ser	Tyr	Ala
385					390					395					400
Cys	Leu	Gly	Met	Lys	Pro	Ala	Ser	Asp	Tyr	Asn	Arg	Asn	Val	Tyr	Leu
			405						410					415	

GenBank accession number: U00096.1
 B.fragilis, complete genome sequence

Asp	Ile	Leu	Arg	Tyr	Thr	Arg	Gln	Asp	Lys	Glu	Leu	Glu	Ser	Arg	Tyr
			420					425					430		
Leu	Ser	Leu	Glu	Gln	Glu	Ser	Arg	Gln	Leu	Asn	Val	Val	Leu	Phe	Phe
		435					440					445			
Val	Ile	Ile	Gly	Leu	Ile	Leu	Val	Thr	Ala	Met	Phe	Trp	Leu	Phe	Asn
	450				455					460					
Lys	Arg	Ser	Lys	Val	Arg	Asn	Arg	Ile	His	Ile	Ala	Arg	Leu	Arg	Gln
465					470				475						480
Thr	Leu	Asp	Val	Cys	Gln	Lys	Ile	Thr	Ala	Ser	Ile	Pro	Val	Asp	Val
			485					490					495		
Thr	Asp	Glu	Ser	Glu	Ile	Val	Tyr	Ala	Ile	Ser	Glu	Ser	Ile	Gln	Pro
			500					505					510		
Asp	Met	Glu	Gln	Leu	Phe	Gly	Ala	Thr	Glu	Ile	Arg	Ile	Gly	Ile	Arg
	515						520					525			
Asn	Glu	Glu	Thr	Gly	Asp	Ile	Glu	Phe	Asn	Glu	Glu	Cys	Glu	Ser	Glu
	530						535				540				
Gln	Thr	Asp	Glu	Pro	Lys	Ser	Ile	Gly	Glu	Val	Gly	Ile	Gly	Ser	Val
545					550				555						560
Phe	Asn	Leu	Tyr	Val	Pro	Asp	Lys	Thr	Glu	Pro	Ile	Gly	Ile	Leu	Lys
			565					570					575		
Leu	Phe	Thr	Arg	His	Arg	Leu	Asn	Lys	Asp	Glu	Gln	Ala	Leu	Val	Lys
			580					585					590		
Val	Ile	Thr	Pro	Tyr	Ile	Ala	Trp	Ala	Leu	Asp	Asn	Gly	Met	Thr	Phe
		595					600					605			
Ile	Ser	Leu	Gly	Asp	Glu	Arg	Asn	Lys	Leu	Glu	Lys	Gln	Arg	Tyr	Val
	610						615				620				
Tyr	Glu	Gln	His	Ile	Ala	Gly	Asn	Lys	Arg	Gln	Asn	Leu	Ile	Lys	Lys
625					630				635						640
Ser	Cys	Leu	Ala	Ile	Val	Asp	Gly	Ile	Asn	Pro	Tyr	Ile	Asp	Arg	Ile
			645					650					655		
Ile	Asn	Glu	Val	His	Lys	Leu	Thr	Glu	Lys	Gly	Phe	Ile	Asn	Asn	Asp
		660						665					670		
Arg	Ile	Lys	Lys	Glu	Lys	Tyr	Gln	Tyr	Ile	Asp	Glu	Leu	Val	Thr	Thr
		675					680					685			
Ile	Asn	Glu	Tyr	Asn	Asp	Ile	Leu	Ala	Leu	Trp	Ile	Lys	Met	Lys	Gln
	690						695				700				
Gly	Ser	Leu	Ser	Leu	Asn	Ile	Glu	Asn	Phe	Glu	Leu	Asn	Glu	Leu	Phe
705					710				715						720
Glu	Leu	Ile	Ser	Lys	Gly	Arg	Lys	Ala	Phe	Glu	Met	Lys	Lys	Gln	Arg
			725					730						735	
Leu	Glu	Ile	Glu	Pro	Thr	Lys	Ala	Leu	Val	Lys	Ala	Asp	Lys	Ala	Leu
			740					745				750			
Thr	Leu	Phe	Met	Ile	Asn	Thr	Leu	Ala	Glu	Asn	Ala	Arg	Lys	Tyr	Thr
		755					760					765			
Pro	Glu	Gly	Gly	Ile	Val	Lys	Ile	Tyr	Ala	Lys	Arg	Thr	Asp	Glu	Tyr
	770					775					780				
Val	Glu	Ile	Ser	Val	Glu	Asp	Asn	Gly	Arg	Gly	Leu	Ser	Thr	Glu	Asp
785					790				795						800
Ile	Thr	Lys	Ile	Ile	Gly	Glu	Lys	Val	Tyr	Asp	Ser	Gln	Ser	Ile	Gly
			805						810					815	
Met	Lys	Asp	Asn	Pro	Asp	Lys	Glu	Glu	Leu	Lys	Arg	Ser	Lys	Gly	Ser
			820					825					830		
Gly	Phe	Gly	Leu	Met	Asn	Cys	Lys	Gly	Ile	Ile	Glu	Lys	Tyr	Lys	Lys
		835					840					845			
Thr	Asn	Asp	Leu	Phe	Arg	Ile	Cys	Thr	Phe	Asn	Ile	Glu	Ser	Thr	Pro
	850						855					860			
Gly	Lys	Gly	Ser	Arg	Phe	Tyr	Phe	Arg	Leu	Pro	Pro	Gly	Val	Arg	Lys
865					870				875						880
Ile	Ile	Gly	Ile	Cys	Leu	Cys	Leu	Val	Gly	Leu	Phe	Gly	Phe	Phe	Ser

														885							890						895		
Cys	Gln	Gly	Glu	Pro	Met	Pro	Glu	Lys	Leu	Lys	Asp	Ile	Pro	Val	Asp														
			900				905						910																
Ser	Val	Thr	Leu	Ala	Ala	Glu	Ala	Glu	Tyr	Glu	Arg	Leu	Leu	Asp	Glu														
			915				920						925																
Ala	Ser	Arg	Phe	Ala	Asp	Thr	Val	Tyr	Tyr	Cys	Asn	Val	Ile	Glu	Asn														
			930				935						940																
Phe	Glu	Leu	Ala	Leu	Gln	Tyr	Ala	Asp	Ser	Ala	Leu	Asn	Arg	Leu	Asn														
945				950			955						960																
Ala	His	Tyr	Lys	Lys	Tyr	Ala	Arg	His	Pro	Gln	Arg	Phe	Met	Lys	Leu														
			965			970						975																	
Val	Gly	Ser	Gly	Ile	Pro	Ala	Glu	Leu	Glu	Trp	Trp	Val	Glu	Pro	Tyr														
			980			985						990																	
Asn	Thr	Asp	Phe	His	Val	Ile	Leu	Asp	Val	Arg	Asn	Glu	Ala	Ser	Val														
			995			1000						1005																	
Ala	Phe	Leu	Gly	Leu	Lys	Lys	Leu	Asp	Ala	Tyr	Thr	Tyr	Asn	Asn	Val														
			1010			1015						1020																	
Ala	Tyr	Thr	Ala	Leu	Tyr	Lys	Leu	Thr	Gly	Glu	Asp	Gln	Ser	Leu	Glu														
1025				1030			1035						1040																
Gly	Tyr	Cys	Arg	Gln	Leu	Glu	Arg	Ser	Thr	Thr	Asn	Lys	Thr	Val	Gly														
			1045			1050						1055																	
Ile	Ile	Leu	Cys	Ile	Leu	Leu	Leu	Val	Ala	Ser	Leu	Cys	Gly	Tyr	Tyr														
			1060			1065						1070																	
Leu	Leu	Tyr	Val	Arg	Lys	Arg	Leu	Leu	Asn	Arg	Leu	Asn	Leu	Glu	Gln														
			1075			1080						1085																	
Val	Leu	Glu	Ile	Asn	Lys	Lys	Val	Phe	Ala	Ser	Ser	Leu	Val	Arg	Thr														
			1090			1095						1100																	
Gln	Glu	Ser	Ala	Glu	Ala	Leu	Gln	Arg	Glu	Glu	Asp	Thr	Leu	Lys	Glu														
1105				1110			1115						1120																
Ile	Pro	Gln	Arg	Ile	Val	Asn	Glu	Ser	Phe	Asp	Ser	Met	Asn	Glu	Leu														
			1125			1130						1135																	
Leu	Thr	Ile	Glu	Cys	Leu	Gly	Ile	Ala	Val	Tyr	Asn	Glu	Met	Gly	His														
			1140			1145						1150																	
Arg	Leu	Glu	Phe	Ala	Ser	Thr	Pro	Arg	Met	Asp	Thr	Pro	Pro	Glu	Ile														
			1155			1160						1165																	
Ile	Gln	Gln	Cys	Phe	Asp	Asn	Gln	Thr	Tyr	Leu	Ser	Asp	Gly	Asp	Met														
			1170			1175						1180																	
Gln	Ala	Leu	Pro	Leu	Leu	Val	Asp	Ala	Gly	Gly	Lys	His	Gln	Cys	Val														
1185				1190			1195						1200																
Gly	Val	Leu	Tyr	Leu	Glu	Arg	Gln	Glu	Asp	Ser	Met	Gln	Glu	Ala	Asp														
			1205			1210						1215																	
Arg	Leu	Leu	Phe	Gln	Leu	Ile	Ser	Arg	Tyr	Val	Gly	Ile	Val	Val	Phe														
			1220			1225						1230																	
Asn	Ala	Val	Val	Arg	Leu	Ala	Thr	Lys	Tyr	Arg	Asp	Ile	Glu	Ala	Ala														
			1235			1240						1245																	
His	Glu	Glu	Thr	Arg	Arg	Ala	Ser	Trp	Glu	Asp	Ser	Met	Leu	His	Val														
			1250			1255						1260																	
Gln	Asn	Met	Val</																										

Arg Gly Val Asn Tyr Lys Ile Thr Leu Thr Ile Glu Pro Leu Glu Ala
 1365 1370 1375
 Lys Val Ile Gly Asp Ile Asn Gln Leu Arg Phe Leu Ile Glu Asn Leu
 1380 1385 1390
 Ile Asp Glu Ala Leu Ser Phe His Gln Asp Gly Glu Leu Val Leu Lys
 1395 1400 1405
 Ala Ile Met Asp Gly Glu Tyr Val Arg Phe Leu Phe Thr Asp Arg Arg
 1410 1415 1420
 Arg Glu Lys Gln Val Glu Glu Leu Asn Gln Leu Phe Tyr Pro Asn Leu
 1425 1430 1435 1440
 Ala Arg Met Thr Ser Gly Glu Lys Gly Glu Leu Arg Gly Thr Glu Tyr
 1445 1450 1455
 Leu Ile Cys Lys Gln Ile Ile Arg Asp His Asp Glu Phe Ala Gly Arg
 1460 1465 1470
 Arg Gly Cys Arg Ile Asn Ala Glu Pro Ala Gln Gly Gly Gly Phe Thr
 1475 1480 1485
 Val Tyr Phe Thr Val Pro Lys Arg
 1490 1495

<210> 8948

<211> 329

<212> PRT

<213> B.fragilis

<400> 8948

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 Phe Asn Ile Leu Pro Pro Val Arg Thr Val Met Pro Asn Gly Val Pro
 20 25 30
 Leu Thr Ile Ile Asn Ala Gly Glu Gln Asp Val Val Arg Val Asp Ile
 35 40 45
 Leu Phe Gly Gly Gly Arg Trp Gln Gln Ser Gln Lys Leu Gln Ala Leu
 50 55 60
 Phe Ala Asn Arg Met Leu Arg Glu Gly Ser Arg Lys Tyr Thr Ala Ala
 65 70 75 80
 Glu Ile Ala Glu Lys Leu Asp Tyr Tyr Gly Ala Trp Leu Glu Leu Ser
 85 90 95
 Ser Ser Ala Glu Tyr Ala Tyr Ile Thr Leu Tyr Ser Leu Asn Lys Tyr
 100 105 110
 Phe Ala Glu Thr Leu Asp Val Leu Glu Ser Ile Ile Lys Glu Pro Leu
 115 120 125
 Phe Pro Glu Lys Glu Leu Gly Thr Val Ile Asp Ala Asn Ile Gln Gln
 130 135 140
 Tyr Gln Val Asn Ala Ser Lys Val Asp Phe Leu Ala His Arg Ser Leu
 145 150 155 160
 Leu Arg Ala Leu Tyr Gly Glu Glu His Pro Cys Gly Arg Tyr Val Glu
 165 170 175
 Glu Thr Asp Tyr His His Ile Thr Pro Ala Leu Leu Arg Glu Phe Tyr
 180 185 190
 Asp Thr Tyr Tyr His Ser Gly Asn Cys Tyr Val Tyr Leu Ser Gly Lys
 195 200 205
 Val Thr Asp Glu Ile Thr His Arg Ile Glu Ala Ala Phe Gly Thr Thr
 210 215 220
 His Phe Gly Asn His Gln Gln Val Ala Val Lys Lys Asp Phe Thr Phe
 225 230 235 240
 Val Ser Ile Pro Glu Lys Arg Leu Phe Ile Glu Arg Glu Asp Ala Met
 245 250 255
 Gln Ser Ala Val Lys Leu Gly Thr Thr Thr Ile Met Arg Thr His Pro
 260 265 270

Asp Tyr Leu Lys Leu Arg Val Leu Ile Thr Leu Phe Gly Gly Tyr Phe
 275 280 285
 Gly Ser Arg Leu Met Ser Asn Ile Arg Glu Glu Lys Gly Tyr Thr Tyr
 290 295 300
 Gly Ile Ser Ala Gly Ile Met Phe Ile Arg Ala Thr Val Cys Trp Val
 305 310 315 320
 Ser Val Gln Lys Gln Leu Met Asn Met
 325

<210> 8949

<211> 318

<212> PRT

<213> B.fragilis

<400> 8949

Glu Ile Met Asn Ser His Gln Glu Leu Phe Gly Gly Asn Ile Pro Gln
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 Asp Val Thr Gly Lys Gln Gly Glu Asn Ala Ile Phe Ile Val Tyr Gly
 20 25 30
 Leu Lys Gln Ser Asp Asn Thr Ile Lys Gln Val Lys Asp Leu Cys Ala
 35 40 45
 Asn Phe Ser Ala Leu Ile Arg Ser Met Arg Asn Arg Phe Pro Glu Met
 50 55 60
 Gln Phe Ser Cys Thr Ile Gly Phe Gly Ala Asp Ala Trp Lys Gln Leu
 65 70 75 80
 Phe Pro Glu Gln Gly Asn Pro Lys Glu Leu Lys Thr Phe Glu Thr Ile
 85 90 95
 Lys Gly Ala Lys Tyr Thr Ala Val Ser Thr Pro Gly Asp Ile Leu Leu
 100 105 110
 His Ile Arg Ala Lys Gln Met Gly Leu Cys Phe Glu Phe Ala Ser Ile
 115 120 125
 Ile Asp Glu Lys Leu Lys Gly Val Val Asp Ser Ile Asp Glu Thr His
 130 135 140
 Gly Phe Arg Tyr Met Asp Gly Lys Ala Ile Ile Gly Phe Val Asp Gly
 145 150 155 160
 Thr Glu Asn Pro Ala Val Asp Glu Asn Pro Tyr His Phe Ala Val Ile
 165 170 175
 Gly Asp Glu Asp Pro Asp Phe Ile Gly Gly Ser Tyr Val Phe Val Gln
 180 185 190
 Lys Tyr Ile His Asp Met Thr Ala Trp Asn Ser Leu Pro Val Glu Ala
 195 200 205
 Gln Glu Lys Val Ile Gly Arg His Lys Tyr Asn Asp Val Glu Leu Ser
 210 215 220
 Asp Glu Glu Lys Pro Gln Asn Ala His Asn Ala Val Thr Asn Ile Gly
 225 230 235 240
 Asp Asp Leu Lys Ile Val Arg Ala Asn Met Pro Phe Ala Asn Thr Ser
 245 250 255
 Lys Gly Glu Tyr Gly Thr Tyr Phe Ile Gly Tyr Ala Ser Thr Phe Ser
 260 265 270
 Thr Thr His Lys Met Leu Glu Asn Met Phe Ile Gly Asp Pro Val Gly
 275 280 285
 Asn Thr Asp Arg Leu Leu Asp Phe Ser Thr Pro Ile Thr Gly Thr Leu
 290 295 300
 Phe Phe Ala Pro Ser Tyr Asp Leu Leu Ala Lys Leu Gly Glu
 305 310 315

<210> 8950

<211> 238

<212> PRT

<213> B.fragilis

<400> 8950

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Thr Asp Met Lys Ile Arg Asn Leu Met Val Ala Ala Thr Leu Leu Val
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Thr Ala Gly Ala Met Ala Gln Asn Gln Asp Cys Ala Phe Phe Phe Pro
          20          25          30
Asn Gln Glu Gly Glu Gln Ile Thr Arg Asn Cys Tyr Thr Ala Asp Gly
          35          40          45
Lys Leu Thr Asn Ile Leu Val Tyr Arg Val Asp Gln Ala Tyr Glu Tyr
          50          55          60
Pro Ser Gly Met Glu Val Val Ala Asn Tyr Thr Phe Thr Asp Ala Thr
65          70          75          80
Gly Lys Thr Leu Asn Ser Gly Gln Met Val Ala Arg Cys Ser Asp Gly
          85          90          95
Asn Phe Ser Met Ser Met Gly Asp Val Ala Thr Phe Pro Thr Ala Leu
          100          105          110
Asn Met Met Asn Ala Asp Val Tyr Met Met Gly Asp Leu Met Asn Tyr
          115          120          125
Pro Asp Ala Phe Ser Asn Pro Met Asn Pro Gly Asp Asp Asp Glu Phe
130          135          140
Asp Asp Gly Thr Leu Arg Leu Tyr Gln Lys Gly Asn Lys Asn Asn Arg
145          150          155          160
Ala Glu Ile Ser Val Phe Asp Arg Glu Phe Val Thr Thr Glu Thr Val
          165          170          175
Asn Thr Pro Ala Gly Ala Phe Tyr Cys Thr Lys Val Lys Tyr Glu Met
          180          185          190
Asn Ile Trp Thr Pro Lys Glu Thr Ile Lys Gly Tyr Gly Tyr Glu Trp
          195          200          205
Tyr Ala Pro Asn Ile Gly Ile Val Arg Ser Glu Gln Tyr Asn Asn Lys
210          215          220
Lys Glu Leu Gln Ser Tyr Ser Val Leu Glu Arg Ile Lys Lys
225          230          235

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<210> 8951

<211> 344

<212> PRT

<213> B.fragilis

<400> 8951

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Arg Ile Met Lys Gln Lys Thr Ile His Ile Glu Asn Leu Ser Ile Gly
1          5          10          15
Tyr Leu Gly Lys Thr Asp Val Lys Val Val Ala Asp Arg Ile Asn Ala
          20          25          30
Gly Ile Asn Cys Gly Glu Leu Thr Cys Leu Leu Gly Ala Asn Gly Val
          35          40          45
Gly Lys Ser Thr Leu Leu Arg Thr Leu Ser Ala Phe Gln Pro Lys Leu
          50          55          60
Gly Gly Lys Ile Glu Ile Val Gly Lys Glu Ile Asp Ala Tyr Thr Asp
65          70          75          80
Lys Glu Leu Ser Thr Val Ile Ser Val Val Leu Thr Glu Lys Cys Asp
          85          90          95
Ile Arg Asn Met Thr Val His Glu Leu Val Gly Leu Gly Arg Ser Pro
          100          105          110
Tyr Thr Gly Phe Trp Gly Thr Leu Arg Gly Glu Asp Lys Glu Val Val
          115          120          125
Glu Arg Ser Ile Ala Leu Val Lys Ile Gln Asn Leu Ala His Arg Met
          130          135          140
Val His Thr Leu Ser Asp Gly Glu Arg Gln Lys Val Met Ile Ala Lys

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<210> 8952
<211> 725
<212> PRT
<213> B.fragilis
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Thr	Leu	Met	Lys	Lys	Leu	Met	Val	Ile	Leu	Ile	Thr	Gly	Leu	Leu	Tyr
1				5					10					15	
Met	Ser	Cys	Thr	Asp	Ser	Met	Glu	Val	Ser	Gly	Asp	Ala	Asp	Arg	Asn
			20					25					30		
Asn	Thr	Glu	Asp	Val	Ser	Val	Arg	Leu	Val	Ile	Thr	Ile	Pro	Ala	Ser
		35					40					45			
Thr	Thr	Tyr	Ala	Arg	Thr	Arg	Gly	Thr	Phe	Ala	Thr	Thr	Asp	His	Glu
	50					55					60				
Ser	Lys	Ile	Ser	Glu	Ile	Gln	Val	Leu	Val	Phe	Glu	Glu	Gly	Lys	Tyr
65					70					75				80	
Lys	Tyr	Arg	Val	Pro	Gly	Ile	Ser	Ile	Asn	Asn	Thr	Ser	Ser	Ala	Ala
			85						90					95	
Ser	Phe	Lys	Ala	Leu	Leu	Lys	Ser	Ser	Ser	Ser	Pro	Leu	Lys	Leu	Leu
			100					105					110		
Ile	Leu	Ala	Asn	Ala	Thr	Asp	Ala	Val	Ile	Ala	Asn	Glu	Pro	Ser	Val
	115						120					125			
Asp	Asp	Ser	Glu	Asp	Leu	Val	Lys	Lys	Asn	Ile	Asn	Leu	Arg	Phe	Asn
	130					135					140				
Asn	Ile	Thr	Ser	Asp	Phe	Pro	Met	Tyr	Gly	Glu	Tyr	Glu	Leu	Pro	Gly
145					150					155				160	
Gly	Leu	Glu	Ala	Thr	Val	Ile	Asn	Asn	Ile	Thr	Gly	Ile	Lys	Met	Leu
				165					170					175	
Arg	Ser	Ile	Ala	Arg	Val	Asp	Val	Lys	Ala	Thr	Glu	Val	Ala	Asn	Phe
			180					185					190		
Lys	Leu	Ser	Gly	Val	Lys	Ala	Tyr	Arg	Ala	Asn	Asp	His	Leu	Gln	Ile
		195					200					205			
Ile	Pro	Asp	Glu	Thr	Gly	Val	Val	Arg	Val	Thr	Leu	Pro	Ser	Val	Pro

210	215	220
Ala Gly Ser Ser Gly Asn Val Asn Ser Ile Leu Tyr Pro Val Pro Ala		
225	230	235
Glu Asn Leu Asn Glu Phe Ser Ala Gln Leu Tyr Leu Pro Glu Ala Asp		240
	245	250
Ser Pro Thr Pro Asp Asn Arg Val Ser Gln Ala Thr Cys Ile Val Val		255
	260	265
Glu Gly Tyr Tyr Glu Gly Ser Asp Gln Pro Gly Tyr Tyr Arg Met Asp		270
	275	280
Phe Asp Pro Asp Asn Val Glu Asn Ala Phe Gly Gln Val Leu Arg Asn		285
	290	295
His Lys Tyr Ile Phe Asn Ile Lys Lys Val Ser Gly Pro Gly Trp Gly		300
305	310	315
Ser Pro Asp Glu Ala Ala Asn Asn Arg Ser Ala His Ile Val Ala Glu		320
	325	330
Val Gln Ala Trp Asp Asp Tyr Thr Ile Asp Met Asn Phe Asp Gly Glu		335
	340	345
His His Phe Gly Val Ser Thr Arg Glu Ile Val Leu Lys Asn Lys Ala		350
	355	360
Gly Ser Ala Gly Ile Ile Asn Val Ser Thr Asp Leu Pro Asp Tyr Thr		365
370	375	380
Leu Gln Trp Ala Asp Ala Ala Gly Thr Pro Thr Gly Thr Gly Ser Gln		385
	390	395
Ser Leu Ala Asn Glu Tyr Phe Thr Val Thr Lys Ala Gln Asn Gly Ser		400
	405	410
Gln Leu Val Ile Thr Ala Leu Gln Ser Asn Ser Thr Asn Asp Thr Ser		415
	420	425
Arg Ile Gln Asn Phe Val Ile Thr Ala His Arg Trp Arg Ile Leu Val		430
	435	440
Asn Ile Gln Gln Lys Tyr Asp Val Ala Ala Tyr Gln Thr Ile His Leu		445
	450	455
Leu Thr Phe Asn Ala Gly Leu Gly Tyr Leu Gly Thr Asn Ile Ile Gly		460
465	470	475
Ser Gly Ser Ala Glu Ala Arg Ala Thr Gly Leu Arg Gly Ile Leu Asn		480
	485	490
Asn Gln Asn Asn Phe Gly Pro Thr Gly Thr Val Glu Cys Gly Gly Tyr		495
	500	505
Asn Leu Ile Gly Val Asn Ala Asn Tyr Asn Asn Leu Thr Asp Ala Leu		510
	515	520
Phe Ala Ser Phe Asp Val Val Tyr Val His Tyr Met Gly Asn Leu Leu		525
	530	535
Phe Gly Thr Ser Asp Ala Gln Lys Ala His Asn Trp Val Lys Ser Lys		540
545	550	555
Lys Asn Arg Val Leu Ile Val Ser Tyr Asp Ala Leu Asp Val Ser Gln		560
	565	570
Asn Leu Leu Lys Glu Ile Leu Gly Gly Asn Asn Gly Ile Ser Phe Leu		575
	580	585
Thr Ser Asn Thr Gly Pro Tyr Pro Leu Ala Thr Pro Glu Asn Gly Asn		590
	595	600
Ser Tyr Phe Ser Thr Thr Gly Pro Phe Thr Ser Ala Pro Tyr Thr Pro		605
	610	615
Ile Asn Thr Asp Phe Ser Leu Arg Asn Tyr Asp Ala Tyr His Gly Glu		620
625	630	635
Ile Gln Leu Asn Thr Glu Ala Ser Lys Gly Ile Thr Pro Ile Leu Met		640
	645	650
Gly Pro Ala Gly Gly Ile Val Leu Gly Ile Asp Tyr Ser Arg Arg Ile		655
	660	665
Val Tyr Trp Gly Asp Thr Asp Ile Gly Ser Ser Ala Ser Ser Ser Thr		670
	675	680
		685

Ser Thr Thr Asp Asn Arg Ile Asn Asn Asn Ser Gly Thr Ile Asn Asn
 690 695 700
 Asn Ala Ser Lys Leu Ile Ala Asn Val Phe Ala Trp Ile Ala Glu Thr
 705 710 715 720
 Val Leu Tyr Gly Glu
 725

<210> 8953
 <211> 428
 <212> PRT
 <213> B.fragilis

<400> 8953
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 20 25 30
 Val Ser Asp Gln Val Met Glu Ala Met Gly Ser Cys Leu Thr Asn Lys
 35 40 45
 Tyr Ala Glu Gly Tyr Pro Gly Lys Arg Tyr Tyr Gly Gly Cys Glu Val
 50 55 60
 Val Asp Gln Ser Glu Gln Ile Ala Ile Asp Arg Leu Lys Glu Ile Phe
 65 70 75 80
 Gly Ala Glu Trp Ala Asn Val Gln Pro His Ser Gly Ala Gln Ala Asn
 85 90 95
 Ala Ala Val Phe Leu Ala Val Leu Asn Pro Gly Asp Lys Phe Met Gly
 100 105 110
 Leu Asn Leu Ala His Gly Gly His Leu Ser His Gly Ser Leu Val Asn
 115 120 125
 Thr Ser Gly Ile Ile Tyr Thr Pro Cys Glu Tyr Asn Leu Lys Gln Glu
 130 135 140
 Thr Gly Arg Val Asp Tyr Asp Gln Met Glu Glu Val Ala Leu Arg Glu
 145 150 155 160
 Lys Pro Lys Met Ile Ile Gly Gly Gly Ser Ala Tyr Ser Arg Glu Trp
 165 170 175
 Asp Tyr Lys Arg Met Arg Glu Ile Ala Asp Lys Val Gly Ala Ile Leu
 180 185 190
 Met Ile Asp Met Ala His Pro Ala Gly Leu Ile Ala Ala Gly Leu Leu
 195 200 205
 Asp Asn Pro Val Lys Tyr Ala His Ile Val Thr Ser Thr Thr His Lys
 210 215 220
 Thr Leu Arg Gly Pro Arg Gly Gly Val Ile Met Met Gly Lys Asp Phe
 225 230 235 240
 Pro Asn Pro Trp Gly Lys Lys Thr Pro Lys Gly Glu Ile Lys Met Met
 245 250 255
 Ser Gln Leu Leu Asp Ser Ala Val Phe Pro Gly Ile Gln Gly Gly Pro
 260 265 270
 Leu Glu His Val Ile Ala Ala Lys Ala Val Ala Phe Gly Glu Cys Leu
 275 280 285
 Gln Pro Glu Tyr Lys Glu Tyr Gln Lys Gln Val Gln Lys Asn Ala Ala
 290 295 300
 Val Leu Ala Gln Ala Leu Ile Asp Arg Gly Phe Thr Ile Val Ser Gly
 305 310 315 320
 Gly Thr Asp Asn His Ser Met Leu Val Asp Leu Arg Ser Lys Tyr Pro
 325 330 335
 Thr Leu Thr Gly Lys Val Ala Glu Lys Ala Leu Val Ser Ala Asp Ile
 340 345 350
 Thr Val Asn Lys Asn Met Val Pro Phe Asp Ser Arg Ser Ala Phe Gln
 355 360 365

Thr Ser Gly Ile Arg Leu Gly Thr Pro Ala Ile Thr Thr Arg Gly Ala
 370 375 380
 Lys Glu Asp Leu Met Leu Glu Ile Ala Glu Met Ile Glu Thr Val Leu
 385 390 395 400
 Ser Asn Val Glu Asn Glu Glu Val Ile Ala Gln Val Arg Ala Arg Val
 405 410 415
 Asn Lys Thr Met Glu Lys Tyr Pro Ile Phe Ala Tyr
 420 425

<210> 8954
 <211> 467
 <212> PRT
 <213> B.fragilis

<400> 8954
 Tyr Ile His Leu Asn Lys Lys Ile Met Lys Thr Ser Lys Ile Phe Met
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 Thr Thr Leu Val Ala Leu Thr Met Ala Ala Cys Ser Asn Asp Asn Asp
 20 25 30
 Trp Val Asp Gln Ser Ser Asn Pro Asp Val Ile Ala Pro Asp Ala Tyr
 35 40 45
 Ala Ser Phe Ser Ile Asn Ile Pro His Ala Ser Lys Thr Arg Ala Val
 50 55 60
 Ser Thr Asp Pro Gly Ile Ala Ala Glu Asn Thr Val Lys Ser Leu His
 65 70 75 80
 Val Phe Ile Tyr Asp Ala Glu Ser Pro Asn Thr Pro Thr Val Ala Glu
 85 90 95
 Phe Thr Val Ala Gly Gly Thr Leu Thr Gln Lys Pro Ala Gly Ser Ser
 100 105 110
 Thr Trp Met Thr Ser Gln Pro Ile Ser Thr Lys Lys Thr Asp Lys Tyr
 115 120 125
 Ile Phe Ala Gly Val Asn Leu Asn Thr Glu Ile Val Asn Tyr Ile Thr
 130 135 140
 Ser Asn Gly Leu Gly Ala Phe Ser Tyr Lys Asp Phe Thr Gln Glu Ile
 145 150 155 160
 Thr Lys Leu Ala Asp Gln Thr Asn Gly Phe Val Met Phe Asn Ser Ala
 165 170 175
 Tyr Pro Thr Leu Thr Pro Ala Ala Asp Leu Tyr Glu Lys Lys Ser Glu
 180 185 190
 Ala Glu Asn Asn His Ile Thr Ile Ser Val Asn Arg Ile Thr Ala Lys
 195 200 205
 Ala Ala Val Phe Gln Ser Gln Ser Phe Val Val Asn Gly Gly Gly Thr
 210 215 220
 Met Thr Asp Leu Lys Phe Gly Trp Arg Asn Leu Asn Lys Lys Phe Tyr
 225 230 235 240
 Phe Ile Gln Asp Asn Arg Asp Thr Leu Ile Lys Asp Tyr Asn Trp Ala
 245 250 255
 Asn Tyr Thr Ala Glu Asp Phe Thr Arg Gly Thr Asp Ala Ile Asn Val
 260 265 270
 Tyr Ala Ser Ala Asp Val Pro Thr Ser Phe Ser Tyr Ala Thr Glu Asn
 275 280 285
 Ala Phe Gln Tyr Ile Ser Gly Thr Ser Asn Val Asp Ala Ala Thr Phe
 290 295 300
 Ile Ser Val Ser Gly Val Phe Thr Pro Thr Asn Ile Ile Ser Ala Lys
 305 310 315 320
 Lys Asn Pro Pro Thr Val Ala Ala Asp Phe Glu Ile Ile Val Asn Pro
 325 330 335
 Lys Pro Ala Asp Lys Thr Phe Phe Val Val Arg Thr Ala Asp Gly Val
 340 345 350

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Ala Asn Tyr Phe Ile Asp Gly Pro Thr Ala Glu Lys Phe Ala Glu Leu
 355 360 365
 Cys Ala Ala Asn Thr Pro Gln Met Pro Ser Ile Asn Gly Ile Tyr Leu
 370 375 380
 Leu Ser Glu Asn Thr Tyr Ser Asn Gly Leu Cys Tyr Tyr His Ile Phe
 385 390 395 400
 Val Asn Gly Asp Ala Val Thr Pro Gln Ala Pro Tyr Asn Ile Tyr Arg
 405 410 415
 Asn Gln Tyr Phe Lys Ile Asn Ile Asn Ser Ile Gln Ala Pro Gly Asn
 420 425 430
 Pro Ser Asp Asn Phe Asp Arg Gly Glu Pro Ile Lys Pro Asn Ser Trp
 435 440 445
 Ile Gly Val Asp Ile Gln Ile Ile Pro Trp Glu Val Ile Glu Glu Asp
 450 455 460
 His Asp Leu
 465

<210> 8955

<211> 468

<212> PRT

<213> B.fragilis

<400> 8955

Gln Glu Ile Asp Ser Tyr Gly Gly Arg Phe Gly Ile Tyr His Val Cys
 1 5 10 15
 Leu Thr Leu Thr Ser Gln Ala Met Lys Ile Gly Arg Lys Ile Ala Leu
 20 25 30
 Phe Tyr Thr Leu Val Thr Val Leu Thr Thr Met Ala Val Ile Gly Val
 35 40 45
 Phe Tyr Leu Phe Ser Ser Arg Tyr Ile Asp Gly Leu Tyr Arg Ser Tyr
 50 55 60
 Leu Arg Glu Lys Ala Phe Leu Thr Ala Gln Lys His Trp Glu Arg Asp
 65 70 75 80
 Glu Val Asp Glu Gln Ser Tyr Gln Thr Ile Gln Arg Lys Tyr Asp Glu
 85 90 95
 Leu Leu Pro Glu Ala Lys Glu Ile Leu Leu Asp Met Asp Ser Asp Ala
 100 105 110
 Val Val Arg Asp Thr Leu Asn Lys Tyr Leu Ser Ala Ser Gln Gln Lys
 115 120 125
 Gln Leu Leu Glu Ser Lys Glu Met Ser Ser Val Ser Phe Val Tyr Gln
 130 135 140
 Asp Met Leu Gly Ala Ala Leu Tyr Tyr Pro Asp Asn Glu Gly Asn Phe
 145 150 155 160
 Ile Val Ile Ile Met Ser His Asn Ser Tyr Gly Val Lys Ile Gln Glu
 165 170 175
 His Leu Leu Leu Leu Ser Ala Phe Leu Val Leu Cys Ser Ser Val Leu
 180 185 190
 Ile Phe Phe Ile Gly Gln Leu Tyr Ser Thr Arg Ile Leu Ile Pro Leu
 195 200 205
 Gln His Val Leu Leu Gln Leu Lys Gln Ile Arg Gly Asn Ser Leu Asn
 210 215 220
 Arg Arg Leu Lys Thr Thr Gly Asn Lys Asp Glu Leu Asp His Leu Ile
 225 230 235 240
 Glu Thr Leu Asn Ser Met Leu Asp Arg Ile Asp Thr Ala Phe Arg Ala
 245 250 255
 Glu Lys Ser Phe Val Ser His Ala Ser His Glu Leu Asn Asn Pro Ile
 260 265 270
 Thr Ala Ile Gln Gly Glu Cys Glu Ile Ser Leu Leu Lys Glu Arg Ser
 275 280 285

Thr Asp Glu Tyr Ile Glu Ala Leu Arg Arg Ile Ala Gly Glu Ser Lys
 290 295 300
 Arg Leu Ser Asn Leu Ile Arg His Leu Leu Phe Leu Ser Arg Gln Glu
 305 310 315 320
 Glu Asp Ile Arg Lys Asn Asn Val Glu Glu Ile Arg Leu Ala Asp Leu
 325 330 335
 Leu Glu Glu Ala Gly Ala Ala Asn Pro Arg Ile Arg Leu Gln Tyr Pro
 340 345 350
 Glu Asp Ala Ala Arg Tyr Ala Val Val Ser Ala Ser Pro Tyr Leu Phe
 355 360 365
 Lys Ile Ala Leu Gln Asn Val Ile Asp Asn Ala Cys Lys Tyr Ser Gln
 370 375 380
 Gly Glu Val Leu Ile Arg Leu Tyr Lys Glu Asp Glu Arg Trp Gly Ile
 385 390 395 400
 Ala Val Lys Asp Ser Gly Ile Gly Ile Pro Ala Asp Glu Met Glu Leu
 405 410 415
 Ile Phe Gln Ser Phe Tyr Arg Gly Ser Asn Thr Arg Glu Tyr Ala Gly
 420 425 430
 Gln Gly Ile Gly Leu Ser Leu Ser Met Lys Ile Phe Ser Val Tyr Arg
 435 440 445
 Gly Lys Val Ser Ile Arg Ser Glu Glu Gly Lys Gly Thr Glu Val Arg
 450 455 460
 Val Val Phe Ala
 465

<210> 8956

<211> 312

<212> PRT

<213> B.fragilis

<400> 8956

Thr Tyr Asn Asp Met Glu Asn Arg Ser Leu Val Thr Ile Ala Glu His
 1 5 10 15
 Ser Arg Glu Lys Ile Leu Tyr Met Leu Glu Met Ala Lys Gln Phe Glu
 20 25 30
 Lys Asn Pro Asn Arg Arg Leu Leu Glu Gly Lys Val Val Ala Thr Leu
 35 40 45
 Phe Phe Glu Pro Ser Thr Arg Thr Arg Leu Ser Phe Glu Thr Ala Ala
 50 55 60
 Asn Arg Leu Gly Ala Arg Val Ile Gly Phe Ser Asp Pro Lys Ala Thr
 65 70 75 80
 Ser Ser Ser Lys Gly Glu Thr Leu Lys Asp Thr Ile Met Met Val Ser
 85 90 95
 Asn Tyr Ala Asp Val Ile Val Met Arg His Tyr Leu Glu Gly Ala Ala
 100 105 110
 Arg Tyr Ala Ser Glu Val Ala Pro Val Pro Ile Val Asn Ala Gly Asp
 115 120 125
 Gly Ala Asn Gln His Pro Ser Gln Thr Met Leu Asp Leu Tyr Ser Ile
 130 135 140
 Tyr Lys Thr Gln Gly Thr Leu Glu Asn Leu Asn Ile Tyr Leu Val Gly
 145 150 155 160
 Asp Leu Lys Tyr Gly Arg Thr Val His Ser Leu Leu Met Ala Met Arg
 165 170 175
 His Phe Asn Pro Thr Phe His Phe Ile Ala Pro Glu Glu Leu Lys Met
 180 185 190
 Pro Glu Glu Tyr Lys Ile Tyr Cys Lys Glu His Asn Ile Lys Tyr Val
 195 200 205
 Glu His Thr Asp Phe Asn Glu Glu Val Ile Lys Asp Ala Asp Ile Leu
 210 215 220

Tyr Met Thr Arg Val Gln Arg Glu Arg Phe Thr Asp Leu Met Glu Tyr
 225 230 235 240
 Glu Arg Val Lys Asn Val Tyr Ile Leu Lys Ala Lys Met Leu Glu Asn
 245 250 255
 Thr Arg Ser Asn Leu Arg Ile Leu His Pro Leu Pro Arg Val Asn Glu
 260 265 270
 Ile Ala Tyr Asp Val Asp Asp Ser Pro Lys Ala Tyr Tyr Phe Gln Gln
 275 280 285
 Ala Gln Asn Gly Leu Tyr Ala Arg Gln Ala Ile Leu Cys Asp Val Leu
 290 295 300
 Gly Ile Thr Leu Gln Asp Ile Leu
 305 310

<210> 8957

<211> 300

<212> PRT

<213> B.fragilis

<400> 8957

Lys Lys Lys Glu Met Lys Asn Ile Leu Ile Ile Gly Ala Asn Gly Phe
 1 5 10 15
 Thr Gly Arg Arg Ile Leu Asn Asp Leu Ser Val Asn Pro Ile Tyr His
 20 25 30
 Val Thr Gly Cys Ser Leu Arg Asp Asp Ile Cys Pro Gly Lys Asp Tyr
 35 40 45
 Arg Phe Val Arg Thr Asp Ile Arg Asp Glu Asn Glu Val Arg Lys Leu
 50 55 60
 Phe Lys Glu Cys Arg Pro Asp Ile Val Ile Asn Thr Ser Ala Leu Ser
 65 70 75 80
 Val Pro Asp Tyr Cys Glu Thr His His Ala Glu Ala Glu Ala Thr Asn
 85 90 95
 Val Thr Ala Val Glu Thr Ile Ala His Val Cys Glu Gln Tyr Gly Ser
 100 105 110
 Arg Phe Ile His Leu Ser Thr Asp Phe Val Phe Asp Gly Lys Ser Ile
 115 120 125
 Arg Leu Tyr Lys Glu Glu Asp Glu Ala Ile Pro Val Asn Tyr Tyr Gly
 130 135 140
 Val Thr Lys Leu Lys Ala Glu Lys Ile Ile Ala Ser Ile Cys Ser Asn
 145 150 155 160
 Tyr Ala Ile Val Arg Val Val Val Tyr Gly Lys Ala Leu Pro Gly
 165 170 175
 Gln His Gly Asn Ile Leu Gln Leu Val Ala Asn Arg Leu Arg Asn Gly
 180 185 190
 Glu Thr Ile Arg Val Val Ser Asp Gln Trp Arg Thr Pro Thr Phe Val
 195 200 205
 Gly Asp Ile Ser Val Gly Val Glu Lys Leu Met Phe His Thr Ala Asn
 210 215 220
 Gly Ile Tyr His Ile Cys Gly Ser Glu Cys Leu Thr Ile Ala Glu Ile
 225 230 235 240
 Ala Tyr Arg Val Ala Asp Phe Leu Lys Leu Asp Arg Ser Leu Ile Glu
 245 250 255
 Pro Val Thr Thr Glu Glu Met Lys Glu Ala Thr Pro Arg Pro Arg Phe
 260 265 270
 Ser Gly Leu Ser Ile Glu Lys Ala Lys Ala Glu Ile Gly Tyr Thr Pro
 275 280 285
 Arg Thr Leu Glu Glu Gly Met Glu Ala Ser Leu Phe
 290 295 300

<210> 8958

<211> 244
 <212> PRT
 <213> B.fragilis

<400> 8958

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Asn Ser Met Glu Asp Lys Lys Phe Lys Val Ile Ile Val Glu Asp Val
1          5          10          15
Lys Leu Glu Leu Lys Gly Thr Glu Glu Ile Phe Arg His Glu Ile Pro
          20          25          30
Asn Ala Glu Val Ile Gly Thr Ala Met Thr Glu Asn Glu Phe Trp Pro
          35          40          45
Leu Met Glu Thr Gln Leu Pro Asp Met Val Leu Leu Asp Leu Gly Leu
          50          55          60
Glu Gly Ser Thr Thr Ile Gly Val Asp Ile Cys Arg Asn Ile Phe Lys
65          70          75          80
Arg Tyr Pro Gly Val Arg Val Leu Ile Phe Thr Gly Glu Ile Leu Asn
          85          90          95
Glu Lys Leu Trp Val Asp Val Leu Asn Ala Gly Ala Asp Gly Ile Ile
          100          105          110
Leu Lys Thr Gly Glu Leu Leu Thr Lys Thr Asp Val Gln Ala Val Met
          115          120          125
Asp Gly Lys Lys Leu Val Phe Asn Tyr Pro Ile Leu Glu Lys Ile Val
          130          135          140
Glu Arg Phe Lys Lys Ser Val Ala Asn Asp Ala Lys Arg Gln Glu Ala
145          150          155          160
Val Ile Ser Tyr Asp Ile Asp Glu Tyr Asp Glu Arg Phe Leu Arg His
          165          170          175
Leu Ala Leu Gly Tyr Thr Lys Glu Met Ile Ala Asn Leu Lys Gly Met
          180          185          190
Pro Phe Gly Val Lys Ser Leu Glu Lys Arg Gln Asn Asp Leu Ile Gly
          195          200          205
Arg Leu Phe Pro Gln Gly Glu Arg Val Gly Val Asn Ala Thr Arg Leu
          210          215          220
Val Val Arg Ala Leu Glu Leu Arg Ile Ile Asp Leu Asp Asn Leu Glu
225          230          235          240
Ala Asp Glu Glu

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<210> 8959
 <211> 181
 <212> PRT
 <213> B.fragilis

<400> 8959

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His Arg Thr Asp Met Lys Lys Leu Ile Phe Phe Leu Leu Leu Leu Leu
1          5          10          15
Ser Thr Ala Ser Leu Ser Ala Gln Ser Glu Gln Pro Ser Asp Ser Ile
          20          25          30
Arg His Leu Pro Ser Thr Val Lys Gln Tyr Gly Asp Phe Leu Ile Asp
          35          40          45
Met Gly Leu Phe Ile Ala Ala Pro Pro Lys Leu Pro Lys Tyr Lys Phe
          50          55          60
Glu Leu Pro Asp Ala Ser Lys Asp Tyr Asn Arg Ile Phe Ser Leu Asn
65          70          75          80
Pro Asp Val Ile Met Thr Gln Gly Leu Ser Asn Val Phe Thr Pro Ser
          85          90          95
Leu Ser Tyr Gly Phe Gly Trp Gly Gly His Asp Phe Phe Ser Ser Pro
          100          105          110
Gln Gln Leu Gln Met Gly Ser Phe Lys Leu Lys Asn Gly Met Arg Leu

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      115              120              125
Asn Thr Tyr Gly Glu Tyr Asn Ala Asp Gly Lys Lys Val Pro Asn Pro
      130              135              140
Ala Ala Met Pro Trp Glu Lys Asn Asn Phe Lys Gly Ala Phe Glu Met
145              150              155              160
Lys Ser Ser Asp Gly Asn Phe Gly Ile Arg Ile Glu Val Gln Gln Gly
      165              170              175
Arg Asn Tyr Pro Tyr
      180

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<210> 8960
 <211> 69
 <212> PRT
 <213> B.fragilis

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<400> 8960
Leu Arg Leu Phe Ile Arg Thr Cys Cys Pro Ile Ile Arg Leu Ser Ile
1              5              10              15
Thr Asn Asp Ser Ile Asn Leu Ser Asp Glu Thr Thr Asp Asn Thr Ser
      20              25              30
Tyr Ala Ala Tyr Ser Arg Ile Tyr Phe Cys Leu Phe Ser Ala Glu Ser
      35              40              45
Val Val Gly Leu Gly Phe His Ser His Arg Phe Gly Met Glu His Thr
      50              55              60
Leu Gly Arg Asn Gly
65

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<210> 8961
 <211> 75
 <212> PRT
 <213> B.fragilis

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<400> 8961
Gly Leu Gly Leu Phe Ser Gln Ile Gln Arg Trp Thr Phe Ser Arg Lys
1              5              10              15
Asn Pro Trp Arg Leu Met Asn Gly Val Asn Lys Asp Phe Ser Ile Ile
      20              25              30
Thr Ser His Met Asn Leu Leu Ser Asn Tyr Ala Thr Ile Gly Asn Val
      35              40              45
Cys Lys Asp Val Tyr Leu Phe Ser Lys Leu Arg His Lys Leu Phe Thr
      50              55              60
Ser Ser Cys Cys Arg Leu Lys Lys Trp Ile Arg
65              70              75

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<210> 8962
 <211> 72
 <212> PRT
 <213> B.fragilis

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<400> 8962
Gln Glu Pro Cys Phe Ser His Leu His Thr Ile Cys Leu Leu Asn Ser
1              5              10              15
Glu Ser Asn Ser Tyr Ser Pro Tyr Ser Thr Val Ser Ala Ile Gln Ala
      20              25              30
Lys Thr Leu Ala Met Ser Leu Asp Ala Leu Leu Leu Met Val Pro Glu
      35              40              45
Leu Leu Phe Ile Arg Leu Ser Val Val Asp Val Glu Leu Asp Ala Glu
      50              55              60
Leu Pro Ile Ser Val Ser Pro Gln

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65

70

<210> 8963
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 8963

Gly Arg Arg Leu Asn Ile Phe Ser Leu Lys Lys Pro Val Lys Phe Asn
 1 5 10 15
 Lys Gln Phe Val Thr Asp Ala Asp Ala Trp Trp Lys Ala Asp Asn Gly
 20 25 30
 Asn Phe Gly Ile Ile Leu Pro Pro Thr Gly Ser Leu Pro Ala Val Gly
 35 40 45
 Ser Pro Met Ser Pro Trp Ser Trp Asp Phe Pro Gly Gly Ser Gly Ser
 50 55 60
 Pro Leu Arg Ile Ser Asp Tyr Ala Gly Tyr Asn Pro Lys Ala Pro His
 65 70 75 80
 Leu Phe Ser Met His Pro Asp Pro Gly Leu Tyr Pro Asn Ser Gln Phe
 85 90 95
 Arg Cys Ser Ile Leu Leu Arg Gln Asn Ala Glu Ile Ser Ile Asn Asn
 100 105 110
 Ile Ala Asp Ile Ser Arg Ala Tyr Met Gly Val Val Val Arg His Gln
 115 120 125
 Ala Asn Gly Glu Leu Arg Phe Arg Thr Leu Asn Arg Ser Val Met Glu
 130 135 140
 Met Gln Gln Gln Glu Tyr Ala Val Val Leu Asp Val Pro Asn Trp Pro
 145 150 155 160
 Asp Gly Lys Val Asp Val Tyr Met Val Ala Ser Tyr Ala Glu Ala Ser
 165 170 175
 Glu Gln Ser Tyr Ser Ser Ile Asn Val Thr Leu Phe Ser Met Asn Gln
 180 185 190
 Gly Pro Leu Glu Thr Ala Tyr Met Val Lys Thr Leu Ala Lys Pro Val
 195 200 205
 Pro Asn Ser Phe Lys Phe Asp Tyr Lys Val Val Asn Asp Phe Ala Asn
 210 215 220
 Glu Tyr His Leu Glu Cys Thr Phe Thr Ser Ile Lys Gly Ala Trp Glu
 225 230 235 240
 Lys Ala Arg Phe Ser Val Phe Leu Glu Ser Asp Pro Ile Gly Ala Phe
 245 250 255
 Leu Gly Gly Met Gly Glu Ser Leu Ser Pro Ala Pro Ile Gly Glu Met
 260 265 270
 Leu Ser Gln Gly Glu Ser Tyr Thr Phe Asn Ser Gln Ser Phe Thr Arg
 275 280 285
 Val Gln Thr Ser Gln Asn Asn Tyr Val Asn Tyr Thr Ala Arg Tyr Leu
 290 295 300
 Gly Asp Asn Tyr Gln Ser Gly Ser Ile Phe Phe Arg Ala Lys
 305 310 315

<210> 8964
 <211> 447
 <212> PRT
 <213> B.fragilis

<400> 8964

Lys Asn Asn Arg Arg Ile Trp Gly Ile Gln Ser Phe Thr Gly Met Lys
 1 5 10 15
 Thr Glu Asp Ile Ala Ile Ser Ile Thr Gly Tyr Ser Tyr Ser Asn Ile
 20 25 30

Lys Glu Thr Ile Pro Asp Gly Val Asp Lys Glu Glu Ile Ala Ala Val
 35 40 45
 Tyr Glu Glu Ile Ile Asp Glu Tyr Leu Gln Lys Gly Ile Pro Arg Glu
 50 55 60
 Ile Pro Ala Leu Ile Asn Val Ser Gly Ile Pro Gly Ala Gly Lys Ser
 65 70 75 80
 Thr Phe Cys Lys Lys Leu Leu Ala Met Pro Glu Asn Ser Ser Ala Ile
 85 90 95
 Tyr Ile Gly Phe Asp Ala Ile Met Glu Asn Glu Arg Leu Pro Tyr Ile
 100 105 110
 Arg Glu Glu Val Asn His Ala Glu Glu Ala Phe Lys Arg Trp Glu Leu
 115 120 125
 Ser Ala Arg Ile Ala Gly Tyr Glu Leu Leu Lys Arg Ala Ile Glu Asn
 130 135 140
 Lys Tyr Leu Ile Ile Phe Asp His Ser Ser Ala Leu Pro Gln His Ile
 145 150 155 160
 Asp Leu Phe Asn Leu Leu Leu Ser Glu Gly Tyr Glu Val His Phe Asn
 165 170 175
 Phe Ile Phe Ile Pro Glu Glu Glu Ala Arg Arg Arg Ala Lys Asn Arg
 180 185 190
 Lys Arg Tyr Ile Pro Pro Tyr Tyr Ile Glu Glu Arg Ser Lys Thr Leu
 195 200 205
 Gln Tyr Leu Leu Pro Glu Tyr Lys Arg Ile Cys Thr Thr Phe Lys Gln
 210 215 220
 Ile Glu Pro Met Arg Thr Arg Leu Ile Ile Ala Arg His Gly Asn Thr
 225 230 235 240
 Phe Arg Pro Glu Glu Thr Pro Thr Arg Val Gly Ala Lys Thr Asp Leu
 245 250 255
 Pro Leu Val Glu Glu Phe Lys Gly Arg Ser Ile Gly Arg Tyr Leu Lys
 260 265 270
 Glu His Asp Met Ile Pro Asp Val Ile Tyr Ala Ala Pro Leu Leu Arg
 275 280 285
 Thr Met Gln Thr Ala Arg Leu Ala Val Gln Thr Ile Gly Leu Asp Ser
 290 295 300
 Asp Ile Ser Pro Leu Asn Ala Phe Val Glu Ile Asp Tyr Gly Val Asp
 305 310 315 320
 Glu Asn Lys Thr Glu Glu Val Arg Leu Arg Leu Gly Asn Gly Asn
 325 330 335
 Ile Glu Lys Gly Lys Lys Ile Ile Glu Asp Trp Asp Lys Asn Ala Val
 340 345 350
 Val Pro Asp Gly Trp Lys Val Asp Pro Asp Gln Ile Ile His Thr Trp
 355 360 365
 Leu Asp Phe Ala Glu Lys Thr Val Ile Pro His Gln Thr Thr Leu Leu
 370 375 380
 Val Thr Ser Asn Gly Ile Ile Arg Phe Ala Pro Tyr Leu Thr Gly Asp
 385 390 395 400
 Phe Glu Lys Phe Ala Gln Glu His Lys Ile Lys Val Ala Pro Gly Gly
 405 410 415
 Leu Cys Ile Phe Asp Lys Asn Asp Gly Asp Ser Phe Trp Thr Cys Ser
 420 425 430
 Ala Trp Asn Val Lys Pro Tyr Glu Leu Tyr Ala Asp Ser His Tyr
 435 440 445

<210> 8965

<211> 451

<212> PRT

<213> B.fragilis

<400> 8965

Lys Trp Leu Arg Glu Asp Phe Val Phe Leu Ile Lys Thr Met Val Ile
 1 5 10 15
 His Ser Gly Leu Ala Leu Pro Gly Met Ser Ser Leu Met Asn Tyr Met
 20 25 30
 Gln Ile Ala Thr Thr Glu Asn Thr Ile Tyr Thr Ser Pro Asp Ala Ser
 35 40 45
 Lys Ile Phe Cys Tyr Thr Pro Ser Ile Ile Val Thr Pro Thr Gly Arg
 50 55 60
 Leu Ile Val Ser Phe Asp Leu Gly Gly Glu Gly Val Lys Ser Ile Glu
 65 70 75 80
 Gly His Lys Ser Ser Arg Ala Gly Gly Ser Arg Phe Gly Gln Gly Lys
 85 90 95
 Ile Phe Ile Ser Asp Asp Asn Gly Gln Lys Trp Thr Phe Val Gln Asn
 100 105 110
 Phe Pro Phe Trp His Ala Arg Leu Phe Thr Ile Gly Asn Ser Ile Tyr
 115 120 125
 Leu Ile Gly His Ala Gly Asp Ile Cys Ile Met Lys Ser Glu Asp Asn
 130 135 140
 Gly Glu Ser Trp Ser Asp Thr Tyr Phe Leu Thr His Gly Glu Lys Trp
 145 150 155 160
 His Ser Ser Ala Cys Asn Val Leu Phe Ser Asn Gly Asn Val Tyr Leu
 165 170 175
 Ala Met Glu Gln Arg Cys Arg Leu Asn Glu Val Thr Gly Trp Asp Val
 180 185 190
 Ala Gly Leu Ser Pro Thr Leu Phe Arg Ala Cys Val Glu Asp Asn Leu
 195 200 205
 Cys Leu Ala Ser Ser Trp Ser Arg Ser Glu Lys Phe Ile Tyr Lys Glu
 210 215 220
 Val Phe Asp Gly Ala Lys Leu Asp Phe Phe Gly Ile Pro Phe Tyr Asp
 225 230 235 240
 Cys Glu Thr Asn Lys Pro Lys Glu Ile Ala Thr Gly Ile Asn Asn Ala
 245 250 255
 Pro Leu Gly Trp Leu Glu Ala Asn Val Val Lys Phe Val Asp Lys Asp
 260 265 270
 His Ile Trp His Thr Asp Leu Lys Glu Val Phe His Leu Phe Leu Arg
 275 280 285
 Ala His Thr Gly Gly Val Asn Tyr Ala His Leu Phe Lys Ile Glu Ile
 290 295 300
 Gln Asp Asp Gln Ser Met Ile Pro Ser Leu Glu His Thr Pro Ser Gly
 305 310 315 320
 Gln Lys Ile Ser Tyr Ile Pro Phe Pro Gly Gly His Leu Lys Phe Phe
 325 330 335
 Ile Ile Tyr Asp Glu Leu Thr Arg Phe Tyr Trp Leu Val Ser Asn Gln
 340 345 350
 Ala Thr Asp Ser Met Arg Arg Val Ser Ser Leu Ser Asn Ile Lys Arg
 355 360 365
 Tyr Gly Leu Pro Asn Asn Glu Arg His Arg Leu Gln Leu His Phe Ser
 370 375 380
 Arg Asn Cys Val Asp Trp Cys Phe Val Gly Met Val Ala Cys Ser Thr
 385 390 395 400
 Asn Glu Leu Tyr Ser Arg Asn Tyr Pro Ser Ala Val Ile Lys Gly Asp
 405 410 415
 Asp Leu His Leu Val Cys Arg Ser Ala Asp Glu His Ala Leu Asn Pro
 420 425 430
 Gln Tyr Asn Asn Met Ile Thr His His Ile Val Ser Asn Phe Arg Gln
 435 440 445
 Leu Ile Tyr
 450

<210> 8966
 <211> 706
 <212> PRT
 <213> B.fragilis

<400> 8966

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Lys Met Lys Arg Ile Tyr Leu Thr Phe Val Phe Ala Gly Ala Val Cys
1          5          10          15
Phe Gln Val Ala Ala Gln Asn Ala Asp Glu Asp Arg Ile Leu Ser Ala
          20          25          30
Asp Ser Leu Ile Thr Met Asp Gly Arg Leu Asp Ser Leu Tyr Arg Ser
          35          40          45
Leu Pro Glu Val Met Val Val Gly Glu Arg Pro Val Val Lys Ala Met
          50          55          60
Gln Gly Lys Leu Val Tyr Asp Leu Pro Arg Leu Ile Gln Asn Phe Ala
65          70          75          80
Val Asp Asn Ala Tyr Asp Ala Ile Lys Glu Leu Pro Gly Val Ser Glu
          85          90          95
Met Asn Asp Asn Leu Thr Leu Gly Gly Lys Ser Val Thr Val Val Leu
          100          105          110
Asp Gly Lys Val Thr Thr Met Thr Gln Glu Gln Leu Asn Thr Leu Leu
          115          120          125
Lys Ser Ile Pro Ala Gly Arg Ile Glu Lys Ala Glu Val Met Tyr Ser
          130          135          140
Ala Pro Ala Arg Tyr Gln Val Arg Gly Ala Met Ile Asn Ile Cys Leu
145          150          155          160
Lys Gln Gly Asp Ser Gly Lys Ser Thr Leu Gln Gly Glu Phe Phe Ser
          165          170          175
Asp Tyr Arg Gln Lys His Tyr Glu Tyr Leu Thr Glu Arg Ala Ser Leu
          180          185          190
Leu Tyr Ser Gly His Lys Phe Ser Ala Asp Phe Leu Tyr Ser Tyr Ser
          195          200          205
His Gly Arg Asn Tyr Phe Leu Thr Asp Lys Glu Ala Leu His Ala Leu
          210          215          220
Ser Asp Gly Thr Ile His Pro Ile Ser Thr Asn Glu Ser Gln Arg Ser
225          230          235          240
Arg Ser Asn Arg His Asn Leu Arg Leu Ala Gly Asp Tyr Val Phe Ala
          245          250          255
Ala Asn His Gln Leu Ser Val Thr Tyr Asn Ala Gln Phe Val Asn Gly
          260          265          270
Phe Asn Leu Ser Thr Val Asp Gly Thr Gln Ile Ser Asn Ala Arg Thr
          275          280          285
Arg Met Thr Asp Gln Leu His Asn Ala Arg Leu Asp Tyr His Met Pro
          290          295          300
Phe Gly Trp Lys Ala Gly Val Glu Tyr Thr Tyr Tyr His Ser Pro Ser
305          310          315          320
Ser Gln Leu Leu His Ser Arg Met Gly Ser Asp Glu Leu Asp Phe Arg
          325          330          335
Val Lys Asp Ser Gln Arg Ile Asn Arg Trp Lys Leu Phe Leu Ser Gly
          340          345          350
Glu His Asp Leu Gly Asn Gly Trp Gly Met Asn Tyr Gly Ala Val Tyr
          355          360          365
Thr Thr Ser Leu Asp Asn Ser His Gln Tyr Tyr His Asp Pro Glu Thr
          370          375          380
Asp Glu Ile Ile Ser Gly Asn Ser Asn Met Lys Ser Arg Arg Arg Glu
385          390          395          400
Gln Thr Leu Asn Phe Tyr Ala Gly Phe Asn Lys Ala Phe Gly Asp Lys
          405          410          415
Leu Ser Leu Asp Ala Ser Leu Ala Ala Glu Gln Phe His Thr Thr Val

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420	425	430
Trp Asn Glu Trp Ser Leu Tyr Pro Thr Phe Asn Ile Asn Tyr Ala Pro		
435	440	445
Ala Pro Gly Asn Val Trp Gln Leu Ser Leu Ser Ser Asp Lys Ser Tyr		
450	455	460
Pro Asp Tyr Trp Ala Thr Gln Asp Ala Val Ser Tyr Met Gly Gly Gly		
465	470	475
Tyr Ser Glu Ile His Gly Asn Pro Tyr Leu Lys Pro Glu Ile Asn Tyr		
485	490	495
Gln Leu Gln Leu Thr Tyr Val Leu Asn Ser Lys Tyr Met Phe Asn Ala		
500	505	510
Trp Tyr Ser His Thr Lys Asp Asn Ala Thr Gln Thr Leu Tyr Gln Ser		
515	520	525
Pro Glu Arg Leu Val Glu Ile Tyr Lys Tyr Phe Asn Phe Asp Phe Glu		
530	535	540
Gln Gln Ala Gly Val Gln Ala Val Val Pro Phe Ala Ile Gly Arg Trp		
545	550	555
Leu Lys Ser Arg Phe Thr Leu Thr Gly Val Tyr Asp Arg Gln Lys Asp		
565	570	575
Ser Asp Phe Trp Asp Ile Pro Phe Asp Arg Lys Ala Tyr Tyr Ala Met		
580	585	590
Leu Asn Met Asn His Thr Val Thr Leu Phe Ser His Pro Asp Ile Lys		
595	600	605
Leu Ile Val Ser Gly Met Ile Arg Ser Lys Ala Ile Gln Gly Ile Tyr		
610	615	620
Asp Leu Pro Ala Ser Gly Asn Leu Asp Ile Ala Leu Arg Tyr Gly Phe		
625	630	635
Ala Asn Gly Lys Ala Leu Leu Thr Leu Arg Cys Asn Asp Leu Phe Glu		
645	650	655
Thr Gly Gln Ile Ser Pro Arg Ile Cys Tyr Val Met Gln Asn Val Thr		
660	665	670
Asn His Tyr Ser Ala Phe Arg Glu Phe Gly Val Ser Phe Thr Tyr Lys		
675	680	685
Phe Gly Gly Tyr Lys Glu Lys Lys Arg Glu Gly Val Asp Thr Ser Arg		
690	695	700
Phe Lys		
705		

<210> 8967

<211> 160

<212> PRT

<213> B.fragilis

<400> 8967

Lys Lys Lys Arg Ser Met Ser Val Ile Phe Lys Thr Val Lys Arg Pro		
1	5	10
Ser Asp Pro Arg Val Glu Asn Ser Pro Lys Arg Tyr Tyr Pro Gln Leu		
20	25	30
Ile Thr Leu Gly Arg Ser Val Asp Leu Lys Phe Ile Ala Gln Lys Ile		
35	40	45
Gln Asp Arg Ser Ser Leu Ser Val Gly Asp Ile Lys Ser Thr Ile Gln		
50	55	60
Asn Phe Val Glu Lys Leu Lys Glu Gln Leu Leu Glu Gly Lys Ala Val		
65	70	75
Asn Ile Glu Gly Leu Gly Val Phe Met Leu Ala Ala Lys Ser Lys Gly		
85	90	95
Ser Glu Lys Gln Glu Asp Ile Thr Ala Lys Ser Val Asp Ser Val Arg		
100	105	110
Ile Tyr Phe Gln Ala Asn Lys Glu Leu Lys Ile Thr Lys Thr Ala Thr		

	115		120		125
Arg	Ala Gly Glu Lys Leu	Asp Leu Ile Ser Leu	Asp Tyr Leu Lys		
	130	135	140		
Gly	Thr Ala Asp Gly Gly	Asn Gly Asp Ile Val	Asp Asp Pro Thr Ala		
145		150	155		160

<210> 8968

<211> 233

<212> PRT

<213> B.fragilis

<400> 8968

Trp	Ser	Ile	Leu	Lys	Asn	Ala	Arg	Thr	Met	Ser	Leu	Ser	Asn	Leu	Leu
1			5					10					15		
Ile	Ile	Phe	Ser	Ser	Ser	Phe	Met	Ala	Leu	Phe	Pro	Val	Val	Asn	Pro
		20				25						30			
Leu	Gly	Asn	Gly	Phe	Val	Val	Asn	Gly	Phe	Phe	Thr	Asp	Leu	Asp	Pro
		35				40					45				
Lys	Gln	Arg	Lys	Thr	Ala	Ile	Arg	Lys	Leu	Ile	Leu	Asn	Phe	Ile	Ile
	50				55						60				
Ile	Gly	Val	Gly	Thr	Leu	Val	Ile	Gly	His	Leu	Phe	Leu	Leu	Met	Phe
65				70					75					80	
Gly	Leu	Ala	Ile	Pro	Val	Ile	Gln	Leu	Gly	Gly	Gly	Ile	Leu	Ile	Cys
			85				90							95	
Lys	Thr	Ala	Met	Glu	Leu	Leu	Gly	Asp	Ser	Asn	Ser	Pro	Asp	Gln	Glu
		100					105						110		
Glu	Ser	Asn	Arg	Asn	Met	Asp	Ser	Leu	Lys	Trp	Lys	Asn	Ile	Glu	Gln
		115				120						125			
Lys	Ile	Phe	Tyr	Pro	Ile	Thr	Phe	Pro	Ile	Ser	Ile	Gly	Pro	Gly	Ser
	130				135						140				
Ile	Ser	Val	Ile	Phe	Thr	Leu	Met	Ala	Ser	Ala	Ser	Val	Lys	Gly	Lys
145					150			155						160	
Leu	Leu	Gln	Thr	Gly	Ile	Asn	Tyr	Phe	Val	Ile	Ala	Leu	Val	Ile	Val
			165				170							175	
Cys	Met	Ala	Ala	Ile	Leu	Tyr	Ile	Phe	Leu	Ser	Gln	Gly	Gln	Arg	Ile
		180					185					190			
Ile	Gln	Lys	Leu	Gly	Pro	Val	Gly	Asn	Gln	Ile	Ile	Asn	Lys	Leu	Val
	195				200							205			
Ala	Phe	Phe	Thr	Phe	Cys	Ile	Gly	Ile	Gln	Ile	Ser	Val	Thr	Gly	Ile
	210				215						220				
Ser	Gln	Ile	Phe	His	Leu	Ser	Ile	Leu							
225					230										

<210> 8969

<211> 536

<212> PRT

<213> B.fragilis

<400> 8969

Gln	Gln	Gln	Arg	Leu	Thr	Ile	Ile	Phe	Ala	Cys	Met	Lys	Leu	Pro	Ile
1			5					10					15		
Lys	His	Ile	Ala	Ile	Leu	Val	Ile	Ala	Ser	Leu	Met	Ala	Ile	Phe	Ala
		20				25						30			
Tyr	Gln	Ala	Tyr	Trp	Leu	Val	Ser	Met	Tyr	His	Thr	Met	Lys	Ser	Asp
	35				40						45				
Met	Glu	His	Ser	Ile	Ile	Glu	Ala	Met	Arg	Thr	Ser	Asp	Tyr	Asn	Glu
	50				55					60					
Met	Met	Leu	Arg	Ile	Glu	Arg	Met	Arg	Arg	Asp	Asp	Gln	Asp	His	Gly
65				70				75						80	

Glu Ile Ser Val Ser Ala Gly Tyr Asn Asp Glu Gly Gly Thr Leu Val
 85 90 95
 Arg Ser Ser Thr Met Val His Lys Glu Lys Ile Pro Gly Ser Thr Gly
 100 105 110
 Ile Gln Gln Asp Ser Ile Leu Lys Thr Glu Arg Lys Leu Asp Thr Leu
 115 120 125
 Ile Val Val Arg Asn Asp Gln Lys Glu Ile Lys Val Val Pro Gln Asp
 130 135 140
 Ser Thr Ala Gln Glu Val Lys Ala Ala Met Leu Gln Thr Lys Gly Gly
 145 150 155 160
 Leu Asp Ile Leu Leu Lys Asp Gln Asn Thr Met Leu Glu Leu Ala Thr
 165 170 175
 Tyr Phe Gln Arg Gly Leu His Ser Gly Leu Asp Val Ile Met Asp Pro
 180 185 190
 Asp Phe Gln Ser Tyr Asp Ser Leu Leu Thr Leu Ser Leu Gln Glu Arg
 195 200 205
 Gly Ile Ser Leu Pro Tyr Arg Ile Glu Tyr Leu His Phe Gly Asn Thr
 210 215 220
 Pro Asp Ser Ser Leu Leu Phe Thr Asp Thr Leu Gly Met Gly Gly Thr
 225 230 235 240
 Ala Asn Tyr Ile Pro Gly Pro Asp Ala His Thr Tyr Asp Tyr Thr Phe
 245 250 255
 Asp Ile His Ser His Ser Leu Tyr Arg Leu Arg Met Asp Ser Val Ala
 260 265 270
 Gly Val Ile Val His Gln Met Ala Gly Ile Leu Ile Thr Ser Phe Ile
 275 280 285
 Ile Leu Leu Ile Leu Gly Phe Ser Phe Trp Phe Leu Ile Arg Thr Leu
 290 295 300
 Leu Lys Gln Lys Thr Leu Glu Glu Met Lys Ser Asp Phe Thr Asn Asn
 305 310 315 320
 Ile Thr His Glu Leu Lys Thr Pro Ile Ala Val Ala Tyr Ala Ala Asn
 325 330 335
 Asp Ala Leu Leu Asn Phe Gly Gln Ala Asp Glu Lys Ala Lys Arg Asp
 340 345 350
 Lys Tyr Leu Ser Ile Ser Gln Glu Gln Leu Gln Arg Leu Ser Gly Leu
 355 360 365
 Val Glu Gln Ile Leu Thr Met Ser Met Glu Gln Arg Lys Thr Phe Arg
 370 375 380
 Leu Arg Pro Glu Glu Ile Thr Leu Ala Thr Leu Leu Glu Ser Leu Thr
 385 390 395 400
 Glu Gln His Lys Leu Lys Ala Gln Asn Pro Ile Asp Ile Asp Tyr Arg
 405 410 415
 Val Glu Pro Ala Asn Leu Thr Val Phe Ala Asp Arg Thr His Phe Ser
 420 425 430
 Asn Ile Leu Ser Asn Leu Ile Asp Asn Ala Val Lys Tyr Ser Pro Gly
 435 440 445
 Lys Ala Val Ile Arg Ile His Cys Arg Glu Thr Ala Asp Asn Gly Lys
 450 455 460
 Val Glu Ile Ser Val Ser Asp Glu Gly Thr Gly Ile Ala Gln Glu Lys
 465 470 475 480
 Gln Lys His Ile Phe Asp Lys Phe Tyr Arg Val Pro Thr Gly Asn Leu
 485 490 495
 His Asn Val Lys Gly Tyr Gly Leu Gly Leu Tyr Tyr Val Lys Thr Met
 500 505 510
 Ile Glu Lys His Gly Gly Thr Val Cys Val Lys Ser Glu Pro Gly His
 515 520 525
 Gly Ser Thr Phe Thr Ile Thr Leu
 530 535

<210> 8970
 <211> 135
 <212> PRT
 <213> B.fragilis

<400> 8970

Tyr	Pro	Gly	Arg	Glu	Arg	Val	His	Val	Trp	Asp	Phe	Gly	Arg	Asn	His
1				5					10					15	
Val	Tyr	Pro	Gly	Asn	Gly	Leu	Leu	Gly	Ile	Ser	Thr	Glu	Thr	Thr	Asn
			20					25					30		
Glu	Tyr	Val	Glu	Pro	Leu	Ile	Gln	Glu	Val	Tyr	Lys	Glu	Ile	Asp	Lys
		35					40					45			
Leu	Gln	Asn	Asp	Lys	Val	Thr	Pro	Glu	Glu	Leu	Ala	Met	Val	Arg	Asn
	50					55					60				
Tyr	Met	Leu	Gly	Glu	Met	Cys	Arg	Asn	Tyr	Glu	Ser	Pro	Phe	Ser	Leu
65					70					75					80
Ala	Asp	Ala	Trp	Met	Phe	Ile	Leu	Thr	Ser	Gly	Leu	Asp	Asp	Asp	Tyr
				85					90					95	
Phe	Ala	Arg	Ser	Leu	Gln	Ala	Val	Lys	Glu	Val	Thr	Pro	Glu	Glu	Ile
			100					105					110		
Arg	Glu	Leu	Ala	Gly	Arg	Tyr	Leu	Cys	Lys	Glu	Ser	Leu	Lys	Glu	Val
		115					120						125		
Ile	Ala	Gly	Lys	Lys	Leu	Thr									
		130				135									

<210> 8971
 <211> 107
 <212> PRT
 <213> B.fragilis

<400> 8971

Lys	Leu	Pro	Gly	Ser	Ala	Leu	Cys	Asn	Phe	Leu	Lys	Tyr	Thr	Ser	Met
1				5					10					15	
Phe	Ser	Ile	Ile	Ser	Ile	Met	Phe	Leu	Gly	Ile	Gly	Ile	Gly	Tyr	Leu
			20					25					30		
Leu	Arg	Asn	Leu	Lys	Phe	Leu	Glu	Lys	Val	Glu	Lys	Ser	Thr	Ser	Leu
		35					40					45			
Thr	Ile	Phe	Leu	Leu	Leu	Phe	Val	Leu	Gly	Leu	Ser	Ile	Gly	Ser	Asn
	50					55					60				
Ser	Leu	Ile	Val	Asn	Asn	Leu	Gly	Lys	Phe	Gly	Trp	Gln	Ala	Ile	Val
65					70					75					80
Leu	Ala	Thr	Ser	Ser	Ile	Leu	Gly	Ser	Met	Leu	Ala	Ser	Phe	Leu	Val
				85					90					95	
Leu	Arg	Leu	Phe	Phe	Lys	Lys	Gly	Gly	Lys	Ser					
			100					105							

<210> 8972
 <211> 570
 <212> PRT
 <213> B.fragilis

<400> 8972

Leu	Leu	Ile	Leu	Gln	Leu	His	Phe	Lys	Asn	Leu	Lys	Thr	Pro	Asp	Met
1				5					10					15	
Lys	Ser	Asp	Ile	Glu	Ile	Ala	Arg	Ser	Val	Glu	Leu	Lys	Lys	Ile	Lys
			20					25					30		
Gln	Val	Ala	Glu	Ser	Ile	Gly	Ile	Pro	Arg	Asp	Glu	Val	Glu	Asn	Tyr
		35				40						45			
Gly	Arg	Tyr	Ile	Ala	Lys	Ile	Pro	Glu	Tyr	Leu	Ile	Asp	Glu	Glu	Lys

50	55	60
Val Lys Lys Ser Asn Leu Ile Leu Val Thr Ala Ile Thr Ala Thr Lys		
65	70	75
Ala Gly Ile Gly Lys Thr Thr Val Ser Ile Gly Leu Ala Leu Gly Leu		80
	85	90
Asn Lys Ile Gly Lys Lys Ala Ile Val Ala Leu Arg Glu Pro Ser Leu		95
	100	105
Gly Pro Cys Phe Gly Met Lys Gly Gly Ala Ala Gly Gly Gly Tyr Ala		110
	115	120
Gln Val Leu Pro Met Glu Lys Ile Asn Leu His Phe Thr Gly Asp Phe		125
	130	135
His Ala Ile Thr Ser Ala His Asn Met Ile Ser Ala Leu Leu Asp Asn		140
	145	150
Tyr Leu Tyr Gln Asn Gln Ser Lys Gly Phe Gly Leu Lys Glu Ile Leu		155
	165	170
Trp Arg Arg Val Leu Asp Val Asn Asp Arg Ser Leu Arg Asn Ile Val		175
	180	185
Val Gly Leu Gly Pro Lys Thr Asn Gly Ile Thr Gln Glu Ser Gly Phe		190
	195	200
Asp Ile Thr Pro Ala Ser Glu Ile Met Ala Ile Leu Cys Leu Ser Lys		205
	210	215
Asp Val Asp Asp Leu Arg Arg Arg Ile Glu Asn Ile Leu Leu Gly Tyr		220
	225	230
Thr Tyr Asp Asn Lys Pro Phe Thr Val Lys Asp Leu Gly Val Ala Gly		235
	245	250
Ala Ile Thr Val Leu Leu Lys Asp Ala Ile His Pro Asn Leu Val Gln		255
	260	265
Thr Thr Glu Gly Thr Ala Ala Phe Val His Gly Gly Pro Phe Ala Asn		270
	275	280
Ile Ala His Gly Cys Asn Ser Ile Leu Ala Thr Lys Met Ala Met Thr		285
	290	295
Phe Gly Asp Tyr Val Ile Thr Glu Ala Gly Phe Gly Ala Asp Leu Gly		300
	305	310
Ala Glu Lys Phe Tyr Asn Ile Lys Cys Arg Lys Ser Gly Leu Gln Pro		315
	325	330
Arg Leu Thr Val Ile Val Ala Thr Ala Gln Gly Leu Lys Met His Gly		335
	340	345
Gly Val Ser Leu Asp Arg Ile Lys Glu Pro Asn Leu Glu Gly Leu Arg		350
	355	360
Glu Gly Leu Arg Asn Leu Asp Lys His Val Arg Asn Leu His Ser Phe		365
	370	375
Gly Gln Thr Val Ile Val Ala Phe Asn Lys Phe Ala Ser Asp Thr Asp		380
	385	390
Glu Glu Met Glu Leu Leu Arg Glu His Cys Glu Gln Leu Gly Val Gly		395
	405	410
Tyr Ala Ile Asn Asn Ala Phe Ser Glu Gly Gly Glu Gly Ala Val Asp		415
	420	425
Leu Ala Asn Leu Val Val Glu Thr Ile Glu Asn Lys Pro Ser Glu Pro		430
	435	440
Leu Gln Phe Thr Tyr Asn Asp Glu Asp Ser Val Gln Gln Lys Ile Glu		445
	450	455
Lys Val Ala Thr Asn Leu Tyr Gly Ala Ser Val Thr Tyr Ser Thr		460
	465	470
Leu Thr Arg Asn Lys Ile Lys Leu Ile Glu Glu Met Gly Ile Gly His		475
	485	490
Tyr Pro Val Cys Ile Ala Lys Thr Gln Tyr Ser Phe Ser Ala Asp Pro		495
	500	505
Lys Val Tyr Gly Ala Val Asp Asn Phe Glu Leu His Ile Lys Asp Ile		510
	515	520
		525

Val Ile Asn Asn Gly Ala Glu Met Ile Val Ala Ile Ala Gly Glu Ile
 530 535 540
 Met Arg Met Pro Gly Leu Pro Lys Glu Pro Gln Ala Leu His Ile Asp
 545 550 555 560
 Ile Val Asp Gly Asn Ile Glu Gly Leu Ser
 565 570

<210> 8973

<211> 1095

<212> PRT

<213> B.fragilis

<400> 8973

Leu Lys Pro Ile Leu Phe Met Thr Lys Lys Ser Asn Leu Ser Leu Arg
 1 5 10 15
 Phe Thr Arg Val Trp Glu Lys His Cys Leu Lys Thr Ala Ala Ala Thr
 20 25 30
 Leu Leu Leu Cys Cys Ala Leu Pro Val Gln Ala Lys Ala Asp Thr Tyr
 35 40 45
 Lys Thr Gln Glu Thr Ala Ser Ile Gln Gln Gln Thr Val Lys Thr Thr
 50 55 60
 Gly Val Ile Ile Asp Asn Thr Gly Glu Pro Leu Ile Gly Val Ser Val
 65 70 75 80
 Lys Val Gln Gly Thr Asn Thr Gly Thr Ile Thr Asp Leu Asp Gly Lys
 85 90 95
 Phe Ser Ile Gly Thr Pro Pro Lys Ala Leu Leu Glu Phe Ser Phe Ile
 100 105 110
 Gly Tyr Lys Thr Ile Ile Met Glu Val Thr Gly Lys Glu Leu His Ile
 115 120 125
 Thr Met Gln Glu Asp Ser Lys Gln Leu Asp Glu Val Val Val Val Gly
 130 135 140
 Tyr Gly Ser Gln Lys Lys Val Asn Val Thr Gly Ser Val Ser Met Val
 145 150 155 160
 Asn Ala Asp Val Leu Glu Ser Arg Pro Val Gln Asn Val Ser Gln Ala
 165 170 175
 Leu Gln Gly Val Ile Pro Gly Leu Asn Met Ser Val Gly Ser Ser Gly
 180 185 190
 Gly Thr Leu Asp Gly Lys Leu Asn Val Asn Ile Arg Gly Ala Gly Thr
 195 200 205
 Ile Ser Asp Gly Ser Ser Ser Pro Leu Val Leu Ile Asp Gly Ile
 210 215 220
 Glu Gly Asp Met Asn Thr Val Asn Pro Asn Asp Ile Glu Ser Val Ser
 225 230 235 240
 Val Leu Lys Asp Ala Ala Ser Ser Ser Ile Tyr Gly Ala Arg Ala Ala
 245 250 255
 Phe Gly Val Ile Leu Ile Thr Thr Lys Ser Gly Lys Ser Gly Lys Thr
 260 265 270
 Arg Val Asn Tyr Ser Gly Asn Val Arg Phe Ser Asp Ala Ile Gln Leu
 275 280 285
 Pro Asp Met Val Asp Ser Tyr Thr Phe Ala Gln Tyr Phe Asn Arg Ala
 290 295 300
 Ser Thr Asn Gly Gly Glu Ser Pro Thr Phe Asp Glu Lys Ala Leu Gln
 305 310 315 320
 Asn Ile Leu Asp Phe Gln Asn Gly Lys Phe Thr Asp Pro Ser Thr Pro
 325 330 335
 Glu Tyr Tyr Gly Val Glu Ala Gly Pro Asp Gly Lys Trp Lys Ser Tyr
 340 345 350
 Ala Gly Ser Phe Ala Asn Thr Asp Trp Phe Lys Glu Phe Tyr Lys Ser
 355 360 365

Trp Thr Pro Ser Thr Glu His Asn Leu Ser Ile Ser Gly Gly Thr Glu
 370 375 380
 Lys Leu Thr Tyr Met Ile Ser Gly Ser Phe Leu Asn Gln Asn Gly Leu
 385 390 395 400
 Ile Arg His Gly Glu Asp Asn Phe Asn Arg Tyr Thr Met Asn Ala Lys
 405 410 415
 Ile Ser Ala Lys Pro Ala Glu Trp Val Thr Leu Asn Tyr Thr Ser Lys
 420 425 430
 Trp Thr Arg Glu Asp Tyr Asp Arg Pro Thr Tyr Met Thr Gly Ala Phe
 435 440 445
 Phe His Asn Ile Ala Arg Arg Trp Pro Thr Cys Ala Pro Met Asp Pro
 450 455 460
 Asn Gly His Tyr Met Pro Asn Met Glu Ile Ile Gln Leu Glu Glu Gly
 465 470 475 480
 Gly Val Gln Thr Ser Gln Arg Asn Trp Tyr Thr Asn Gln Leu Gln Ala
 485 490 495
 Ile Phe Glu Pro Val Lys Asp Trp Arg Ile Val Val Glu Gly Ser Met
 500 505 510
 Arg Thr Tyr Thr Arg Lys Gln His Trp Ala Val Leu Pro Ile Tyr Gly
 515 520 525
 Tyr Asp Val Asn Asn Lys Pro Tyr Leu Leu Ser Trp Asn Gly Gly Ala
 530 535 540
 Ala Gly Tyr Ser Glu Val Gln Asp Glu Arg Glu Asp Glu Asp Tyr Phe
 545 550 555 560
 Ser Gly Asn Ile Tyr Ser Asp Tyr Ala Lys Thr Ile Gly Asn His Tyr
 565 570 575
 Phe Lys Val Met Gly Gly Phe Asn Ala Glu Leu Phe Arg Pro Ser Gly
 580 585 590
 Met Thr Gly Phe Gly Thr Asp Leu Ile Ser Ser Asn Val Pro Ser Leu
 595 600 605
 Gly Leu Thr Gln Asp Asn Gln Lys Ala Ser Ala Trp Ala Arg Glu Arg
 610 615 620
 Ala Ile Ala Gly Phe Phe Gly Arg Val Asn Tyr Asn Tyr Lys Glu Arg
 625 630 635 640
 Tyr Met Leu Glu Ala Asn Leu Arg Tyr Asp Gly Ser Ser Arg Phe Val
 645 650 655
 Gly Asp Lys Arg Trp Gly Leu Phe Pro Ser Phe Ser Ala Gly Trp Asn
 660 665 670
 Ile Ala Arg Glu Asp Phe Phe Arg Pro Leu Thr Gly Val Ile Gly Thr
 675 680 685
 Leu Lys Leu Arg Gly Ser Trp Gly Gln Leu Gly Asn Asn Asn Thr Asp
 690 695 700
 Lys Ala Asn Ala Trp Tyr Pro Phe Tyr Gln Asn Met Ile Thr Gly Ser
 705 710 715 720
 Ala Asn Ser Gly Trp Leu Ile Asp Ser Lys Lys Gln Asn Thr Ala Gln
 725 730 735
 Leu Pro Gly Ile Val Asn Ser Leu Met Thr Trp Glu Thr Ile Glu Ser
 740 745 750
 Trp Asp Ile Gly Leu Asp Phe Gly Leu Leu Asp Asn Arg Leu Thr Gly
 755 760 765
 Ser Val Gly Tyr Tyr Asn Arg Tyr Thr Tyr Asp Met Ile Gly Pro Ala
 770 775 780
 Pro Ile Leu Pro Pro Val Leu Gly Ala Leu Pro Pro Gln Val Asn Asn
 785 790 795 800
 Cys Asp Met Lys Ser Tyr Gly Trp Glu Leu Glu Leu Ser Trp Arg Asp
 805 810 815
 Arg Ile Ser Glu Phe Asp Tyr Ser Ala Arg Phe Val Leu Ser Asp Gly
 820 825 830
 Lys Arg Lys Ile Leu Arg Tyr Pro Asn Pro Thr Asn Ser Leu Ser Ser

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      835                      840                      845
Asp Val Tyr Tyr Asn Gly Gln Ile Leu Gly Asp Ile Trp Gly Tyr Lys
  850                      855                      860
Thr Val Gly Ile Ala Gln Thr Gln Glu Glu Met Asn Ala His Leu Ala
  865                      870                      875                      880
Asn Gly Gly Thr Pro Asn Trp Gly Thr Asn Trp Gly Ala Gly Asp Val
      885                      890                      895
Met Tyr Ala Asn Leu Asp Gly Lys Glu Gly Val Asn Asn Gly Ser Asn
      900                      905                      910
Thr Leu Glu Asp His Gly Asp Leu Thr Ile Ile Gly Asn Asn Thr Pro
      915                      920                      925
Arg Tyr Asn Phe Gly Leu Thr Leu Thr Gly Ala Trp Lys Gly Phe Asp
      930                      935                      940
Phe Ser Val Phe Leu Gln Gly Val Met Lys Arg Asp Tyr Trp Leu Asp
  945                      950                      955                      960
Gly Pro Tyr Phe Trp Gly Ala Asn Gly Gly Leu Trp Gln Ser Thr Ala
      965                      970                      975
Phe Lys Glu His Met Asp Tyr Trp Arg Pro Glu Gly Asp Pro Leu Gly
      980                      985                      990
Ala Asn Thr Asn Ala Tyr Tyr Pro Lys Pro Tyr Phe Asn Thr Asp Lys
      995                      1000                      1005
Asn Gln Lys Val Gln Ser Gly Tyr Leu Gln Asn Ala Ala Tyr Cys Arg
  1010                      1015                      1020
Leu Lys Asn Ala Gln Ile Gly Tyr Thr Leu Pro Lys Ile Trp Thr Arg
  1025                      1030                      1035                      1040
Lys Ala Ala Met Glu Ser Val Arg Val Tyr Val Ser Gly Asp Asn Leu
      1045                      1050                      1055
Val Thr Phe Ser Gly Ile Ser Gly Val Phe Asp Pro Glu Leu Leu Gly
      1060                      1065                      1070
Ser Asp Trp Gly Asp Gly Lys Leu Tyr Pro Leu Gln Arg Thr Ile Ser
      1075                      1080                      1085
Ile Gly Leu Asn Val Asn Phe
  1090                      1095

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<210> 8974

<211> 74

<212> PRT

<213> B.fragilis

<400> 8974

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Leu Leu Thr Ile Ile Met Val Ser Phe Arg Val Ser Pro Leu Asp Glu
  1          5          10          15
Leu Val Ala Leu Gly Ser Glu Asn Pro Ile Thr Arg Ala Pro Ser Arg
      20          25          30
Leu Ala Ala Val Ser Lys Leu Ser Arg Val Arg Val Glu Gly Ser Lys
      35          40          45
Asn Arg Val Ala Thr Thr Leu Pro Ser Asn Asn Arg Arg Leu Gly Phe
      50          55          60
Phe Ser Asn Cys Phe Ala Ile Ser Ser Ile
  65          70

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<210> 8975

<211> 407

<212> PRT

<213> B.fragilis

<400> 8975

```

Lys Val Asn Ile Lys Ile Cys Gln Lys Lys Val Ala Leu Val Tyr Lys
  1          5          10          15

```

Leu Tyr Ile Cys Gln Met Lys Thr Thr Arg Tyr Ile Tyr Thr Ala Leu
 20 25 30
 Ile Leu Ala Ala Leu Ser Gln Gly Asn Ala Val Ala Gln Asn Lys Gly
 35 40 45
 Gly Phe Phe Ser Lys Val Arg Asp Thr Phe Ser Thr Glu Ile Lys Ile
 50 55 60
 Gly Asn Tyr Thr Phe Lys Asp Gly Ser Val Tyr Thr Gly Glu Met Lys
 65 70 75 80
 Gly Arg Lys Pro Asn Gly Lys Gly Lys Thr Ile Phe Lys Asn Gly Asp
 85 90 95
 Val Tyr Glu Gly Glu Tyr Val Lys Gly Lys Arg Glu Gly Phe Gly Val
 100 105 110
 Tyr Thr Phe Pro Asp Gly Glu Arg Tyr Glu Gly Gln Trp Tyr Gln Asp
 115 120 125
 Gln Gln His Gly Asn Gly Ile Tyr Tyr Phe Met Asn Asn Asn Arg Tyr
 130 135 140
 Asp Gly Met Trp Phe Gln Asp Tyr Gln His Gly Pro Gly Thr Met Tyr
 145 150 155 160
 Tyr His Asn Gly Asp Ile Tyr Val Gly Asp Trp Val Asn Asp Lys Arg
 165 170 175
 Glu Gly Lys Gly Thr Tyr Thr Trp Arg Asp Gly Ser Lys Tyr Val Gly
 180 185 190
 Asp Trp Lys Asn Asp Lys Lys Asp Gly Lys Gly Val Leu Val Trp Asn
 195 200 205
 Asp Gly Cys Lys Tyr Asp Gly Asp Trp Lys Asn Asp Val Arg Glu Gly
 210 215 220
 Lys Gly Thr Phe Glu Tyr Thr Asn Gly Glu Lys Tyr Val Gly Asp Trp
 225 230 235 240
 Lys Asp Asp Leu Gln His Gly Lys Gly Ile Phe Phe Leu Gly Gly Asp
 245 250 255
 Arg Tyr Glu Gly Ser Tyr Leu Gln Gly Glu Arg Thr Gly Pro Gly Ile
 260 265 270
 Tyr Tyr His Ala Asn Gly Asp Lys Tyr Val Gly Asn Phe Lys Asp Gly
 275 280 285
 Met Gln Asp Gly Glu Gly Thr Phe Thr Trp Ala Asn Gly Ala Val Tyr
 290 295 300
 Glu Gly Glu Trp Lys Asp Asn Lys Arg Asn Gly His Gly Ile Tyr Lys
 305 310 315 320
 Trp Ser Asn Gly Asp Val Tyr Glu Gly Glu Trp Lys Asn Asn Gln Pro
 325 330 335
 Asn Gly Lys Gly Thr Leu Thr Leu Thr Asn Gly Thr Lys Tyr Lys Gly
 340 345 350
 Gly Phe Val Asn Gly Met Gln Glu Gly Asn Gly Val Glu Glu Asp Lys
 355 360 365
 Asn Gly Asn Arg Tyr Glu Gly Phe Phe Lys Gln Gly Lys Lys Asn Gly
 370 375 380
 Pro Phe Val Glu Thr Asp Lys Asn Gly Lys Val Ile Arg Lys Gly Thr
 385 390 395 400
 Tyr Lys Phe Gly Arg Leu Glu
 405

<210> 8976

<211> 112

<212> PRT

<213> B.fragilis

<400> 8976

Leu Arg Ile Met Glu Asn Gln Glu Thr Lys Ile Ser Asn Val Thr Thr
 1 5 10 15

```

Ser Met Lys Val Glu Lys Glu Ile Asn Gly Phe Lys Val Ser Gly Thr
      20                      25                      30
Val Glu Val Tyr Asn Asp Ser Lys Arg Ile Lys Arg Ile Asp Ala Ser
      35                      40                      45
Val Gln Lys Thr Asp Ser Lys Ala Met Ala Pro Phe Lys Tyr Ser Phe
      50                      55                      60
Thr Val Thr Arg Gly Leu Asn Asp Met Val Asn Pro Ser Glu Glu Asn
      65                      70                      75                      80
Glu Pro Glu Arg Asp Gln Ala Leu Thr Ala Gly Ile Glu Phe Glu Lys
      85                      90                      95
Ala Val Glu Gln Ala Val Ser Gly Met Ile Phe Asn Thr Ile Val Glu
      100                      105                      110

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<210> 8977

<211> 154

<212> PRT

<213> B.fragilis

<400> 8977

```

Asp Thr Gln Met Lys Tyr Leu Arg Tyr Thr Cys His Gly Asn Leu Tyr
1      5                      10                      15
Ala Asp Ala Glu Cys Lys Lys Gly Asn Glu Leu Val Asn Asp Leu Ile
      20                      25                      30
Pro Tyr Arg Pro Glu Phe Leu Asn Ser Leu Pro Leu Gly Lys Lys
      35                      40                      45
Asp Ile Lys Tyr Gly Cys His Thr Asn Tyr Asn Lys Cys Asp His Lys
      50                      55                      60
Ile Ile Asp Ser Gly Leu Gln Gln Phe Thr Phe Asp Ala Gly Arg Ser
      65                      70                      75                      80
His Gln Ser Lys Tyr Asn Gly Tyr Thr Ala Arg Thr Asp Ala Asp Gly
      85                      90                      95
Lys Arg Asp Gly Ile Lys Tyr Leu Leu Phe Tyr Ile Leu Pro Phe Glu
      100                      105                      110
Ala Ile His Val Pro Val Arg Phe Phe Leu Ile Arg Arg Val Arg Ile
      115                      120                      125
Ala Glu Gln Leu His Gly Arg Phe Thr Asp Lys Tyr Pro Thr Ala Gln
      130                      135                      140
Leu Asn Asp Arg Asp Gly Gln Thr Glu His
      145                      150

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<210> 8978

<211> 390

<212> PRT

<213> B.fragilis

<400> 8978

```

Lys Thr Lys Met Ile Ile Arg Ile Val Gln Asn Ile Gln Arg Ile Asn
1      5                      10                      15
Lys Glu Gly Asn Ala Pro Leu Tyr Ile Ser Phe Tyr Leu Gly Lys Glu
      20                      25                      30
Lys Val Val Ile Pro Cys Lys Leu Ser Val Pro Thr Thr Lys Phe Asp
      35                      40                      45
Ser Lys Thr Gly Met Leu Arg Gly Thr Asn Lys Glu Ala Lys Asp Ile
      50                      55                      60
Asn Leu Ile Ile Glu Arg Leu Lys Ala Lys Val Asn Asp Ile Leu Val
      65                      70                      75                      80
Lys Tyr Arg Leu Lys Asn Leu Thr Leu Asn Lys Glu Ala Phe Met Arg
      85                      90                      95
Glu Tyr Asn Asn Pro Ser Asp Phe Lys Ser Phe His Asp Phe Val Ala

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```
<210> 8979
<211> 266
<212> PRT
<213> B.fragilis
```

<400> 8979															
Ile	His	Arg	Met	Met	Asn	Asn	Arg	Ile	Tyr	Cys	Thr	Phe	Ile	Leu	Ser
1				5					10					15	
Ile	Ile	Ala	Val	Met	Val	Cys	Ala	Gln	Thr	Glu	Gln	Pro	Lys	Asp	Ser
			20					25					30		
Ile	Lys	Arg	Gln	Arg	Glu	Thr	Val	Pro	Glu	Ile	Arg	Gln	Glu	Leu	His
		35					40					45			
Ile	Asn	Asp	Arg	Asn	Ile	Gln	Thr	Asp	Gly	Thr	Leu	Pro	Asp	Asn	Thr
	50					55					60				
Arg	Gln	Ala	Ala	Ala	Gly	Asp	Ser	Met	Thr	Phe	Arg	Ile	Pro	Tyr	Pro
65					70					75				80	
Glu	Ser	Ile	Pro	Ser	Gly	Trp	Ile	Val	Pro	Gln	Leu	Gly	Thr	Tyr	Ser
				85					90					95	
Thr	Pro	Phe	Ile	Trp	Asp	Tyr	Asp	Arg	Tyr	Tyr	Asn	Phe	Asn	Leu	Ser
			100					105					110		
Pro	Asn	Ser	Asn	Leu	Ser	Thr	Phe	Ser	Asn	Tyr	Asn	Thr	Tyr	Leu	Ser

```
<210> 8980
<211> 585
<212> PRT
<213> B.fragilis
```

1	5					10					15				
Leu	Phe	Leu	Gly	Cys	Ala	Ser	Leu	Gln	Ala	Gln	Tyr	Lys	Trp	Ala	Asp
			20					25					30		
Pro	Leu	Lys	Gln	Asp	Phe	His	Thr	Val	Arg	Gly	Gln	Ala	Trp	Gln	Asp
		35					40					45			
Glu	Leu	Lys	Asp	Ser	Tyr	Ala	Arg	Leu	Pro	Gln	Arg	Ala	Glu	Asp	Lys
	50					55				60					
Val	Arg	Lys	Pro	Leu	Trp	Asp	Leu	Ser	Arg	Gln	Ser	Ala	Gly	Leu	Ser
65					70				75					80	
Val	Ala	Phe	Arg	Ser	Asn	Ala	Ser	Glu	Ile	Lys	Val	Arg	Tyr	Val	Val
				85					90					95	
Lys	Gly	Gly	Leu	Ser	Met	Pro	His	Met	Pro	Ala	Thr	Gly	Val	Ser	Gly
			100					105					110		
Ile	Asp	Leu	Tyr	Ala	Thr	Asp	Asn	Gly	Gln	Glu	Arg		Trp	Cys	Ala
		115					120				125				
Gly	Asn	Tyr	Ser	Met	Gly	Asp	Thr	Ile	Val	Tyr	Asn	Phe	Arg	Gly	Leu
	130					135					140				
Ser	Tyr	Ala	Ala	Lys	Ser	Gly	Asn	Gly	Phe	Glu	Tyr	Gln	Leu	Phe	Leu
145					150					155					160
Pro	Leu	Tyr	Asn	Ser	Val	Ser	Trp	Met	Glu	Ile	Gly	Val	Pro	Ala	Asp
				165					170					175	
Ala	Ser	Phe	Arg	Phe	Leu	Pro	Val	Ser	Gln	Glu	Lys	Pro	Leu	Val	Ile
			180					185					190		
Tyr	Gly	Thr	Ser	Ile	Ala	Gln	Gly	Ala	Cys	Ala	Ser	Arg	Pro	Gly	Met
		195					200					205			
Ala	Trp	Gly	Asn	Ile	Leu	Asn	Arg	Lys	Leu	Gly	His	Pro	Val	Ile	Asn
	210					215					220				
Leu	Gly	Phe	Ser	Gly	Asn	Gly	Lys	Leu	Glu	Glu	Ala	Leu	Phe	Asp	Leu
225					230					235					240
Leu	Ser	Glu	Ile	Asp	Ala	Arg	Leu	Tyr	Ile	Ile	Asp	Cys	Met	Pro	Asn
				245					250					255	
Leu	Ala	Gly	Lys	Glu	Ala	Ser	Ala	Val	Val	Tyr	Gln	Arg	Thr	Leu	Glu

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      260      265      270
Gly Val Lys Lys Leu Arg Glu Lys Ser Arg Ala Pro Ile Leu Leu Val
      275      280      285
Glu His Asp Gly Tyr Ser Asn Glu Phe Ser Ser Glu Ser Ala Glu Glu
      290      295      300
Ser Tyr Arg Val Ala Asn Ala Glu Leu Arg Lys Ala Tyr Glu Thr Leu
      305      310      315      320
Gln Lys Glu Gln Val Pro Thr Val Tyr Tyr Leu Thr Lys Glu Glu Ile
      325      330      335
Gly Met Pro Met Asp Ala Met Val Asp Gly Val His Ser Thr Asp Leu
      340      345      350
Gly Met Gln Gln Tyr Ala Asp Ser Tyr Arg Lys Lys Ile Gly Glu Ile
      355      360      365
Leu His Glu Glu Ser Glu Gly Pro Thr Ser Cys Ile Pro Cys Lys Gln
      370      375      380
Gln Arg Asp Pro Tyr Asp Trp Tyr Gly Arg His Glu Glu Ile Leu Lys
      385      390      395      400
Leu Asn Lys Gln Ser Ala Pro Glu Val Val Met Ile Gly Asn Ser Ile
      405      410      415
Thr His Phe Trp Gly Gly Glu Pro Ile Ala His Asn Gln Phe Gly Thr
      420      425      430
Glu Ser Trp Asp Lys Leu Phe Lys Gly Lys Arg Val Arg Asn Leu Gly
      435      440      445
Phe Gly Trp Asp Lys Thr Glu Asn Val Leu Trp Arg Ile Tyr His Gly
      450      455      460
Glu Leu Asp Gly Phe Gln Ala Gln Asn Ile Phe Leu Leu Ile Gly Thr
      465      470      475      480
Asn Asn Leu Leu Phe Asn Thr Asp Asp Glu Val Ile Glu Gly Ile Cys
      485      490      495
Arg Val Val Lys Ala Ile Arg Glu Arg Gln Pro Arg Thr Lys Leu Cys
      500      505      510
Val Met Gly Ile Leu Pro Arg Lys Glu Met Glu Thr Arg Ile Ala Gln
      515      520      525
Ile Asp Ala Ala Leu Gln Glu Arg Leu Asn Asp Lys Asp Cys Thr Phe
      530      535      540
Ile Asn Leu Ala Pro Gln Leu Thr His Lys Asp Gly Thr Ile Asp His
      545      550      555      560
Ser Leu Phe Arg Asp Gly Leu His Pro Asn Ala Glu Gly Tyr Lys Arg
      565      570      575
Ile Ala Lys Val Leu Lys Gly Tyr Leu
      580      585

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<210> 8981

<211> 79

<212> PRT

<213> B.fragilis

<400> 8981

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Arg Phe Tyr Leu Phe Ser Leu Ser Phe Tyr Leu Gly Gly Tyr Thr Thr
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Phe Phe Ser Asp Asn Lys Tyr Thr Phe Gln Thr Ala Thr Ile Cys Asp
20      25      30
Phe Lys Asn Val Phe Ile Asn Lys Lys Cys Leu Leu Lys Gln Ser Leu
35      40      45
Lys Lys Lys Ala Leu Ile Met Gln Arg Thr Val Ile Lys Gly Ile Val
50      55      60
Arg Phe Asp Arg Arg Asn Lys Ser Tyr Arg Leu Leu Val Tyr Arg
65      70      75

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<400> 8982																
Thr	Ser	Gly	Val	Pro	Ala	Trp	Leu	Val	Ile	Ser	Cys	Ser	Gly	Val	Leu	
1				5					10					15		
Val	Ala	Ile	Val	Thr	Ala	Tyr	Cys	Gly	Pro	Ile	Met	Phe	Ile	Gly	Leu	
			20					25					30			
Ala	Val	Pro	His	Leu	Cys	Arg	Ala	Ile	Phe	His	Thr	Ser	Asp	His	Arg	
			35				40					45				
Ile	Leu	Met	Pro	Ala	Thr	Leu	Leu	Ala	Gly	Ala	Ser	Leu	Ala	Leu	Val	
	50					55					60					
Cys	Asn	Leu	Val	Ala	Arg	Met	Pro	Gly	Phe	Glu	Gly	Ala	Leu	Pro	Val	
65				70						75					80	
Asn	Ser	Val	Thr	Ala	Leu	Val	Gly	Ala	Pro	Val	Val	Ala	Ser	Val	Leu	
				85					90					95		
Phe	Arg	Lys	Arg	Lys	Ser	Glu	Leu	Ser	Glu							
			100					105								

<400> 8983																
Ile	Lys	Ile	Val	Phe	Asn	Ile	Ile	Asn	Asn	Tyr	Ser	Met	Lys	Lys	Asn	
1				5					10					15		
Lys	Ile	Leu	Ile	Ile	Ile	Pro	Ser	Arg	Phe	Ala	Ser	Thr	Arg	Leu	Pro	
			20					25					30			
Glu	Lys	Pro	Leu	Val	Lys	Ile	Ala	Gly	Lys	Glu	Met	Val	Leu	Arg	Val	
		35					40					45				
Ala	Glu	Ile	Ala	Asn	Tyr	Val	Cys	Asn	Lys	Val	Glu	Gly	Cys	Asn	Tyr	
	50					55					60					
Ile	Val	Ala	Thr	Asp	His	Glu	Lys	Ile	Val	Asn	Phe	Cys	Lys	Glu	Asn	
65				70						75					80	
Asn	Ile	Ala	Val	Met	Met	Thr	Ser	Glu	Asn	Cys	Lys	Ser	Gly	Thr	Glu	
			85						90					95		
Arg	Cys	Trp	Asp	Val	Thr	Thr	Lys	Ile	Ala	Glu	Lys	Pro	Asp	Phe	Ile	
			100					105					110			
Val	Asn	Leu	Gln	Gly	Asp	Asn	Pro	Leu	Cys	Pro	Pro	Trp	Phe	Ile	Glu	
		115					120					125				
Gln	Leu	Ile	Glu	Ala	Trp	Lys	Asn	Asp	Lys	Glu	Gly	Gln	Val	Phe	Thr	
	130					135					140					
Pro	Ser	Leu	His	Leu	Ser	Trp	Glu	Glu	Tyr	Asp	Arg	Met	Lys	Glu	Ser	
145					150					155					160	
Lys	Lys	Ile	Thr	Pro	Tyr	Ser	Gly	Thr	Thr	Val	Glu	Val	Asp	Lys	Phe	
			165						170					175		
Gly	Tyr	Ala	Leu	Ala	Phe	Ser	Lys	Ala	Met	Ile	Pro	Val	Ile	Arg	Asn	
		180						185					190			
Glu	Glu	Lys	Val	Arg	Lys	Ile	Leu	Asp	Lys	Ser	Pro	Val	Arg	Arg	His	
		195					200					205				
Ile	Gly	Leu	Tyr	Ser	Tyr	Thr	Tyr	Asp	Ala	Leu	Lys	Lys	Tyr	Phe	Glu	
	210					215					220					
Val	Glu	Ala	Ser	Pro	Tyr	Glu	Leu	Pro	Glu	Gly	Leu	Glu	Gln	Met	Arg	
225					230					235					240	
Phe	Leu	His	Asn	Arg	Ile	Pro	Val	Lys	Met	Ile	Asp	Val	Asp	Tyr	Arg	
			245						250					255		

Asn	Arg	Lys	Ser	Met	Ser	Gly	Val	Asp	Ser	Pro	Glu	Asp	Ile	Glu	Arg
			260					265					270		
Ala	Glu	Lys	Ile	Ile	Ala	Glu	Phe	Gly	Glu	Phe	Asn	Leu	Ser	Pro	Glu
		275					280					285			

<210> 8984

<211> 704

<212> PRT

<213> B.fragilis

<400> 8984

Met	Leu	Thr	Ser	Asn	Phe	Thr	Arg	Gln	Ile	Met	Lys	Ile	Lys	Leu	Lys
1				5					10					15	
His	Ile	Tyr	Phe	Cys	Ser	Leu	Ile	Gly	Met	Gly	Gly	Leu	Ala	Leu	Thr
			20					25					30		
Ser	Cys	Asn	Asp	Phe	Leu	Asp	Arg	Ser	Pro	Ile	Ser	Asp	Ile	Thr	Pro
		35					40					45			
Glu	Asp	Tyr	Phe	Asn	Thr	Val	Asp	Gln	Val	Gly	Ser	Tyr	Val	Ile	Asn
	50				55						60				
Tyr	Tyr	Asp	Asp	Tyr	Leu	Glu	Asn	Ser	Asn	Thr	Lys	Met	Tyr	His	
65					70					75				80	
Gln	Arg	Ala	Trp	Asn	Ser	Gly	Val	Val	Arg	Asn	Asp	Ala	Asn	Thr	Asp
				85					90					95	
Asn	Leu	Leu	Ser	Asp	Asp	Gly	Asn	Leu	Asp	Tyr	Phe	Ala	Gly	Asn	Lys
			100					105					110		
Gln	Val	Pro	Glu	Gly	Lys	Asn	Ile	Gln	Glu	Pro	Leu	Asn	Arg	Ile	Arg
		115					120						125		
Val	Trp	Asn	Tyr	Leu	Phe	Glu	Lys	Val	Leu	Pro	Lys	Glu	Lys	Glu	Gly
	130					135					140				
Thr	Ile	Pro	Gly	Asp	Ala	Glu	Leu	Leu	Lys	Gln	Tyr	Ile	Gly	Glu	Ala
145					150					155					160
Tyr	Phe	Phe	Arg	Ala	Leu	Ala	Tyr	Tyr	Asn	Ala	Leu	Val	Arg	Phe	Gly
				165					170					175	
Asp	Tyr	Pro	Ile	Ile	Thr	Glu	Val	Leu	Pro	Asp	Asp	Ser	Glu	Thr	Leu
			180					185					190		
Ile	Lys	Lys	Ser	Gln	Arg	Ala	Pro	Arg	Asn	Glu	Val	Ala	Arg	Phe	Ile
		195					200					205			
Leu	Lys	Asp	Leu	Asp	Glu	Ala	Val	Ser	Arg	Leu	Lys	Glu	Arg	Gly	Phe
	210					215					220				
Gln	Asn	Asn	Gln	Arg	Ile	Asn	Lys	Gln	Ala	Ala	Leu	Val	Leu	Lys	Ser
225					230					235					240
Arg	Val	Ala	Leu	Phe	Glu	Ala	Thr	Phe	Glu	Lys	Tyr	His	Gln	Gly	Thr
				245					250					255	
Gly	Arg	Val	Pro	Gly	Asp	Pro	Thr	Trp	Pro	Gly	Ala	Ala	Met	Ser	Tyr
			260					265					270		
Asn	Ser	Gly	Lys	Thr	Phe	Asp	Ile	Ala	Gly	Glu	Ile	Asn	Phe	Phe	Leu
		275					280						285		
Thr	Glu	Ala	Met	Gln	Ala	Ala	Val	Ala	Val	Ala	Asp	His	Val	Gln	Leu
	290					295					300				
Ala	Glu	Asn	Ser	His	Val	Met	Asn	Pro	Pro	Tyr	Asn	Thr	Leu	Tyr	Gly
305					310					315					320
Trp	Asn	Pro	Tyr	Phe	Glu	Met	Phe	Ser	Gln	Pro	Asp	Leu	Ser	Asn	Val
				325					330					335	
Glu	Glu	Val	Leu	Leu	Trp	Lys	Gln	Tyr	Asn	Leu	Ser	Leu	Thr	Val	Ser
			340					345					350		
His	Cys	Val	Gly	Ala	Arg	Leu	Lys	Asn	Gly	Asp	Arg	Thr	Gly	Leu	Thr
		355					360					365			
Arg	Ser	Leu	Ile	Lys	Thr	Phe	Leu	Met	Lys	Asp	Gly	Leu	Pro	Ile	Tyr
	370					375						380			

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Ala Ser Asn Ser Thr Ile Asp Asp Arg Thr Val Ser Asp Glu Lys Lys
 385 390 395 400
 Asp Arg Asp Glu Arg Leu Gln Leu Phe Val Trp Gly Glu Lys Asp Ala
 405 410 415
 Trp Met Thr Asp Glu Arg Ala Asp Thr Val Lys Asn Tyr Asn Lys Asp
 420 425 430
 Gln Ala Gly Asn Ser Val Thr Asn Pro Val Pro Val Pro Trp Val Lys
 435 440 445
 Ser Thr Val Ile Ser Asp Gln Glu Gln Thr Arg Asp Ile Thr Gly Tyr
 450 455 460
 Arg Ser Arg Lys Phe Tyr Pro Tyr Asp Asp Glu Gln Ser Lys Ser Asp
 465 470 475 480
 Glu Leu Leu Gly Thr Asn Ala Cys Pro Ile Phe Arg Ala Ser Glu Ala
 485 490 495
 Tyr Leu Asn Tyr Ile Glu Ala Cys Tyr Glu Lys Asn Gly Thr Leu Asp
 500 505 510
 Ser Lys Ala Gln Glu Tyr Trp Lys Ala Ile Arg Arg Arg Ala Gly Val
 515 520 525
 Asp Glu Asp Tyr Gln Lys Thr Ile Ala Arg Thr Asp Leu Gly Arg Glu
 530 535 540
 Asp Asp Leu Gly Val Tyr Ser Gly Asp Arg Met Val Asp Ala Thr Leu
 545 550 555 560
 Tyr Asn Ile Arg Arg Glu Arg Arg Cys Glu Phe Ile Ala Glu Gly Met
 565 570 575
 Arg Trp Asp Asp Leu Lys Arg Trp Arg Ser Trp Asp Arg Leu Phe Thr
 580 585 590
 Glu Pro Tyr Ile Val Glu Gly Ile Asn Phe Trp Asp Glu Ala Tyr Lys
 595 600 605
 Leu Tyr Thr Thr Val Asp Lys Asp Gly Asn Glu Lys Ser Ala Val Val
 610 615 620
 Ala Asp Gly Ser Thr Ser Ala Asn Met Ser Pro Lys Ser Asp Gly Lys
 625 630 635 640
 Tyr Val Arg Pro Leu Arg Arg Thr Gln Thr Asn Asn Gln Leu Tyr Asp
 645 650 655
 Gly Tyr Thr Trp Lys Lys Ala Tyr Tyr Leu Glu Pro Leu Gly Leu Gln
 660 665 670
 Asp Leu Gln Leu Ser Ala Thr Asn Pro Glu Asp Ile Asn Thr Ser Met
 675 680 685
 Met Tyr Gln Asn Pro Tyr Trp Pro Ala Gly Thr Gly Lys Ala Leu Glu
 690 695 700

<210> 8985

<211> 159

<212> PRT

<213> B.fragilis

<400> 8985

Ile Thr Asn Phe Leu Lys Gln Gln Pro Met Thr Leu Ile Lys Ser Ile
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 Ser Gly Ile Arg Gly Thr Ile Gly Gly Ala Gly Glu Gly Leu Asn
 20 25 30
 Pro Leu Asp Ile Val Lys Phe Thr Ser Ala Tyr Ala Thr Leu Ile Arg
 35 40 45
 Lys Thr Cys Lys Ser Lys Ser Asn Lys Ile Val Val Gly Arg Asp Ala
 50 55 60
 Arg Ile Ser Gly Glu Met Val Lys Asn Val Val Val Gly Thr Leu Met
 65 70 75 80
 Gly Met Gly Trp Asp Val Val Asp Ile Asp Leu Ala Ser Thr Pro Thr
 85 90 95

Thr Glu Leu Ala Val Thr Met Glu Arg Ala Cys Gly Gly Ile Ile Leu
 100 105 110
 Thr Ala Ser His Asn Pro Lys Gln Trp Asn Ala Leu Lys Met Val Asp
 115 120 125
 Glu His Gly Glu Phe Leu Asn Ala Ala Glu Gly Gln Glu Val Leu Arg
 130 135 140
 Ile Ala Ala Ala Glu Gly Val Asp Tyr Ala Asp Val Asp His Leu
 145 150 155

<210> 8986
 <211> 136
 <212> PRT
 <213> B.fragilis

<400> 8986
 Lys Ile Gly Tyr Leu Val Val Leu Val Gln Cys Phe Leu Lys Phe Thr
 1 5 10 15
 Asn Ile Val Glu Ile Gly Val Tyr Ile Leu Val Cys Thr Leu Met Ser
 20 25 30
 His Leu Arg Arg Tyr Asn Ile Val Ala Val Arg Phe Val Glu His Asp
 35 40 45
 Ile Lys Ala Asn Asp Thr Thr Cys Phe Asn Val Val Leu Pro Gly Phe
 50 55 60
 Glu Asn Tyr Pro Asn Tyr Tyr Thr Tyr Pro Asp Val Phe Arg Tyr Val
 65 70 75 80
 Asp Asn Gly Thr Ser Val Ala Gly Val Phe Thr Glu Gly Ser Met Tyr
 85 90 95
 Ala Lys Tyr Gly Thr Thr Asp Val Pro Pro Gly Trp Leu Leu Ala Leu
 100 105 110
 Lys Tyr Val Thr Asn Tyr Ala His Val Arg Met Ile Gly Leu His His
 115 120 125
 Gly Ala Gly Arg Ile Arg Ala Asn
 130 135

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 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 8987
 Ser Thr Val Ile His Ile Thr Glu Asn Val Arg Ile Ser Ile Val Ile
 1 5 10 15
 Arg Ile Ile Phe Glu Thr Gly Lys His His Ile Glu Ala Ser Gly Ile
 20 25 30
 Val Arg Leu Asp Val Val Leu Tyr Lys Ala Tyr Gly Tyr Asn Ile Val
 35 40 45
 Pro Ser Lys Met Gly His Gln Ser Ala Asn Gln Tyr Val Asn Pro Tyr
 50 55 60
 Phe Tyr Asp Ile Arg Lys Phe Gln Lys Ala Leu Asn
 65 70 75

<210> 8988
 <211> 219
 <212> PRT
 <213> B.fragilis

<400> 8988
 Lys Met Tyr Ser Ser Thr Lys Thr Val Ser Ala Phe Ser Val Leu Leu
 1 5 10 15

Pro Asp Gly Arg Thr Lys Trp Arg Trp Asp Thr Gly Arg Ser Met Gly
 20 25 30
 Val Glu Phe Met Ala Gln Lys Thr Ile Gly Lys Thr Thr Gly Trp Leu
 35 40 45
 Ala Tyr Thr Leu Ala Lys Ser Asp Arg Lys Phe Ala Thr Gly Gly Ile
 50 55 60
 Asn Asn Gly Glu Arg Phe Pro Tyr Lys Tyr Asp Arg Arg His Asn Ile
 65 70 75 80
 Asp Leu Thr Leu Asn His Arg Phe Asn Glu Arg Ile Asp Val Ser Ala
 85 90 95
 Ser Trp Ile Phe Thr Thr Gly Gly Thr Thr Thr Ile Pro Thr Glu Leu
 100 105 110
 Thr Gly Ile Ile Arg Pro Gly Asp Asn Asp Ser Ser Ile Glu Glu Gly
 115 120 125
 Asp Tyr Val Lys His Arg Asn Asn Tyr Arg Leu Pro Ala Thr His Arg
 130 135 140
 Leu Asn Val Gly Val Asn Phe Ser Lys Lys Thr Lys His Gly Met Arg
 145 150 155 160
 Ile Trp Asn Val Ser Ile Tyr Asn Val Tyr Asn Ala Met Asn Pro Thr
 165 170 175
 Leu Ile Tyr Arg Thr Tyr Lys Lys Thr Glu Tyr Thr Gln Gly Glu Gln
 180 185 190
 Ala Gln Gly Asn Arg Ile Pro Val Ile Arg Lys Phe Thr Leu Leu Pro
 195 200 205
 Cys Ile Pro Ser Phe Ser Tyr Thr Tyr Lys Phe
 210 215

<210> 8989
 <211> 360
 <212> PRT
 <213> B.fragilis

<400> 8989
 Val Gln Arg Phe Ile Val Phe Leu Pro Thr Gln Tyr Leu Tyr Lys Gln
 1 5 10 15
 Val Met Leu Thr Lys Val Ile Ala Gln Ala His Ile Asp His Phe Thr
 20 25 30
 Lys Trp Phe Glu Arg Ala Asp Lys Ile Val Ile Val Ser His Val Ser
 35 40 45
 Pro Asp Gly Asp Ala Ile Gly Ser Ser Leu Gly Leu Tyr His Phe Leu
 50 55 60
 Asp Ser Gln Asp Lys Ile Val Asn Val Ile Val Pro Asn Ala Phe Pro
 65 70 75 80
 Asp Phe Leu Lys Trp Met Pro Gly Ser Lys Asp Ile Leu Leu Tyr Asp
 85 90 95
 Arg Tyr Gln Glu Phe Ala Asp Lys Leu Ile Met Glu Ala Asp Val Ile
 100 105 110
 Cys Cys Leu Asp Phe Asn Ala Leu Lys Arg Ile Asp Glu Met Ser Asp
 115 120 125
 Ile Val Ala Ala Ser Pro Gly Arg Lys Ile Met Ile Asp His His Leu
 130 135 140
 Tyr Pro Glu Asp Phe Cys Arg Ile Thr Ile Ser His Ala Glu Ile Ser
 145 150 155 160
 Ser Thr Ser Glu Leu Val Phe Arg Leu Ile Cys Arg Met Gly Tyr Phe
 165 170 175
 Ser Asp Ile Ser Lys Glu Gly Ala Glu Cys Ile Tyr Thr Gly Met Met
 180 185 190
 Thr Asp Thr Gly Gly Phe Thr Tyr Asn Ser Asn Asn Arg Glu Ile Tyr
 195 200 205

Phe Ile Ile Ser Glu Leu Leu Ser Lys Gly Ile Asp Lys Asp Asp Ile
 210 215 220
 Tyr Arg Lys Val Tyr Asn Thr Tyr Ser Glu Ser Arg Leu Arg Leu Met
 225 230 235 240
 Gly Tyr Val Leu Ser Asn Met Lys Val Tyr Lys Asp Tyr Lys Ser Ala
 245 250 255
 Leu Ile Ser Leu Thr Lys Glu Glu Gln Gly Lys Phe Asp Tyr Ile Lys
 260 265 270
 Gly Asp Ser Glu Gly Phe Val Asn Ile Pro Leu Ser Ile Lys Asn Val
 275 280 285
 Cys Phe Ser Cys Phe Leu Arg Glu Asp Thr Glu Lys Lys Met Ile Lys
 290 295 300
 Ile Ser Leu Arg Ser Val Gly Lys Phe Pro Cys Asn Arg Leu Ala Ala
 305 310 315 320
 Glu Phe Phe Asn Gly Gly Gly His Leu Asn Ala Ser Gly Gly Glu Phe
 325 330 335
 Tyr Gly Thr Met Glu Glu Ala Val Lys Val Phe Glu Gln Ala Leu Glu
 340 345 350
 Lys Tyr Lys Pro Leu Leu Lys Glu
 355 360

<210> 8990

<211> 78

<212> PRT

<213> B.fragilis

<400> 8990

Arg Thr Leu Ser Asp Pro Tyr Gln Arg Thr Ser Arg Thr Ile Thr Lys
 1 5 10 15
 Cys Ala Phe Lys Ala Tyr Ser Leu Leu Phe Val Asp Tyr Thr Thr Val
 20 25 30
 Ala Glu Gln Asn Pro Glu Arg Asn Glu Asn Val Ile Ser Glu Leu Asp
 35 40 45
 Thr Ala Thr Glu Arg Val Lys Thr Ser Thr Glu Ala Leu Pro Tyr Ser
 50 55 60
 Ser Phe His Ile Ser Leu Val Ile Pro Ile Ile Arg Ser Ile
 65 70 75

<210> 8991

<211> 154

<212> PRT

<213> B.fragilis

<400> 8991

Arg Gln Phe Pro Phe Ile Leu Phe Leu Cys Ala Asn Asn Lys Ser Phe
 1 5 10 15
 Ala Phe Lys Thr Leu Val Ile Cys Ile Gln Arg Thr Ser Phe Asn Thr
 20 25 30
 Val Leu Lys Gln Ser Leu Phe Leu Ile Gly Ser Leu Ile Leu Gln Thr
 35 40 45
 Lys Asp Phe Ser Trp Leu Val Met Leu Thr Val Tyr Gly Val Asp Ser
 50 55 60
 Val Leu Thr Ile Ile His Arg Leu Leu Leu His Glu Asn Ile Gly Leu
 65 70 75 80
 Pro His Arg Lys His Leu Tyr Gln Ile Met Val Asn Glu Leu Arg Ile
 85 90 95
 Pro His Val Val Val Ser Leu Val Tyr Met Ile Val Gln Ile Val Ile
 100 105 110
 Ile Ile Gly Tyr Leu Tyr Cys Arg Gly Tyr Gly Asp Trp Tyr Leu Leu

115	120	125
Gly Cys Ile Leu Leu Leu Ser Gly Ile Tyr Ile Val Leu Met Arg Lys		
130	135	140
Tyr Phe His Leu His Leu Leu Pro Lys Arg		
145	150	

<210> 8992
 <211> 374
 <212> PRT
 <213> B.fragilis

<400> 8992
 Ile Leu Leu Leu Tyr Leu His Ile Leu Asn Phe Lys Ala Leu Phe Asn
 1 5 10 15
 Met Phe Asn Ser Phe Gly Asn Ile Phe Arg Leu Thr Ser Phe Gly Glu
 20 25 30
 Ser His Gly Lys Gly Ile Gly Gly Val Ile Asp Gly Phe Pro Ala Gly
 35 40 45
 Ile Val Ile Asp Glu Glu Phe Val Gln Gln Glu Leu Asn Arg Arg Arg
 50 55 60
 Pro Gly Gln Ser Val Ile Thr Thr Ser Arg Lys Glu Ala Asp Lys Val
 65 70 75 80
 Glu Phe Leu Ser Gly Ile Phe Glu Gly Lys Ser Thr Gly Cys Pro Ile
 85 90 95
 Gly Phe Ile Val Trp Asn Glu Asn Gln His Ser Asn Asp Tyr Asn Asn
 100 105 110
 Leu Glu Lys Val Tyr Arg Pro Ser His Ala Asp Tyr Thr Tyr Thr Val
 115 120 125
 Lys Tyr Gly Ile Arg Asp His Arg Gly Gly Gly Arg Ser Ser Ala Arg
 130 135 140
 Glu Thr Ile Ser Arg Val Val Gly Gly Ala Leu Ala Lys Leu Ala Leu
 145 150 155 160
 Arg Gln Leu Gly Ile His Ile Thr Ala Tyr Thr Ser Gln Val Gly Pro
 165 170 175
 Ile Lys Leu Glu Gly Asn Tyr Thr Asp Tyr Asp Leu Asp Leu Ile Glu
 180 185 190
 Thr Asn Pro Val Arg Cys Pro Asp Pro Glu Lys Ala Lys Glu Met Gln
 195 200 205
 Asp Leu Ile Tyr Lys Ile Lys Gly Glu Gly Asp Thr Ile Gly Gly Val
 210 215 220
 Leu Thr Cys Val Ile Lys Gly Cys Pro Ile Gly Leu Gly Gln Pro Val
 225 230 235 240
 Tyr Gly Lys Leu His Ala Ala Leu Gly Asn Ala Met Leu Ser Ile Asn
 245 250 255
 Ala Ala Lys Ala Phe Glu Tyr Gly Asp Gly Phe Lys Gly Leu Lys Gln
 260 265 270
 Lys Gly Ser Glu Gln Asn Asp Val Phe Tyr Asn Asn Asn Gly Arg Ile
 275 280 285
 Glu Thr Arg Thr Asn His Ser Gly Gly Ile Gln Gly Gly Ile Ser Asn
 290 295 300
 Gly Gln Asp Ile Phe Phe Arg Val Ala Phe Lys Pro Val Ala Thr Val
 305 310 315 320
 Leu Met Glu Gln Glu Thr Val Asn Ile Asp Gly Ile Asp Thr Thr Leu
 325 330 335
 Lys Ala Arg Gly Arg His Asp Pro Cys Val Leu Pro Arg Ala Val Pro
 340 345 350
 Ile Val Glu Ala Met Ala Ala Met Thr Ile Leu Asp Tyr Tyr Leu Leu
 355 360 365
 Asp Arg Met Thr Gln Leu

370

<210> 8993

<211> 370

<212> PRT

<213> B.fragilis

<400> 8993

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Asn Gln Val Phe Phe Thr Leu Leu Ser Leu Phe Ser Val Ile Phe Ser
1      5      10      15
Ile Phe Val Arg Pro Thr Thr Gln Thr Ser Gly Met Gly Asp Asp Lys
20      25      30
Asn Lys Arg Ile Asp Phe Val Asp Leu Thr Lys Gly Val Cys Ile Ile
35      40      45
Leu Val Val Met Ala His Ile Gly Gly Ala Phe Glu Lys Leu Asp Tyr
50      55      60
His Ser Met Ile Ala Ser Phe Arg Met Pro Leu Tyr Phe Phe Ile Ser
65      70      75      80
Gly Ile Phe Phe Lys Ser Tyr Glu Gly Leu Phe Gly Phe Phe Ile Arg
85      90      95
Lys Ile Asn Lys Leu Ile Ile Pro Phe Leu Phe Phe Tyr Leu Ser Ala
100     105     110
Phe Phe Leu Lys Tyr Ile Val Trp Lys Ile Ala Pro Gly Val Phe Gln
115     120     125
Leu Pro Val Ser Trp Thr Glu Leu Leu Val Val Phe His Asp His Ala
130     135     140
Leu Ile Lys Phe Asn Pro Pro Ile Trp Phe Leu Leu Ala Leu Phe Asn
145     150     155     160
Cys Asn Ile Leu Phe Tyr Leu Val His Ser Leu Arg Asn Arg Arg Leu
165     170     175
Gly Leu Met Phe Ala Leu Thr Leu Leu Ile Gly Thr Ala Gly Phe Tyr
180     185     190
Met Gly Lys His Gln Ile Glu Leu Pro Leu Tyr Met Asp Val Ala Met
195     200     205
Ser Ala Leu Pro Phe Tyr Val Ala Gly Phe Trp Ile Arg Arg Tyr Asn
210     215     220
Phe Phe Leu Phe Pro His Arg Phe Asp Lys Leu Ile Pro Leu Cys Ile
225     230     235     240
Leu Ala Ala Leu Ala Val Met Tyr Phe Thr Ala Thr Phe Val Gly Met
245     250     255
Arg Thr Asn Asn Tyr Ala Gly Asn Ile Phe Gln Phe Trp Ala Ser Ala
260     265     270
Phe Ala Gly Ile Phe Met Ile Met Leu Phe Cys Lys Lys Phe Lys Lys
275     280     285
Leu Pro Val Ile Ser Tyr Met Gly Arg Tyr Ser Val Ile Thr Leu Gly
290     295     300
Ile His Ala Pro Leu Leu His Phe Glu Tyr Pro Val Val Ser Arg Phe
305     310     315     320
Ile His Asn Glu Trp Gly Gln Ala Ile Ala Leu Leu Leu Leu Thr Leu
325     330     335
Thr Val Cys Ile Ile Ala Thr Pro Ile Phe Leu Lys Leu Ile Pro Gln
340     345     350
Ala Val Ala Gln Lys Asp Phe Ile Lys Thr Lys Gln Ser Thr Gln Gln
355     360     365
Gly Ser
370

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<210> 8994

<211> 158

<213> B.fragilis

Arg	Thr	Arg	Pro	Gly	Glu	Lys	Asn	Phe	Tyr	Arg	Ile	Ile	Val	Glu	Gln
1				5					10					15	
Arg	Lys	Tyr	Trp	Lys	Tyr	Tyr	Trp	Glu	Gln	Asn	Asp	Gln	Thr	Cys	Trp
			20					25					30		
Ser	Ser	Ala	Met	Gln	Lys	Ser	Phe	Lys	Leu	Gln	Thr	Asn	Glu	Asp	Val
		35					40					45			
Val	Leu	Thr	Asp	Gly	Lys	Pro	Ser	Thr	Glu	Glu	Asp	Asp	Glu	Asn	Gly
	50					55					60				
Leu	Phe	Gly	Thr	Val	Asn	Asn	Lys	Tyr	Ala	Ile	Phe	Asp	Asp	Ser	Arg
65					70					75					80
Phe	Thr	Asp	Gly	Ser	Tyr	Thr	Met	Asn	Val	Tyr	Asn	Asp	Ile	Tyr	Gly
			85						90					95	
Trp	Gly	Phe	Trp	Gly	Gln	Glu	Tyr	Ile	Trp	Ile	Lys	Thr	Asp	Val	Ser
			100					105					110		
Ile	Pro	Ile	Leu	Ser	Ile	Thr	Glu	Lys	Glu	Tyr	Tyr	Tyr	Phe	Arg	Ser
		115					120					125			
Val	Asn	Leu	Val	Glu	Ser	Asp	Ala	Tyr	Asp	Asn	Asn	Leu	Ser	Glu	Pro
	130					135					140				
Ile	Val	Phe	Pro	Asn	Asn	Trp	Lys	Arg	Arg	Tyr	Arg	Asn	Gly		
145					150					155					

<211> 913

<213> B.fragilis

Leu	Met	Thr	Pro	Leu	Lys	Ala	Asn	Thr	Ile	Ile	Ser	Ser	Ile	Leu	Leu
1				5					10					15	
Leu	Ile	Leu	Leu	Met	Leu	Pro	Tyr	Glu	Ala	Met	Ala	Gln	Arg	Arg	Arg
			20					25					30		
Val	Arg	Glu	Leu	Lys	Gly	Pro	Val	Val	Tyr	Ser	Pro	Pro	Lys	Asn	Asp
		35				40					45				
Ser	Leu	Arg	Val	Asp	Thr	Leu	Lys	Asn	Asp	Thr	Leu	Lys	Ala	Asn	Val
	50					55					60				
Leu	Lys	Ala	Asp	Thr	Leu	Ser	Ala	Glu	Ser	Val	Lys	Lys	Lys	Lys	Gln
65					70					75					80
Pro	Leu	Asp	Ala	Pro	Val	Val	Tyr	Ser	Ala	Asn	Asp	Ser	Ile	Val	Phe
			85						90					95	
Thr	Gln	Gly	Gly	Phe	Ala	His	Leu	Tyr	Gly	Asp	Gly	Lys	Val	Asn	Tyr
			100					105					110		
Glu	Asn	Ile	Glu	Leu	Gly	Ala	Glu	Ile	Ile	Thr	Met	Asn	Met	Asp	Ser
		115				120					125				
Ser	Thr	Val	Tyr	Ala	Arg	Gly	Val	Ile	Asp	Ser	Val	Gly	Val	Glu	Lys
	130					135				140					
Gly	Lys	Pro	Val	Phe	Lys	Asp	Gly	Glu	Thr	Pro	Tyr	Glu	Thr	Lys	Ala
145					150					155					160
Ile	Arg	Tyr	Asn	Phe	Lys	Ser	Lys	Lys	Gly	Phe	Ile	Asn	Asn	Val	Val
			165						170					175	
Thr	Gln	Gln	Gly	Glu	Gly	Tyr	Val	Val	Gly	Asn	Asn	Ala	Lys	Lys	Gly
			180					185					190		
Ala	Asn	Asp	Glu	Leu	Phe	Met	Glu	Asn	Gly	Arg	Tyr	Thr	Thr	Cys	Asp
		195				200					205				
His	His	Asp	His	Pro	His	Phe	Tyr	Met	Gln	Leu	Thr	Lys	Ala	Lys	Val
	210					215					220				

Arg Pro Lys Lys Asn Val Val Thr Gly Pro Ala Tyr Leu Val Val Glu
 225 230 235 240
 Asp Val Pro Leu Pro Leu Ala Val Pro Phe Phe Phe Phe Pro Phe Ser
 245 250 255
 Ser Ser Tyr Ser Ser Gly Phe Val Met Pro Ser Tyr Met Asp Asp Ser
 260 265 270
 Ser Arg Gly Phe Gly Leu Thr Gly Gly Tyr Tyr Phe Ala Val Ser
 275 280 285
 Asp Leu Met Asp Leu Lys Leu Thr Ala Asp Ile Phe Thr Lys Gly Ser
 290 295 300
 Trp Ala Ala Asn Met Glu Thr Asn Tyr Asn Lys Arg Tyr Lys Tyr Ser
 305 310 315 320
 Gly Ser Leu Gln Ala Gly Tyr Gln Val Thr Lys Leu Gly Asp Lys Gly
 325 330 335
 Met Pro Asp Tyr Ser Val Ala Lys Asp Phe Lys Ile Val Trp Asn His
 340 345 350
 Arg Gln Asp Gln Lys Ala Ser Pro Asn Ser Thr Phe Ser Ala Ser Val
 355 360 365
 Asn Phe Ala Thr Ser Ser Tyr Glu Arg Thr Asn Ile Asn Asn Leu Tyr
 370 375 380
 Asn Ser Gln Leu Met Thr Gln Asn Thr Lys Thr Ser Ser Val Ser Tyr
 385 390 395 400
 Ser Arg Ser Phe Pro Asp Gln Lys Leu Thr Leu Ala Gly Thr Phe Asn
 405 410 415
 Ile Ala Gln Thr Met Arg Asp Ser Ser Ile Ala Val Thr Leu Pro Asp
 420 425 430
 Leu Asn Ile Thr Leu Ser Thr Ile Phe Pro Phe Lys Arg Lys Arg Ala
 435 440 445
 Val Gly Glu Glu Arg Trp Tyr Glu Lys Ile Ser Leu Arg Tyr Ser Gly
 450 455 460
 Arg Leu Thr Asn Ser Leu Lys Thr Lys Asp Asp Arg Leu Phe Lys Ala
 465 470 475 480
 Gly Phe Arg Glu Trp Glu Asn Ala Met Gln His Asn Ile Pro Val Gln
 485 490 495
 Ala Thr Phe Thr Leu Phe Lys Tyr Leu Gln Val Val Pro Ser Phe Asn
 500 505 510
 Tyr Thr Glu Arg Trp Tyr Thr Arg Lys Val Met Lys Ser Tyr Asp Glu
 515 520 525
 Thr Thr Gln Lys Trp Asp Thr His Pro Gly Asp Thr Ile His Gly Phe
 530 535 540
 Tyr Arg Val Phe Asn Tyr Ser Ala Ser Leu Ala Leu Ser Thr Lys Met
 545 550 555 560
 Tyr Gly Met Tyr Gln Pro Leu Phe Met Lys Lys Lys Glu Ile Gln Ile
 565 570 575
 Arg His Val Phe Thr Pro Gln Ile Ser Leu Asn Gly Ser Pro Ser Phe
 580 585 590
 Gly Gln Phe Trp Glu Tyr Tyr Arg Asp Ala Asp Gly Asn Asp Gln Tyr
 595 600 605
 Tyr Ser Pro Tyr Ser Ser Gln Phe Gly Thr Ala Pro Arg Glu Lys
 610 615 620
 Ser Gly Thr Val Ser Phe Asp Val Ser Asn Asn Leu Glu Met Lys Tyr
 625 630 635 640
 Arg Asn Lys Lys Asp Ser Leu Val Lys Val Ser Leu Ile Asp Glu Ile
 645 650 655
 Gly Phe Asn Leu Ser Tyr Asn Met Ala Ala Lys Lys Gln Pro Trp Ser
 660 665 670
 Asn Leu Asn Met Arg Leu Arg Met Lys Phe Lys Lys Phe Asn Asn Tyr
 675 680 685
 Thr Leu Asn Met Asn Ala Val Phe Ala Thr Tyr Ala Tyr Thr Phe Asp

690 695 700
 Lys Ser Gly Asn Val Ile Val Gly Asp Arg Thr Glu Trp Ser Tyr Gly
 705 710 715 720
 Arg Phe Gly Arg Phe Gln Gly Trp Gly Ser Ser Ile Asn Tyr Thr Phe
 725 730 735
 Asn Asn Asp Thr Trp Lys Lys Leu Phe Gly Lys Asp Lys Asp Asn Asp
 740 745 750
 Gln Lys Lys Lys Lys Asp Gly Val Asp Glu Glu Lys Gly Asn Ser Thr
 755 760 765
 Gly Asp Glu Ala Val Thr Glu Lys Arg Val Glu Lys Ala Gln Ala Asp
 770 775 780
 Arg Asp Gly Tyr Gln Val Phe Lys Met Pro Trp Ser Leu Asn Val Asn
 785 790 795 800
 Tyr Ser Phe Arg Ile Ser Glu Asp Arg Ser Lys Pro Ile Asn Arg Asn
 805 810 815
 Thr Met Arg Tyr Pro Phe Lys Tyr Thr Gln Asn Ile Asn Met Ser Gly
 820 825 830
 Asn Leu Lys Ile Ser Asn Asn Trp Ser Phe Thr Phe Asn Ser Gly Tyr
 835 840 845
 Asp Phe Glu Ala Lys Glu Ile Thr Gln Thr Ser Cys Thr Ile Thr Arg
 850 855 860
 Asp Leu His Cys Phe Asn Met Ser Ala Ser Ile Ser Pro Phe Gly Arg
 865 870 875 880
 Tyr Arg Tyr Tyr Asn Phe Thr Ile Arg Ala Thr Ala Ser Ile Leu Arg
 885 890 895
 Asp Leu Lys Trp Asp Lys Arg Ser Gln Thr Gln Ser Asn Ile Gln Trp
 900 905 910
 Tyr

<210> 8996
 <211> 376
 <212> PRT
 <213> B.fragilis

<400> 8996
 Lys Tyr Pro Thr Ile Met Ala Thr Lys Ile Lys Leu Asn Asp Cys Val
 1 5 10 15
 Pro Cys Ile Ala Ile His Pro Gly Glu Ile Ile Lys Asp Glu Leu Asp
 20 25 30
 Ala Arg Glu Met Lys Gln Lys Glu Leu Ala Ser Leu Met Ser Met Pro
 35 40 45
 Thr Ser Val Leu Asn Asp Ile Ile Lys Gly Arg Arg Ala Val Thr Pro
 50 55 60
 Glu Val Ala Val Leu Leu Gln Glu Ile Leu Gly Ile Asp Ala Ser Tyr
 65 70 75 80
 Trp Leu Ser Leu Gln Asn Gln Tyr Asp Ile Asp Arg Ala Asn Ile Asn
 85 90 95
 Lys Lys Ile Val Glu Arg Lys Lys Asn Ile Glu Ile Trp Lys Val Ile
 100 105 110
 Ser Gln Tyr Cys Ser Val Lys Tyr Phe Glu Lys Leu Asn Val Ile Gly
 115 120 125
 Thr Lys Ile Ser Glu Asn Ile Lys Ile Ile Tyr Ser Ile Phe Gly Val
 130 135 140
 Thr Ser Val Glu Glu Leu Ile Ala Ser Phe Ser Ser Glu Lys Glu Leu
 145 150 155 160
 Ser Tyr Phe Lys Lys Ser Glu Arg Leu Lys Ser Asp Pro Ile Asn Ile
 165 170 175
 Phe Ser Trp Lys His Phe Ala Phe Tyr Gln Ser Ser Gln Met Leu Asp

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      180              185              190
Val Ala Asp Phe Asp Glu Asn Ser Leu Glu Arg Leu Val Gln Glu Leu
      195              200              205
Asn Gln Met Phe Val Val Asn Ile Asn Thr Ile Asp Lys Thr Lys Glu
      210              215              220
Ile Leu Ser Arg Tyr Gly Ile Lys Phe Ile Ile Val Pro Lys Phe Asp
225              230              235              240
Lys Thr Pro Ile Asp Gly Phe Ser Phe Trp Gln Gly Lys Asn Pro Thr
      245              250              255
Ile Val Leu Thr Leu Arg Leu Asn Lys Ile Asp Asn Tyr Ala Phe Ala
      260              265              270
Leu Leu His Glu Ile Tyr His Val Tyr Met His Leu Phe Asn Asn Arg
      275              280              285
Glu Gln Lys Tyr Ile Ala Ile Glu Gly Ala Glu Ile Asn Lys Cys Glu
      290              295              300
Glu Glu Ala Asn Lys Phe Ala Lys Cys Ser Leu Ile Gly Lys Asp Leu
305              310              315              320
Trp Asn Thr Phe Leu Lys Gln His Ser Met Ile Ser Pro His Ala Met
      325              330              335
Gln Met Lys Ile Lys Gln Phe Ala His Gln His Asn Ile Asn Glu Ala
      340              345              350
Ile Val Leu Gly Phe Tyr Gln His Asp Ile Asn Leu Tyr Ser Ile Lys
      355              360              365
Ser Ser Ile Ser Arg Glu Ile Lys
      370              375

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<210> 8997
<211> 64
<212> PRT
<213> B.fragilis

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<400> 8997
Ile His Lys Thr Tyr Lys Ala Glu Ile Pro Ile Phe Val Ile Lys Lys
1      5      10      15
Arg Leu Leu Ser Lys Ser Ile Ile Thr Lys Lys Ile Phe Tyr Phe Tyr
      20      25      30
Leu Tyr Phe Ser Gly Ile Phe Leu Ser Met Met Ala Ser Asn Thr Arg
      35      40      45
Asp Asn Ser Leu Ile Thr Lys Lys His Phe Cys His Leu Lys Ile Gly
      50      55      60

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<210> 8998
<211> 412
<212> PRT
<213> B.fragilis

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<400> 8998
Asn Pro Arg Thr Gly Phe Arg Lys Pro Glu Ala Asn Cys Gly Arg Arg
1      5      10      15
Lys Gly Leu Gln Val Leu Lys Thr Ser Pro Arg Ser Asn Arg Leu His
      20      25      30
Ile Ala Leu Phe Gly Lys Arg Asn Ser Gly Lys Ser Ser Leu Ile Asn
      35      40      45
Ala Leu Thr Asn Gln Asn Ala Ala Leu Val Ser Asp Ile Ala Gly Thr
      50      55      60
Thr Thr Asp Pro Val Tyr Gln Pro Met Glu Ile His Gly Ile Gly Pro
      65      70      75      80
Cys Val Phe Ile Asp Thr Ala Gly Phe Asp Asp Glu Gly Glu Leu Gly
      85      90      95

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Ser Leu Arg Ile Glu Arg Thr Leu Gln Ala Ala Asp Lys Ala Asp Ile
 100 105 110
 Ala Leu Met Val Cys Cys Asp Thr Glu Leu Ser Glu Glu Gln Arg Trp
 115 120 125
 Ile Glu Leu Leu Lys Glu Arg Asn Ile Pro Tyr Leu Leu Val Leu Asn
 130 135 140
 Lys Ala Asp Leu Leu Glu Lys Pro Asp Glu Val Ala Asp Lys Leu Glu
 145 150 155 160
 Gln Gln Thr Gly Gln His Pro Leu Ile Val Ser Ala Lys Glu Lys Thr
 165 170 175
 Gly Ile Asp Ser Ile Arg Gln Ser Ile Leu His Arg Leu Pro Glu Leu
 180 185 190
 Asn Glu Gln Pro Asp Ile Val Gly Asp Leu Ala Asn Glu Gly Asp Val
 195 200 205
 Val Leu Leu Val Met Pro Gln Asp Ile Gln Ala Pro Lys Gly Arg Leu
 210 215 220
 Ile Leu Pro Gln Val Gln Thr Leu Arg Glu Leu Leu Asp Lys Lys Cys
 225 230 235 240
 Ile Thr Leu Ser Cys Thr Thr Asp Gln Leu Asp Asn Ala Leu Lys Val
 245 250 255
 Leu Ser Ala Pro Pro Ser Leu Ile Ile Thr Asp Ser Gln Val Phe Arg
 260 265 270
 Thr Val Tyr Glu Lys Lys Pro Pro Gln Ser Arg Leu Thr Ser Phe Ser
 275 280 285
 Val Leu Phe Ala His Tyr Lys Gly Asp Ile Asp Tyr Tyr Thr Glu Gly
 290 295 300
 Ala Tyr Ile Ile Asp Gln Leu Thr Glu Asn Ser Arg Val Leu Ile Ala
 305 310 315 320
 Glu Ala Cys Thr His Ala Pro Leu Ser Glu Asp Ile Gly Arg Val Lys
 325 330 335
 Leu Pro Arg Met Leu Arg Lys Arg Ile Gly Glu Gln Leu His Ile Asp
 340 345 350
 Ile Val Ser Gly Asn Asp Phe Pro Lys Asp Leu Asn Cys Tyr Asp Leu
 355 360 365
 Ile Ile His Cys Gly Ala Cys Met Phe Asn Arg Lys His Val Leu Asn
 370 375 380
 Arg Ile Val Lys Ala Lys Ala Gln Gly Val Pro Met Thr Asn Tyr Gly
 385 390 395 400
 Ile Val Ile Ala Tyr Ile Asn Gly Ile Pro Phe His
 405 410

<210> 8999

<211> 213

<212> PRT

<213> B.fragilis

<400> 8999

Ile Tyr Pro Thr Glu Ala Phe Ala Phe Tyr Leu Gly Leu Leu Ile Gly
 1 5 10 15
 Ile Arg Tyr Lys Val Val Arg Ser Leu Lys Cys Leu Tyr Val Phe Gly
 20 25 30
 Ile Cys Ile Leu Ala Met Gly Ser Phe His Trp Val Ser Arg Met Met
 35 40 45
 Asp Arg Pro Val Gln Ser Ile Val Phe Tyr Asn Val Arg Gly Cys Pro
 50 55 60
 Val Val His Cys Ile Glu Ala Cys Gly Lys Ser Trp Leu Ala Tyr Ala
 65 70 75 80
 Asp Ser Ile Pro Asp Glu Arg Arg Leu Ser Arg Ala Val Ala Gly Tyr
 85 90 95

Trp Asn Arg Leu His Leu Asp Val Pro Val Thr Ile Thr Asp Asn Phe
 100 105 110
 His Ser Ser Gly Phe Trp Met Gln Asp His Leu Leu Met Phe Gly Asn
 115 120 125
 Lys Arg Ile Cys Met Val Ser Asp Asn Arg Trp Arg Asn Lys Thr Ala
 130 135 140
 Ala Glu Ser Phe Asn Ile Asp Tyr Leu Tyr Val Cys Lys Gly Tyr Thr
 145 150 155 160
 Gly Lys Leu Glu Ser Leu Val Gly Leu Phe His Cys Arg Glu Val Ile
 165 170 175
 Leu Asp Ser Ser Leu Ser Ala Tyr Tyr Lys Glu Ala Tyr Ser Glu Glu
 180 185 190
 Cys Arg Arg Leu Gly Leu His Phe Ile Ser Leu Ser Asp Glu Gly Ser
 195 200 205
 Val Arg Phe Leu Leu
 210

<210> 9000
 <211> 122
 <212> PRT
 <213> B.fragilis

<400> 9000
 Phe Ile Tyr Leu Ile Lys Thr Ser Met Asn Gln Tyr Glu Thr Val Phe
 1 5 10 15
 Ile Leu Thr Pro Val Leu Ser Asp Val Gln Met Lys Glu Ala Val Glu
 20 25 30
 Lys Phe Lys Gly Ile Leu Gln Ala Glu Gly Ala Glu Ile Ile Asn Glu
 35 40 45
 Glu Asn Trp Gly Leu Lys Lys Leu Ala Tyr Pro Ile Gln Lys Lys Ser
 50 55 60
 Thr Gly Phe Tyr Gln Leu Ile Glu Phe Asn Ala Glu Pro Thr Val Ile
 65 70 75 80
 Asp Lys Leu Glu Leu Asn Phe Arg Arg Asp Glu Arg Val Ile Arg Phe
 85 90 95
 Leu Thr Phe Arg Met Asp Lys Tyr Ala Ala Glu Tyr Ala Ala Lys Arg
 100 105 110
 Arg Ser Val Lys Ser Asn Lys Lys Glu Asp
 115 120

<210> 9001
 <211> 510
 <212> PRT
 <213> B.fragilis

<400> 9001
 Cys Thr Leu Ala Glu Tyr Ser Tyr Lys Pro Tyr Leu Cys Asn Pro Asn
 1 5 10 15
 Ser Lys Tyr Ser Asn Met Ala Phe Thr Asn Asn Val Met Ile Val Arg
 20 25 30
 His Lys Leu Leu Ala Lys Leu Val Asn Leu Trp Lys Glu Asn Lys Leu
 35 40 45
 Thr Asn Glu Ile Asp Arg Leu Pro Ile Glu Leu Ser Pro Arg Arg Ser
 50 55 60
 Arg Pro Leu Gly Arg Cys Cys Ile His Lys Glu Arg Ala Val Tyr Lys
 65 70 75 80
 Tyr Lys Leu Phe Pro Leu Leu Gly Phe Asp Met Thr Asp Glu Thr Asp
 85 90 95
 Glu Leu Thr Pro Leu Ser Glu Tyr Ala Arg Gln Ala Leu Glu Arg Lys

	100		105		110
Asn Lys Gln Lys Glu Asn Ile Leu Cys Val Ile Asp Glu Ala Cys Ser					
115		120		125	
Ser Cys Val Gln Val Asn Tyr Glu Val Thr Asn Leu Cys Arg Gly Cys					
130		135		140	
Val Ala Arg Ser Cys Tyr Met Asn Cys Pro Lys Asp Ala Ile Arg Phe					
145		150		155	160
Arg Lys Asn Gly Gln Ala Lys Ile Asp His Asp Ala Cys Ile Ser Cys					
165		170		175	
Gly Lys Cys His Gln Ser Cys Pro Tyr His Ala Ile Val Phe Ile Pro					
180		185		190	
Val Pro Cys Glu Glu Ala Cys Pro Val Lys Ala Ile Ser Lys Asp Glu					
195		200		205	
Asn Gly Ile Glu His Ile Asp Glu Ser Lys Cys Ile Tyr Cys Gly Lys					
210		215		220	
Cys Leu Asn Ala Cys Pro Phe Gly Ala Ile Phe Glu Ile Ser Gln Ala					
225		230		235	240
Phe Asp Val Leu Glu Gly Ile Arg Ser Gly Glu Lys Met Ile Ala Ile					
245		250		255	
Pro Ala Pro Ser Ile Leu Gly Gln Phe Asn Thr Ser Ile Glu Ala Val					
260		265		270	
Tyr Gly Ala Leu Arg Gln Met Gly Phe Ala Asp Val Val Glu Val Ala					
275		280		285	
Gln Gly Ala Met Asp Thr Val Ser His Glu Ala Ala Glu Leu Lys Glu					
290		295		300	
Lys Leu Glu Glu Gly Gln Pro Phe Met Thr Thr Ser Cys Cys Pro Ser					
305		310		315	320
Tyr Ile Glu Leu Val Asn Lys His Ile Pro Gly Met Lys Pro Tyr Val					
325		330		335	
Ser Ser Thr Gly Ser Pro Met Tyr Tyr Ala Ala Arg Ile Ala Lys Glu					
340		345		350	
Arg His Pro Asp Ala Lys Ile Val Phe Ile Gly Pro Cys Val Ala Lys					
355		360		365	
Arg Lys Glu Ala Arg Arg Asp Glu Cys Val Asp Tyr Ile Leu Thr Phe					
370		375		380	
Glu Glu Met Ala Ser Ile Phe Glu Gly Leu Asp Ile Gln Leu Glu Gln					
385		390		395	400
Thr Gln Pro Phe Ser Val Leu Tyr Thr Ser Val Arg Glu Ala His Gly					
405		410		415	
Phe Ala Gln Ala Gly Gly Val Met Gly Ala Ile Lys Ala Tyr Leu Gly					
420		425		430	
Glu Glu Ala Lys Lys Phe Ser Ala Ile Gln Val Ser Asp Leu Asn Lys					
435		440		445	
Lys Asn Ile Gly Leu Leu Arg Ala Ala Ala Lys Thr Gly Lys Ala Gln					
450		455		460	
Gly Gln Phe Ile Glu Val Met Ala Cys Glu Gly Gly Cys Ile Ser Gly					
465		470		475	480
Pro Ser Ala His Asn Asp Ala Ile Gly Gly Arg Arg Gln Leu Asn Gln					
485		490		495	
Glu Leu Ile Lys Arg Arg Glu Ser Tyr Glu Glu Thr His Arg					
500		505		510	

<210> 9002

<211> 801

<212> PRT

<213> B.fragilis

<400> 9002

Ile Gly Ile Ala Glu Lys Asn Tyr Leu Cys Ile Ser Thr Thr His His

1					5					10					15				
Lys	Asp	Lys	Ile	Met	Lys	Lys	Lys	Val	Leu	Ser	Leu	Leu	Ala	Phe	Leu				
			20				25						30						
Pro	Ala	Phe	Thr	Thr	Val	Met	Ala	Gln	Gln	Thr	Ala	Glu	Val	Pro	Asp				
			35				40						45						
Val	Cys	Ala	Phe	Val	Asn	Pro	Ile	Ile	Gly	Thr	Asn	Gly	Met	Gly	His				
			50				55						60						
Thr	Phe	Pro	Gly	Ala	Cys	Ala	Pro	Phe	Gly	Leu	Val	Gln	Leu	Ser	Pro				
65				70						75						80			
Asp	Thr	Asp	Thr	Ile	Pro	His	Asn	Ile	Asp	Gly	Thr	Tyr	Gln	Arg	Asn				
			85						90						95				
Ala	Tyr	Glu	Tyr	Cys	Ala	Gly	Tyr	Gln	Tyr	His	Asp	Pro	Thr	Ile	Val				
			100						105						110				
Gly	Phe	Ser	His	Thr	His	Leu	Ser	Gly	Thr	Gly	His	Ser	Asp	Leu	Gly				
			115						120						125				
Asp	Ile	Leu	Ile	Met	Pro	Ala	Thr	Gly	Gln	Leu	Lys	Leu	Asn	Pro	Gly				
			130						135						140				
Arg	Ala	Gly	Thr	Pro	Asp	Glu	Gly	Tyr	Arg	Ser	Arg	Phe	Ser	His	Asp				
145				150						155						160			
Thr	Glu	Val	Ala	Arg	Pro	Gly	Tyr	Tyr	Glu	Val	Glu	Leu	Ala	Asp	Tyr				
			165						170						175				
Gly	Ile	Lys	Ala	Gln	Leu	Thr	Ala	Thr	Gln	Arg	Val	Gly	Ile	His	Lys				
			180						185						190				
Tyr	Thr	Phe	Pro	Asp	Asn	Ala	Asp	Gly	His	Ile	Ile	Leu	Asp	Leu	Ile				
			195						200						205				
His	Gly	Ile	Tyr	Asn	Tyr	Asp	Gly	Lys	Thr	Leu	Trp	Ala	Asn	Leu	Arg				
			210						215						220				
Val	Glu	Asn	Asp	Thr	Leu	Leu	Thr	Gly	Tyr	Arg	Ile	Thr	Asn	Gly	Trp				
225				230						235						240			
Ala	Arg	Thr	Asn	Tyr	Thr	Tyr	Phe	Ala	Ile	Ser	Leu	Ser	Gln	Pro	Ile				
			245						250						255				
Lys	Asp	Tyr	Gly	Tyr	Thr	Asp	Lys	Gly	Lys	Ala	Leu	Tyr	Lys	Gly	Phe				
			260						265						270				
Trp	Arg	Arg	Phe	Asn	Thr	Asp	Arg	Asn	Phe	Pro	Glu	Met	Thr	Gly	Arg				
			275						280						285				
Lys	Leu	Val	Ala	Tyr	Phe	Asn	Phe	Asp	Thr	Arg	Gln	Asn	Pro	Glu	Leu				
			290						295						300				
Val	Ile	Lys	Val	Ala	Leu	Ser	Ala	Val	Ser	Thr	Glu	Gly	Ala	Val	Lys				
305				310						315						320			
Asn	Leu	Gln	Ala	Glu	Ala	Ala	Gly	Lys	Thr	Phe	Asn	Gln	Leu	Val	Ala				
			325						330						335				
Glu	Ala	Asn	Ser	Ala	Trp	Asn	Arg	Glu	Leu	Asp	Val	Leu	Glu	Ala	Lys				
			340						345						350				
Gly	Thr	Pro	Asp	Gln	Leu	Ala	Met	Phe	Tyr	Thr	Ser	Leu	Tyr	His	Thr				
			355						360						365				
Met	Ile	Asn	Pro	Ser	Val	Tyr	Met	Asp	Val	Asp	Gly	Arg	Tyr	Arg	Gly				
			370						375						380				
Leu	Asp	His	Asn	Ile	His	Thr	Ser	Glu	Gly	Phe	Thr	Asn	Tyr	Thr	Ile				

Ala Met Asp His Thr Ala Asn Val Pro Tyr Tyr Glu Gly Val Glu Ala
 485 490 495
 Tyr Lys Arg Leu Gly Tyr Val Pro Phe Asp Gln Ser Gly Thr Ala Ala
 500 505 510
 Ser Thr Thr Leu Glu Tyr Ala Tyr Asp Asp Trp Thr Ile Tyr Arg Thr
 515 520 525
 Ala Leu Leu Ala Gly Asp Asp Gln Leu Ala Asp Leu Tyr Lys Lys Arg
 530 535 540
 Ala Asn Asn Tyr Arg Asn Val Phe Asp Thr Ser Val Gly Phe Ala Arg
 545 550 555 560
 Pro Arg Tyr Ser Asn Gly Glu Phe Arg Lys Glu Phe Asp Ala Met Gln
 565 570 575
 Thr Tyr Gly Glu Gly Phe Ile Glu Gly Asn Ser Trp Asn Phe Ser Phe
 580 585 590
 His Val Pro His Asp Val Ala Gly Leu Ile Arg Leu Met Gly Gly Glu
 595 600 605
 Lys Lys Phe Val Ser Arg Leu Asp Thr Leu Phe Ser Met Ala Leu Pro
 610 615 620
 Arg Lys Tyr Tyr Glu Lys Asn Glu Asp Ile Ala Glu Val Ser Leu Val
 625 630 635 640
 Arg Arg Tyr Val His Gly Asn Glu Pro Ser His His Ile Pro Tyr Leu
 645 650 655
 Tyr Ala Trp Thr Ser Gln Pro Trp Lys Thr Gln Tyr Trp Leu Arg Thr
 660 665 670
 Val Met Asn Arg Met Tyr Lys Asn Asp Ile Asp Gly Leu Gly Gly Asn
 675 680 685
 Asp Asp Cys Gly Gln Met Ser Ala Trp Tyr Leu Phe Thr Ala Met Gly
 690 695 700
 Phe Tyr Pro Val Cys Pro Gly Thr Asp Gln Tyr Val Leu Gly Ala Pro
 705 710 715 720
 Tyr Leu Pro Tyr Ile Arg Met Asn Leu Pro Asn Gly Arg Thr Phe Glu
 725 730 735
 Ile Lys Ala Pro Lys Val Ser Asp Arg Asn Cys Tyr Val Arg Gln Val
 740 745 750
 Lys Leu Asn Gly Lys Val Tyr Asp Lys Met Tyr Ile Thr His Ala Asp
 755 760 765
 Leu Leu Ala Gly Gly Thr Leu Glu Phe Asp Met Ala Ala Ser Pro Asn
 770 775 780
 Lys Lys Arg Gly Leu Ala Lys Glu Ala Lys Pro Tyr Ser Met Ser Glu
 785 790 795 800
 Glu

<210> 9003

<211> 181

<212> PRT

<213> B.fragilis

<400> 9003

Asp Met Lys Ala Phe Phe Ser Phe Val Ala Ala Leu Val Leu Ser Leu
 1 5 10 15
 Ser Met Ala Ala Gln Asn Lys Ser Phe Tyr Asp Phe Thr Val Lys Thr
 20 25 30
 Ile Asp Gly Lys Glu Tyr Pro Leu Ser Gly Leu Lys Gly Lys Lys Val
 35 40 45
 Leu Val Val Asn Val Ala Ser Lys Cys Gly Leu Thr Pro Gln Tyr Ala
 50 55 60
 Glu Leu Gln Glu Leu Tyr Asp Gln Tyr Lys Asp Gln Asn Phe Val Ile
 65 70 75 80

Ile Gly Phe Pro Ala Asn Asn Phe Met Gly Gln Glu Pro Gly Thr Asn
85 90 95
Glu Glu Ile Ala Lys Phe Cys Ser Val Asn Tyr Asp Val Thr Phe Pro
100 105 110
Ile Met Ala Lys Ile Ser Val Lys Gly Lys Asp Met Ala Pro Leu Tyr
115 120 125
His Trp Leu Thr Glu Lys Lys Leu Asn Gly Lys Gln Asp Ala Pro Val
130 135 140
Gln Trp Asn Phe Gln Lys Phe Met Ile Asp Glu Asn Gly Asn Trp Val
145 150 155 160
Gly Phe Val Ala Pro Lys Glu Ser Pro Phe Ser Glu Thr Ile Ile Ser
165 170 175
Trp Ile Glu Lys Lys
180

<210> 9004

<211> 787

<212> PRT

<213> B.fragilis

<400> 9004

Arg Lys Glu Ala Leu Val Arg Arg Leu Lys Asn Ser Lys Gln Phe Asn
1 5 10 15
Lys Asn Met Lys Lys Leu Ile Leu Leu Ile Leu Ile Phe Ser Leu
20 25 30
Pro Val Ala Ala Gln Asn Phe Thr Ile Gly Lys Ser Thr Phe Leu Leu
35 40 45
Asn Gly Lys Pro Phe Thr Val Lys Ala Ala Glu Leu His Tyr Thr Arg
50 55 60
Ile Pro Ala Pro Tyr Trp Glu His Arg Ile Glu Met Cys Lys Ala Leu
65 70 75 80
Gly Met Asn Thr Ile Cys Leu Tyr Val Phe Trp Asn Ile His Glu Gln
85 90 95
Thr Glu Gly Gln Phe Asp Phe Thr Gly Gln Asn Asp Ile Ala Ala Phe
100 105 110
Cys Arg Leu Ala Gln Lys His Gly Met Tyr Val Ile Val Arg Pro Gly
115 120 125
Pro Tyr Val Cys Ala Glu Trp Glu Met Gly Gly Leu Pro Trp Trp Leu
130 135 140
Leu Lys Lys Lys Asp Ile Ile Leu Arg Thr Leu Asp Pro Tyr Phe Met
145 150 155 160
Glu Arg Thr Ala Ile Phe Met Lys Glu Val Gly Lys Gln Leu Ala Pro
165 170 175
Leu Gln Ile Thr Arg Gly Gly Asn Ile Ile Met Val Gln Val Glu Asn
180 185 190
Glu Tyr Gly Ala Tyr Ala Val Asp Lys Pro Tyr Val Ser Ala Ile Arg
195 200 205
Asp Ile Val Lys Ser Ala Gly Phe Thr Glu Val Pro Leu Phe Gln Cys
210 215 220
Asp Trp Ser Ser Thr Phe Asp Arg Asn Gly Leu Asp Asp Leu Leu Trp
225 230 235 240
Thr Ile Asn Phe Gly Thr Gly Ala Asn Ile Glu Gln Gln Phe Lys Arg
245 250 255
Leu Lys Glu Ala Arg Pro Glu Thr Pro Leu Met Cys Ser Glu Phe Trp
260 265 270
Ser Gly Trp Phe Asp His Trp Gly Arg Lys His Glu Thr Arg Pro Ala
275 280 285
Lys Ser Met Val Gln Gly Ile Lys Asp Met Leu Asp Arg Asn Ile Ser
290 295 300

Phe	Ser	Leu	Tyr	Met	Ala	His	Gly	Gly	Thr	Thr	Phe	Gly	His	Trp	Gly
305					310					315					320
Gly	Ala	Asn	Asn	Pro	Ser	Tyr	Ser	Ala	Met	Cys	Ser	Ser	Tyr	Asp	Tyr
				325					330					335	
Asp	Ala	Pro	Ile	Ser	Glu	Pro	Gly	Trp	Thr	Thr	Asp	Lys	Tyr	Phe	Gln
			340					345					350		
Leu	Arg	Asp	Leu	Leu	Arg	Asn	Tyr	Leu	Pro	Ala	Gly	Glu	Gln	Leu	Pro
		355					360					365			
Glu	Ile	Pro	Glu	Ala	Phe	Pro	Val	Ile	Glu	Ile	Pro	Glu	Val	Glu	Phe
	370					375					380				
Thr	Gln	Ile	Ala	Pro	Leu	Phe	Ser	Asn	Leu	Pro	Glu	Ala	Lys	Glu	Ser
385					390					395					400
Met	Asp	Ile	Gln	Pro	Met	Glu	Ala	Phe	Asp	Gln	Gly	Trp	Gly	Thr	Ile
				405					410					415	
Leu	Tyr	Arg	Thr	Thr	Leu	Gln	Glu	Pro	Val	Glu	Asn	Gly	Thr	Thr	Met
			420					425					430		
Lys	Ile	Thr	Glu	Val	His	Asp	Trp	Ala	Gln	Val	Phe	Ala	Asp	Gly	Lys
		435					440					445			
Leu	Leu	Ala	Arg	Leu	Asp	Arg	Arg	Arg	Gly	Glu	Phe	Val	Leu	Gln	Leu
	450				455						460				
Pro	Ala	Leu	Lys	Lys	Gly	Thr	Arg	Ile	Asp	Ile	Leu	Val	Glu	Ala	Met
465					470				475						480
Gly	Arg	Val	Asn	Phe	Asp	Glu	Ser	Ile	His	Asp	Arg	Lys	Gly	Ile	Thr
			485						490					495	
Glu	Lys	Val	Glu	Leu	Val	Arg	Gly	Lys	Gln	Ser	Ala	Glu	Leu	Lys	Asn
			500					505					510		
Trp	Thr	Val	Tyr	Ser	Phe	Pro	Val	Asp	Tyr	Ser	Phe	Val	Gln	Asp	Lys
		515					520					525			
Arg	Tyr	Lys	Asn	Gly	Thr	Ala	Gln	Thr	Met	Pro	Ala	Tyr	Tyr	Arg	Thr
	530				535						540				
Thr	Phe	Arg	Leu	Asp	Lys	Val	Gly	Asp	Thr	Phe	Leu	Asp	Met	Ser	Thr
545				550					555						560
Trp	Gly	Lys	Gly	Met	Val	Trp	Val	Asn	Gly	Leu	Val	Ile	Gly	Arg	Phe
			565						570					575	
Trp	Glu	Ile	Gly	Pro	Gln	Gln	Thr	Leu	Phe	Met	Pro	Gly	Cys	Trp	Leu
			580					585					590		
Lys	Glu	Gly	Glu	Asn	Glu	Ile	Ile	Val	Leu	Asp	Leu	Lys	Gly	Pro	Glu
		595					600					605			
Lys	Ala	Ser	Ile	Arg	Gly	Leu	Lys	Lys	Pro	Ile	Leu	Asp	Trp	Leu	Arg
	610				615						620				
Asn	Glu	Gly	Ala	Ser	Thr	His	Arg	Lys	Glu	Gly	Glu	Gln	Leu	Asp	Leu
625				630					635						640
Ser	Arg	Glu	Thr	Pro	Val	Ala	Glu	Gly	Thr	Phe	Val	Pro	Gly	Asn	Gly
			645						650				655		
Trp	Gln	Glu													

770

775

780

Phe Gln Tyr
785

<210> 9005

<211> 359

<212> PRT

<213> B.fragilis

<400> 9005

Gln Asn His Phe Asn Ile Lys Ser Met Arg Arg Lys Ile Met Met Ala
1 5 10 15
Thr Leu Ile Val Ile Ala Val Asn Phe Ile Trp Ser Gly Gln Pro Val
20 25 30
Lys Ala Cys Thr Arg Ala Val Tyr Ile Gly Pro Asp Asn Met Val Ile
35 40 45
Thr Gly Arg Thr Met Asp Trp Lys Glu Asp Ile Gln Ser Asn Leu Tyr
50 55 60
Leu Phe Pro Arg Gly Ile Lys Arg Ala Gly Tyr Asn Lys Gly Asn Thr
65 70 75 80
Val Glu Trp Ile Ser Lys Tyr Gly Ser Ile Val Ala Thr Gly Tyr Asp
85 90 95
Ile Gly Thr Cys Asp Gly Met Asn Glu Lys Gly Leu Val Ala Ser Leu
100 105 110
Leu Phe Leu Pro Glu Ser Ile Tyr Val Arg Pro Asn Asp Thr Arg Pro
115 120 125
Val Met Gly Ile Ser Ile Trp Thr Gln Tyr Val Leu Asp Asn Phe Ala
130 135 140
Thr Val Ser Glu Ala Val Ala Glu Leu Lys Lys Gln Thr Phe Arg Ile
145 150 155 160
Asp Ala Pro Asp Met Pro Asn Gly Ser Ala Ser Thr Leu His Met Ala
165 170 175
Ile Thr Asp Glu Thr Gly Asn Ser Ala Val Leu Glu Tyr Ile Asp Gly
180 185 190
Asn Leu Ile His Glu Gly Lys Glu Tyr Gln Val Met Thr Asn Ser
195 200 205
Pro Arg Tyr Asp Leu Gln Leu Ala Val Asn Asp Tyr Trp Lys Glu Val
210 215 220
Gly Gly Leu Asn Met Leu Pro Gly Thr Asn Arg Ser Ser Asp Arg Phe
225 230 235 240
Val Arg Ala Ser Phe Tyr Ile His Ala Ile Pro Gln Thr Ser Asp Ala
245 250 255
Lys Ile Ala Val Pro Ser Val Leu Ser Val Met Arg Asn Val Ser Val
260 265 270
Pro Phe Gly Ile Thr Thr Pro Asp Lys Pro Tyr Ile Ser Ser Thr Arg
275 280 285
Trp Arg Ser Val Ser Asp Gln Lys Asn Arg Val Tyr Tyr Phe Glu Ser
290 295 300
Thr Leu Thr Pro Asn Leu Phe Trp Ile Asp Leu His Lys Val Asp Phe
305 310 315 320
Ser Pro Asn Ala Ser Ile Lys Lys Leu Ser Leu Thr His Gly Glu Val
325 330 335
Tyr Ala Gly Asp Val Val Lys Asp Phe Lys Asp Ser Arg Ser Phe Thr
340 345 350
Phe Met Phe Glu Leu Pro Lys
355

<210> 9006

<211> 471

<212> PRT

<213> B.fragilis

<400> 9006

Ile	Thr	Asn	Phe	Leu	Lys	Gln	Gln	Pro	Met	Thr	Leu	Ile	Lys	Ser	Ile
1			5						10					15	
Ser	Gly	Ile	Arg	Gly	Thr	Ile	Gly	Gly	Gly	Ala	Gly	Glu	Gly	Leu	Asn
		20					25						30		
Pro	Leu	Asp	Ile	Val	Lys	Phe	Thr	Ser	Ala	Tyr	Ala	Thr	Leu	Ile	Arg
		35					40					45			
Lys	Thr	Cys	Lys	Ser	Lys	Ser	Asn	Lys	Ile	Val	Val	Gly	Arg	Asp	Ala
	50					55					60				
Arg	Ile	Ser	Gly	Glu	Met	Val	Lys	Asn	Val	Val	Val	Gly	Thr	Leu	Met
65					70					75					80
Gly	Met	Gly	Trp	Asp	Val	Val	Asp	Ile	Asp	Leu	Ala	Ser	Thr	Pro	Thr
			85					90						95	
Thr	Glu	Leu	Ala	Val	Thr	Met	Glu	Gly	Ala	Cys	Gly	Gly	Ile	Ile	Leu
			100					105					110		
Thr	Ala	Ser	His	Asn	Pro	Lys	Gln	Trp	Asn	Ala	Leu	Lys	Leu	Leu	Asn
		115					120						125		
Glu	His	Gly	Glu	Phe	Leu	Asn	Ala	Ala	Glu	Gly	Gln	Glu	Val	Leu	Arg
	130					135					140				
Ile	Ala	Ala	Ala	Glu	Glu	Phe	Asp	Tyr	Ala	Asp	Val	Asp	His	Leu	Gly
145					150					155					160
Ser	Tyr	Arg	Lys	Asp	Leu	Thr	Tyr	Asn	Lys	Lys	His	Ile	Asp	Ser	Val
			165						170					175	
Leu	Ala	Leu	Asp	Leu	Val	Asp	Val	Glu	Ala	Ile	Lys	Lys	Ala	Asp	Phe
			180					185					190		
Thr	Val	Ala	Ile	Asp	Cys	Val	Asn	Ser	Val	Gly	Gly	Ile	Ile	Leu	Pro
		195					200					205			
Glu	Leu	Leu	Glu	Arg	Leu	Gly	Val	Lys	His	Val	Glu	Lys	Leu	Tyr	Cys
	210					215					220				
Glu	Pro	Thr	Gly	Asn	Phe	Ala	His	Asn	Pro	Glu	Pro	Leu	Glu	Lys	Asn
225					230					235					240
Leu	Gly	Asp	Ile	Met	Asn	Leu	Met	Lys	Gly	Gly	Lys	Ala	Asp	Val	Ala
				245					250					255	
Phe	Val	Val	Asp	Pro	Asp	Val	Asp	Arg	Leu	Ala	Met	Ile	Cys	Glu	Asn
			260					265					270		
Gly	Val	Met	Tyr	Gly	Glu	Glu	Tyr	Thr	Leu	Val	Thr	Val	Ala	Asp	Tyr
		275					280					285			
Val	Leu	Lys	His	Thr	Pro	Gly	Asn	Thr	Val	Ser	Asn	Leu	Ser	Ser	Thr
	290					295					300				
Arg	Ala	Leu	Arg	Asp	Val	Thr	Arg	Lys	Tyr	Gly	Met	Glu	Tyr	Asn	Ala
305					310					315					320
Ser	Ala	Val	Gly	Glu	Val	Asn	Val	Val	Thr	Lys	Met	Lys	Ala	Thr	Asn
			325						330					335	
Ala	Val	Ile	Gly	Gly	Glu	Gly	Asn	Gly	Gly	Val	Ile	Tyr	Pro	Ala	Ser
		340					345						350		
His	Tyr	Gly	Arg	Asp	Ala	Leu	Val	Gly	Ile	Ala	Leu	Phe	Leu	Ser	His
		355					360					365			
Leu	Ala	His	Glu	Gly	Lys	Lys	Val	Ser	Glu	Leu	Arg	Ala	Thr	Tyr	Pro
	370					375					380				
Pro	Tyr	Phe	Ile	Ala	Lys	Asn	Arg	Val	Asp	Leu	Thr	Pro	Glu	Ile	Asp
385					390					395					400
Val	Asp	Ala	Ile	Leu	Ala	Lys	Val	Lys	Asp	Ile	Tyr	Lys	Asn	Glu	Glu
			405						410					415	
Ile	Asn	Asp	Ile	Asp	Gly	Val	Lys	Ile	Asp	Phe	Ala	Asp	Lys	Trp	Val
		420						425					430		
His	Leu	Arg	Lys	Ser	Asn	Thr	Glu	Pro	Ile	Ile	Arg	Ile	Tyr	Ser	Glu

435 440 445
 Ala Ser Thr Met Glu Ala Ala Glu Glu Ile Gly Gln Lys Ile Met Asn
 450 455 460
 Val Ile Asn Glu Leu Ala Lys
 465 470

<210> 9007
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 9007
 Thr Asp Ser Tyr Asn Arg Tyr Arg His Trp Ala Gly Gln Ser Arg Gln
 1 5 10 15
 Thr Leu Ser Pro Leu Val Pro Thr Arg Asn Thr Asn His Arg Arg Gln
 20 25 30
 Lys Leu His Arg Ser Tyr Thr Pro His Pro Glu Arg Pro Met Lys Ala
 35 40 45
 Ile Ile Ile Glu Asp Glu Lys Ala Ala Val Arg Asn Leu Thr Ser Leu
 50 55 60
 Leu Gly Glu Val Cys Pro Gln Ile Glu Ile Val Thr Glu Leu Asp Ser
 65 70 75 80
 Ile Ala Asp Thr Ile Glu Trp Phe Thr Asp His Ser Met Pro Asp Leu
 85 90 95
 Val Phe Met Asp Ile His Leu Ala Asp Gly Ser Ala Phe Glu Ile Phe
 100 105 110
 Glu His Val His Ile Thr Cys Pro Ile Ile Phe Thr Thr Ala Tyr Asp
 115 120 125
 Glu Tyr Ala Leu Arg Ala Phe Lys Val Asn Ser Ile Asp Tyr Leu Leu
 130 135 140
 Lys Pro Ile Gly Arg Gln Asp Ile Glu Gln Ala Leu Glu Lys Leu Thr
 145 150 155 160
 Leu Phe Ser Ser Gly Asn Ser Lys Pro Thr Gly Pro Glu Thr Asn Glu
 165 170 175
 Leu Val Asn Leu Met Arg Met Leu Lys Lys Gln Glu Ser Tyr Lys Thr
 180 185 190
 His Phe Leu Ile Pro Ile Lys Gly Asp Lys Leu Leu Pro Val Ser Val
 195 200 205
 Asp Met Ile Leu Leu Phe Tyr Ile Arg Asp Cys Gln Val Lys Ala Val
 210 215 220
 Leu Thr Asp Gly Thr Glu Tyr Ser Phe Pro Gln Thr Leu Asp Glu Leu
 225 230 235 240
 Thr Glu Cys Leu Asp Pro Thr Leu Phe Phe Arg Ala Asn Arg Gln Tyr
 245 250 255
 Leu Leu Ser Arg Glu Ala Ile Lys Asp Ile Asp Leu Trp Phe Asn Ser
 260 265 270
 Arg Leu Ser Ile Asn Leu Arg His Ser Val Ser Gly Glu Lys Ile Leu
 275 280 285
 Val Ser Lys Ala Arg Val Ala Glu Phe Lys Glu Trp Phe Ser Val Lys
 290 295 300

<210> 9008
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9008
 Arg Phe Ser Leu Leu Leu Pro Pro Lys Lys Leu Cys Arg Asp Thr Phe
 1 5 10 15

His His Gly Thr Gln Ser Asn Thr Glu Phe Phe Leu Leu Ile Ile Asn
 20 25 30
 Asn Leu Lys Leu Pro Leu Cys Tyr Ser Val Ser Ser Val Val Ser Phe
 35 40 45
 Asn Thr Leu Asn Tyr Phe Phe Ser Ile Gln Leu Ile Ile Val Ser Glu
 50 55 60
 Lys Gly Leu Ser Leu Gly Ala Thr Lys Pro Thr Gln Phe Pro Phe Ser
 65 70 75 80
 Ser Ile Ile Asn Phe
 85

<210> 9009
 <211> 293
 <212> PRT
 <213> B.fragilis

<400> 9009
 Thr Met Lys Tyr Thr Asp Arg Glu Leu Asp Arg Leu Leu Glu Lys Leu
 1 5 10 15
 Ile Ala Ser Thr Arg Ser Pro Arg Gly Lys Phe Ser Ala Ala Ala Ser
 20 25 30
 Tyr Gln Ile Leu Glu Lys Arg Leu Pro Arg Pro Ala Leu Arg Leu Phe
 35 40 45
 Ser Leu Arg Thr Leu Ser Ala Val Ala Ala Ile Ala Leu Leu Cys Phe
 50 55 60
 Ile Gly Trp Asn Thr Tyr Cys Tyr Leu Lys Pro Ala Ala Leu Gln Thr
 65 70 75 80
 Ile Ser Thr Leu Ala Asp Thr Arg Thr Ile Lys Leu Pro Asp Gly Thr
 85 90 95
 Glu Val Thr Leu Asn His Phe Ser Ser Leu Thr Tyr Pro Glu Lys Phe
 100 105 110
 Lys Gly Glu His Arg Glu Val Asn Leu Lys Gly Glu Ala Tyr Phe Glu
 115 120 125
 Val Thr Lys Asn Arg Lys His Ser Phe Ile Val Gln Thr Glu Ser Val
 130 135 140
 Asn Val Glu Val Leu Gly Thr His Phe Asn Val Glu Ser Tyr Pro Asp
 145 150 155 160
 Asp Pro Glu Val Lys Thr Thr Leu Leu Glu Gly Ser Val Ala Val Ser
 165 170 175
 Asn Lys Ser Asn Ser Val Arg Ile Val Leu Lys Pro Asn Glu Ser Ala
 180 185 190
 Ile Tyr Asn Lys Glu Lys Lys Ser Met Thr Leu Glu Val Ser Asp Arg
 195 200 205
 Val Ala Glu Glu Ile Ala Trp Arg Asn Gly Glu Leu Ile Phe Thr Asn
 210 215 220
 Leu Pro Leu Gln Glu Ile Ala Arg Gln Leu Ser Asn Thr Phe Gly Val
 225 230 235 240
 Asp Ile Ser Ile Thr Asp Thr Ala Leu Gln Asn Tyr Arg Ile Thr Ala
 245 250 255
 Arg Phe Ser Ser Glu Glu Gly Leu Asp Gln Ile Leu Asp Leu Leu His
 260 265 270
 Thr Val Gly Asn Phe Asn Tyr Ser Tyr Asn Asn Lys Glu Ile Thr Ile
 275 280 285
 Thr Thr Lys Leu Asn
 290

<210> 9010
 <211> 369
 <212> PRT

<213> B.fragilis

<400> 9010

Arg Arg Glu Tyr Arg Asn Asn Pro Val Tyr Cys Leu Ile Phe Val Pro
 1 5 10 15
 Met Lys Arg Ile Arg Ala Ile Tyr Asn Asp Lys Tyr Leu Leu Ser Thr
 20 25 30
 Leu Ile Ile Ser Leu Ala Val Ala Val Leu Ile His Phe Pro Glu Ser
 35 40 45
 Val Ser Leu Phe Asp Gly Phe Glu Ser His Thr Leu Phe Pro Gly Met
 50 55 60
 Lys Phe Ala Asp Val Ala Asn Glu Ile Leu Phe Thr Phe Leu Ser Leu
 65 70 75 80
 Leu Ile Leu Phe Ala Val Asn Thr Arg Leu Phe His Phe Asn Gln Thr
 85 90 95
 Ser Met Lys Ile Thr Trp Gln Lys Ile Ile Leu Ser Phe Val Leu Thr
 100 105 110
 Trp Ile Leu Ser Asn Phe Leu Gly Gln Cys Phe Val Tyr Leu His Lys
 115 120 125
 Thr Phe Asp Ile Pro Ala Ile Asp Ala Met Val His His Tyr Leu His
 130 135 140
 Pro Leu Arg Asp Phe Ile Met Ser Ser Leu Val Thr Ser Ser Cys Tyr
 145 150 155 160
 Ile Ile Tyr Leu Ile Arg Arg Gln Gln Gln Val Ile Val Glu Asn Glu
 165 170 175
 Gln Leu Lys Ala Glu Asn Ile Arg Asn Gln Phe Glu Val Leu Lys Asn
 180 185 190
 Gln Leu Asn Pro His Met Leu Phe Asn Ser Leu Asn Thr Leu Arg Ser
 195 200 205
 Leu Val Arg Glu Asn Gln Asp Arg Ala Gln Asp Tyr Ile Gln Glu Leu
 210 215 220
 Ser Arg Val Leu Arg Tyr Thr Leu Gln Gly Asn Glu Ser Gln Cys Val
 225 230 235 240
 Thr Leu Arg Glu Glu Met Asp Phe Val Ser Ala Tyr Ile Phe Leu Leu
 245 250 255
 Lys Met Arg Phe Glu Asp Asn Leu Arg Phe Glu Ile Asn Ile Thr His
 260 265 270
 Asn Ser Glu Glu Tyr Leu Leu Pro Pro Met Ser Ile Gln Met Leu Ile
 275 280 285
 Glu Asn Ala Val Lys His Asn Glu Ile Ser Asn Arg Arg Pro Leu Thr
 290 295 300
 Ile Thr Ile Ala Thr Asp Ser Glu Glu Gly Leu Leu Val Ser Asn Pro
 305 310 315 320
 Ile Gln Ser Lys Leu Thr Ala Thr Thr Gly Thr Gly Ile Gly Leu Val
 325 330 335
 Asn Leu Asp Lys Arg Tyr Arg Leu Leu Phe Arg Gln Glu Ile Gln Ile
 340 345 350
 Thr Glu Asp Arg Asn Phe Thr Val Arg Ile Pro Leu Ile Arg Lys Asp
 355 360 365
 Leu

<210> 9011

<211> 465

<212> PRT

<213> B.fragilis

<400> 9011

Ile Asp Leu Tyr Leu Cys Thr Leu Lys Ile Ile Gly Met Thr Gly Gln

1	5	10	15
Lys Thr Pro Thr Ala Leu Gly Thr Glu Lys Ile Gly Lys Leu Leu Met			
	20	25	30
Gln Tyr Ala Ile Pro Ala Ile Ile Ala Met Thr Ala Ser Ser Leu Tyr			
	35	40	45
Asn Met Val Asp Ser Ile Phe Ile Gly His Gly Val Gly Pro Met Ala			
	50	55	60
Ile Ser Gly Leu Ala Leu Thr Phe Pro Leu Met Asn Leu Ala Ala Ala			
65	70	75	80
Phe Gly Ser Leu Val Gly Val Gly Ala Ala Thr Leu Val Ser Val Lys			
	85	90	95
Leu Gly Gln Lys Asp Tyr Asp Thr Ala Gln Arg Val Leu Gly Asn Val			
	100	105	110
Leu Val Leu Asn Ile Ile Ile Gly Leu Ala Phe Thr Ile Leu Thr Leu			
	115	120	125
Ile Phe Leu Asp Pro Ile Leu Tyr Phe Phe Gly Gly Ser Asp Glu Thr			
	130	135	140
Val Gly Tyr Ala Arg Asp Tyr Met Lys Val Ile Leu Tyr Gly Asn Val			
145	150	155	160
Ile Thr His Leu Tyr Leu Gly Leu Asn Ala Val Leu Arg Ser Ala Gly			
	165	170	175
His Pro Gln Lys Ala Met Tyr Ala Thr Ile Ala Thr Val Val Ile Asn			
	180	185	190
Thr Ile Leu Asp Pro Leu Phe Ile Tyr Gly Phe Gly Trp Gly Ile Gln			
	195	200	205
Gly Ala Ala Ile Ala Thr Ile Leu Ala Gln Val Ile Ser Leu Met Trp			
	210	215	220
Gln Phe Arg Leu Phe Ser Asn Lys Glu Glu Leu Leu His Phe His Arg			
225	230	235	240
Gly Ile Phe Arg Leu Lys Arg Lys Ile Val Phe Asp Ser Leu Ala Ile			
	245	250	255
Gly Met Ala Pro Phe Leu Met Asn Leu Ala Ser Cys Phe Ile Val Ile			
	260	265	270
Leu Ile Asn Gln Gly Leu Lys Lys Tyr Gly Gly Asp Leu Ala Ile Gly			
	275	280	285
Ala Phe Gly Ile Val Asn Arg Leu Val Phe Leu Phe Val Met Ile Val			
	290	295	300
Met Gly Leu Asn Gln Gly Met Gln Pro Ile Ala Gly Tyr Asn Phe Gly			
305	310	315	320
Ala Arg Leu Tyr Pro Arg Val Thr Arg Val Leu Lys Leu Thr Ile Tyr			
	325	330	335
Gly Ala Thr Ile Val Thr Thr Thr Gly Phe Leu Met Gly Met Leu Ile			
	340	345	350
Pro Gly Leu Ala Val Ser Ile Phe Thr Ser His Glu Glu Leu Ile Arg			
	355	360	365
Gln Ser Ala Glu Gly Leu Arg Ile Val Val Leu Phe Phe Pro Ile Val			
	370	375	380
Gly Phe Gln Met Val Thr Ser Asn Phe Phe Gln Ser Ile Gly Met Ala			
385	390	395	400
Ser Lys Ala Ile Phe Leu Ser Ile Thr Arg Gln Val Leu Ile Leu Ile			
	405	410	415
Pro Cys Leu Leu Ile Leu Pro Arg Tyr Phe Gly Gln Thr Gly Val Trp			
	420	425	430
Val Ser Met Pro Val Ser Asp Leu Ile Ala Ser Leu Ile Ser Ala Gly			
	435	440	445
Met Leu Trp Trp Gln Phe Arg Leu Phe Arg Ile His Gly Arg Gln Ala			
	450	455	460
Ala			
465			

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<210> 9012
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 9012

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Asn Pro Tyr Leu Cys Arg Lys Ile Thr Asn Cys Met Asn Ile Tyr Thr
1      5      10      15
Glu Asp Glu Ala Leu Ile Glu Leu Leu Glu Glu Gly Cys Thr Asn Asp
      20      25      30
Lys Arg Tyr Lys Arg Leu Pro Lys Asp Val Ile Lys Gly Tyr Ile Lys
      35      40      45
Ala Tyr Asn His Leu Lys Ala Ala Thr Arg Ile Glu Asp Leu Phe Arg
      50      55      60
Ile Gly Ser Leu His Tyr Glu Arg Leu Lys Gly Asp Leu Lys Asp Phe
      65      70      75      80
Glu Ser Val Arg Cys Thr Gly Arg Trp Arg Leu Ile Phe Gln Ser Ser
      85      90      95
Thr Ile Asp Gly Ser Leu Ile Ile Thr Glu Ile Glu Leu Ile Glu Ile
      100      105      110
Ser Asn His Tyr Gly Asp
      115

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<210> 9013
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 <212> PRT
 <213> B.fragilis

<400> 9013

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Pro Gly Cys Gln Phe Phe Ser Asp Leu Phe Ser Ala Thr Ala Gln Leu
1      5      10      15
Thr Ala Asp Ile Asp Asp Ile Ile Thr Ile His Ser Thr Phe Val Tyr
      20      25      30
Trp Phe Asn Ser Lys His Thr His Tyr Phe Arg Lys Lys Lys Ile Asn
      35      40      45
Asn Val Pro Ile Tyr Arg Val Pro His Phe Leu Ser Ile Gly Asn Phe
      50      55      60
Tyr Pro Phe Ser Glu Ser Tyr Leu Cys Ser Arg Lys Lys Ile Asn Ile
      65      70      75      80
Val Phe Met Lys Asp Ser Ile Asp Phe Gly Asn Met Glu Ile Pro Arg
      85      90      95
Leu Phe Arg Lys Leu Leu Ile Pro Thr Val Leu Gly Met Val Phe Ser
      100      105      110
Ala Val Phe Val Ile Thr Asp Gly Ile Phe Val Gly Lys Gly Ile Gly
      115      120      125
Ser Asp Ala Leu Ala Ala Val Asn Ile Thr Ala Pro Leu Phe Met Ile
      130      135      140
Thr Thr Gly Ile Gly Leu Met Phe Gly Val Gly Ala Ser Val Val Ala
      145      150      155      160
Ser Ile His Leu Ser Gln Gly Lys Arg Lys Val Ala Ser Ile Asn Ile
      165      170      175
Thr Gln Ala Leu Ala Phe Ser Ala Leu Leu Ile Leu Val Leu Ser Ala
      180      185      190
Leu Cys Cys Tyr Phe Ala Glu Pro Ile Gly Arg Leu Leu Gly Ser Ser
      195      200      205
Glu Arg Leu Leu Pro Leu Val Val Glu Tyr Met Asn Trp Tyr Val Pro
      210      215      220
Phe Leu Val Phe Tyr Leu Leu Leu Ser Ala Gly Met Phe Tyr Ile Arg

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225 230 235 240
 Leu Asp Gly Ser Pro Asn Tyr Ala Met Met Cys Asn Ala Val Ser Ala
 245 250 255
 Ile Ile Asn Ile Ile Leu Asp Tyr Val Phe Ile Phe Gln Leu Gly Trp
 260 265 270
 Gly Met Met Gly Ala Ala Phe Ala Thr Ser Leu Gly Thr Met Val Gly
 275 280 285
 Gly Leu Met Thr Leu Ile Tyr Leu Leu Arg Phe Ser Arg Asn Val Gly
 290 295 300
 Ile Tyr Arg Ile Lys Leu Ser Arg Lys Ser Met Arg Leu Thr Cys Arg
 305 310 315 320
 Asn Ile Gly Tyr Met Ile Arg Leu Gly Ser Ser Ala Phe Ile Ser Glu
 325 330 335
 Ala Ser Ile Ala Ser Met Met Phe Leu Gly Asn Tyr Val Phe Ile Ser
 340 345 350
 His Leu Gly Glu Ser Gly Val Ala Ala Phe Ser Ile Val Cys Tyr Phe
 355 360 365
 Phe Pro Ile Ile Phe Met Val Tyr Asn Ala Ile Ala Gln Ser Ala Gln
 370 375 380
 Pro Ile Ile Ser Tyr Asn Phe Gly Gln Gln Asn Pro Gly Arg Val Ala
 385 390 395 400
 Arg Thr Ile Arg Leu Ala Leu Lys Thr Ala Leu Gly Cys Gly Ile Phe
 405 410 415
 Phe Phe Ala Ala Thr Leu Val Phe Asn His Gln Ile Val Gly Leu Phe
 420 425 430
 Ile Asp Lys Ser Tyr Gln Ala Tyr Asp Ile Ala Val Asn Gly Ile Pro
 435 440 445
 Tyr Phe Ala Val Gly Tyr Leu Phe Phe Ala Leu Asn Ile Val Gly Ile
 450 455 460
 Gly Tyr Tyr Gln Ser Ile Glu Arg Ala Arg Arg Ala Thr Val Ile Thr
 465 470 475 480
 Leu Phe Arg Gly Thr Leu Phe Met Leu Ala Gly Phe Leu Leu Leu Pro
 485 490 495
 Pro Val Leu Gly Val Arg Gly Ile Trp Leu Ala Val Pro Leu Gly Glu
 500 505 510
 Leu Leu Thr Leu Leu Ile Ile Gly Ile Tyr Leu Lys Asp Ser Phe
 515 520 525
 Ala Val Arg Arg
 530

<210> 9014

<211> 169

<212> PRT

<213> B.fragilis

<400> 9014

Pro Phe Ile Gln Ser Thr Met Gly Leu Ile Tyr Leu Val Arg Lys Lys
 1 5 10 15
 Lys Phe Arg Thr Ala Glu Gly Ile Arg Glu Leu Tyr Phe Ala Ile Gln
 20 25 30
 Arg Lys Leu Gln Lys Arg Gly Gly Lys Asn Glu Glu Asp Leu Ala Glu
 35 40 45
 Ile Leu Ser Ala Asn Ser Ser Arg Ser Lys Gly Glu Val Leu Ser Ile
 50 55 60
 Leu Thr Asp Leu Pro Asp Val Ile Glu Glu Ile Leu Lys Asn Gly Glu
 65 70 75 80
 Ser Val Ser Ile Arg Gly Leu Gly Ser Phe His Ala Ser Ile Thr Ser
 85 90 95
 Asn Gly Phe Glu His Pro Glu Asp Val Leu Pro His Glu Val Arg Val

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<210> 9015
<211> 145
<212> PRT
<213> B.fragilis
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<210> 9016
<211> 240
<212> PRT
<213> B.fragilis
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<400> 9016																
Glu	Met	Arg	His	Ser	Val	Tyr	Trp	Tyr	Ile	Ile	Tyr	Phe	Leu	Leu	Ser	
1				5					10					15		
Glu	Ile	Met	Cys	Met	Phe	Ala	Ile	Glu	Pro	Ile	Tyr	Lys	Ser	Thr	Met	
			20					25					30			
Asn	Gly	Asn	Tyr	Val	Ile	Asn	Ile	Gly	Arg	Gln	Leu	Gly	Ser	Gly	Gly	
			35				40					45				
Lys	Glu	Ile	Gly	Glu	Lys	Leu	Ala	Ala	Arg	Leu	Gly	Ile	Asp	Phe	Tyr	
	50					55					60					
Asp	Lys	Glu	Leu	Ile	Asn	Leu	Ala	Ser	Glu	Glu	Ser	Gly	Leu	Cys	Arg	
65					70					75					80	
Glu	Phe	Phe	Glu	Lys	Ala	Asp	Glu	Lys	Ala	Ser	Gln	Gly	Ile	Ile	Gly	
				85					90					95		
Gly	Leu	Phe	Gly	Met	Arg	Phe	Pro	Phe	Ile	Ser	Asp	Gly	Ala	Met	Pro	
			100					105					110			
Cys	Thr	Asn	Cys	Leu	Ser	Asn	Asp	Ala	Leu	Phe	Lys	Ile	Gln	Ser	Asp	
			115				120					125				

Val	Ile	Arg	His	Leu	Ala	Ala	Asn	Lys	Ser	Cys	Val	Phe	Val	Gly	Arg
130						135					140				
Cys	Ala	Asp	Tyr	Ile	Leu	Arg	Glu	His	Pro	Arg	Cys	Ala	Asn	Ile	Phe
145					150					155					160
Ile	Ser	Ala	Ser	Gln	Glu	Asp	Arg	Ile	Ala	Arg	Leu	Cys	Arg	Ile	His
				165					170					175	
Gly	Ile	Ser	Glu	Glu	Ala	Ala	Ala	Glu	Lys	Met	Asn	Lys	Ala	Asp	Lys
			180					185					190		
Lys	Arg	Ser	Glu	Tyr	Tyr	Asn	Tyr	Tyr	Ser	Tyr	Lys	Thr	Trp	Gly	Ala
		195					200					205			
Ala	Ala	Thr	Tyr	His	Leu	Cys	Ile	Asp	Ser	Ser	Val	Leu	Gly	Ile	Asp
		210				215					220				
Glu	Thr	Val	Arg	Phe	Ile	Glu	Glu	Phe	Val	Val	Lys	Lys	Leu	Ala	Leu
225					230					235					240

<210> 9017

<211> 779

<212> PRT

<213> B.fragilis

<400> 9017

Tyr	His	Ile	Lys	Asn	Asn	Pro	Ile	Phe	Ile	Pro	Met	Thr	Lys	Pro	Ser
1				5					10					15	
Tyr	Lys	Gln	Trp	Ile	Ala	Ala	Cys	Thr	Leu	Thr	Ser	Thr	Leu	Leu	Leu
			20					25					30		
Gly	Ala	Cys	Gly	Ser	Ala	Pro	Val	Thr	Arg	Asp	Ala	Ser	Ile	Val	Pro
		35					40					45			
Leu	Pro	Asn	Gln	Ile	Gln	Gln	Ser	Gly	Asn	Ala	Phe	Val	Leu	Thr	Pro
	50					55					60				
Asn	Thr	Thr	Ile	Gly	Thr	Thr	Asp	Pro	Glu	Leu	Gln	Pro	Ala	Ala	Gln
65				70					75						80
Tyr	Leu	Lys	Glu	Ile	Leu	Ser	Ala	Ala	Thr	Gly	Tyr	Asp	Leu	Gln	Val
			85						90					95	
Lys	Glu	Gly	Lys	Gly	Thr	Ile	Thr	Leu	Ala	Lys	Ala	Asn	Ile	Glu	Gly
			100					105					110		
Lys	Glu	Gly	Ala	Tyr	Thr	Leu	Ser	Ala	Lys	Ser	Asp	Arg	Ile	Asp	Ile
		115					120					125			
Thr	Gly	Asn	Ser	Tyr	Gly	Gly	Val	Ile	Ala	Gly	Ile	Glu	Ser	Leu	Arg
		130				135					140				
Gln	Leu	Phe	Pro	Pro	Gln	Ile	Glu	Ser	Lys	Gln	Ile	Val	Asp	Ser	Val
145					150					155					160
Ala	Trp	Ala	Ile	Pro	Thr	Ala	Glu	Ile	Gln	Asp	Ala	Pro	Arg	Phe	Glu
				165					170					175	
Trp	Arg	Gly	Ile	Met	Leu	Asp	Val	Ser	Arg	His	Phe	Tyr	Thr	Lys	Glu
			180					185					190		
Glu	Val	Lys	Glu	Leu	Leu	Asp	Leu	Met	Ala	Leu	Tyr	Lys	Met	Asn	Lys
		195					200					205			
Phe	His	Trp	His	Leu	Thr	Asp	Asp	Gln	Gly	Trp	Arg	Ile	Glu	Ile	Lys
	210					215					220				
Lys	Tyr	Pro	Leu	Leu	Thr	Glu	Lys	Gly	Ala	Trp	Arg	Thr	Phe	Asn	Ser
225					230					235					240
His	Asp	Arg	Ser	Cys	Met	Lys	Ser	Ala	Lys	Ser	Glu	Asp	Asn	Pro	Asp
				245					250					255	
Phe	Leu	Ile	Pro	Glu	Asn	Lys	Leu	Arg	Ile	Ile	Glu	Gly	Asp	Thr	Leu
			260					265					270		
Tyr	Gly	Gly	Tyr	Tyr	Thr	Gln	Glu	Asp	Ile	Lys	Glu	Val	Ile	Glu	Tyr
		275				280						285			
Ala	Lys	Val	Arg	Gly	Ile	Asp	Ile	Ile	Pro	Glu	Ile	Asp	Met	Pro	Gly
	290					295					300				

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His Met Leu Ala Ala Val Ser Asn Tyr Ser Gly Val Ala Cys Thr Asp
 305 310 315 320
 Lys Val Gly Trp Gly Thr Thr Phe Ser Ser Pro Val Cys Pro Gly Lys
 325 330 335
 Glu Ser Ala Met Glu Phe Cys Lys Asn Val Tyr Ser Glu Leu Ile Asp
 340 345 350
 Leu Phe Pro Tyr Lys Tyr Val His Ile Gly Gly Asp Glu Val Glu Lys
 355 360 365
 Ala Asn Trp Lys Lys Cys Pro Asp Cys Gln Lys Arg Met Arg Asp Asn
 370 375 380
 His Leu Lys Thr Glu Glu Glu Leu Gln Ser Trp Phe Ile His Asp Met
 385 390 395 400
 Glu Lys Phe Phe Asn Ala Lys Gly Lys Glu Met Ile Gly Trp Asp Glu
 405 410 415
 Ile Ile Glu Gly Gly Leu Ser Pro Thr Ala Thr Val Met Trp Trp Arg
 420 425 430
 Ser Trp Ala Lys Asp Ala Pro Ala Lys Thr Thr Gln Gln Gly Asn Ser
 435 440 445
 Ile Ile Phe Thr Pro Asn Gly Gln Phe Tyr Leu Asp Tyr Gln Glu Asp
 450 455 460
 Lys Asn Ser Val Arg Asn Ile Tyr Asn Phe Asn Pro Ala Ile Glu Gly
 465 470 475 480
 Leu Thr Ser Glu Gln Ala Leu Val Lys Gly Val Gln Gly Asn Ile
 485 490 495
 Trp Cys Glu Trp Ile Pro Ser Arg Glu Arg Met Gln Tyr Met Ala Val
 500 505 510
 Pro Arg Leu Leu Ala Ile Ala Glu Leu Gly Trp Ser Gln Pro Ser Gln
 515 520 525
 Lys Asn Trp Asn Asp Phe Ala Gln Arg Met Ala Asn Gln Phe Glu Arg
 530 535 540
 Leu Asn Ile Met Gly Ile Asn Tyr Arg Ile Pro Asp Leu Glu Gly Phe
 545 550 555 560
 His Arg Asn Asn Ala Phe Ile Gly Glu Gly Thr Val Lys Val Thr Cys
 565 570 575
 Leu Asp Pro Asn Ala Glu Ile His Tyr Thr Thr Asp Gly Ser Thr Pro
 580 585 590
 Thr Leu Gln Ser Pro Lys Tyr Glu Gly Pro Ile Gln Val Lys Glu Thr
 595 600 605
 Thr Asp Phe Thr Phe Arg Thr Phe Arg Pro Asn Gly Lys Ala Gly Asp
 610 615 620
 Ile Ser Arg Thr Arg Phe Ile Lys Ser Glu Tyr Ala Pro Ala Thr Thr
 625 630 635 640
 Val Thr Pro Ser Ala Lys Gly Leu Gln Ala Glu Trp Tyr Glu Phe Lys
 645 650 655
 Gly Asn Lys Cys Ala Asp Ile Thr Lys Ala Pro Leu Asn Gly Thr Tyr
 660 665 670
 Pro Ile Glu Lys Val Met Ile Pro Glu Lys Ala Lys Gly Asn Ile Gly
 675 680 685
 Leu Val Ile Lys Gly Phe Ile Asn Val Pro Lys Asp Ile Tyr Thr
 690 695 700
 Phe Ala Leu Leu Ser Asp Gly Ser Thr Leu Val Ile Asp Gly Glu
 705 710 715 720
 Gln Val Ile Asp Asn Asp Gly Pro His Gly Pro Arg Glu Val Ile Gly
 725 730 735
 Gln Lys Ala Leu Ser Lys Gly Tyr His Pro Ile Glu Val Arg Tyr Phe
 740 745 750
 Asp Gln Asn Gly Gly Gln Leu Lys Met Thr Val Thr Gly Thr Glu Gly
 755 760 765
 Asn Glu Ile Pro Thr Ser Asp Leu Tyr Ala Asn

770

775

<210> 9018
 <211> 580
 <212> PRT
 <213> B.fragilis

<400> 9018

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Leu Thr Pro Lys Gly Phe Leu Ile Arg Lys Phe Ile Pro Thr Phe Ala
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Gln Ile Phe Lys Lys Arg Ala Met Ile Lys Glu Asn Phe Ile Lys Leu
20     25     30
Tyr Glu Asn Ser Phe Arg Glu Asn Trp Asp Leu Pro Cys Tyr Thr Asn
35     40     45
Tyr Gly Glu Pro Glu Ser Tyr Thr Tyr Gly Glu Val Ala Glu Glu Ile
50     55     60
Ala Lys Leu His Leu Leu Phe Lys His Cys Ser Leu Arg Arg Gly Asp
65     70     75     80
Lys Ile Ala Val Ile Gly Lys Asn Asn Ala Arg Trp Cys Ile Ala Tyr
85     90     95
Met Ala Thr Ile Thr Tyr Gly Ala Ile Ile Val Pro Ile Leu Gln Asp
100    105    110
Phe Asn Pro Asn Asp Val His His Ile Val Asn His Ser Glu Ser Val
115    120    125
Phe Leu Phe Thr Ser Asp Thr Ile Trp Glu Asn Leu Glu Glu Glu Arg
130    135    140
Leu Thr Gly Ile Arg Ala Val Phe Ser Leu Thr Asp Phe Arg Cys Leu
145    150    155    160
His Gln Arg Asp Gly Glu Thr Val Gln Lys Phe Leu Lys His Ile Asp
165    170    175
Gln Tyr Met Thr Asp Thr Tyr Pro Lys Gly Phe Arg Lys Glu Asp Val
180    185    190
Leu Tyr Thr Thr Leu Ser Asn Asp Lys Val Met Leu Leu Asn Tyr Thr
195    200    205
Ser Gly Thr Thr Gly Phe Ser Lys Gly Val Met Leu Thr Gly Asn Asn
210    215    220
Leu Ala Gly Asn Val Thr Phe Gly Ile Arg Thr Glu Leu Leu Lys Lys
225    230    235    240
Gly Asp Lys Val Leu Ser Phe Leu Pro Leu Ala His Ala Tyr Gly Cys
245    250    255
Ala Phe Asp Phe Leu Thr Ala Thr Ala Val Gly Thr His Val Thr Leu
260    265    270
Leu Gly Lys Val Pro Ser Pro Lys Ile Ile Met Lys Ala Phe Glu Glu
275    280    285
Val Lys Pro Asn Leu Ile Ile Thr Val Pro Leu Val Ile Glu Lys Ile
290    295    300
Tyr Lys Asn Val Ile Gln Pro Ile Ile Ser Lys Lys Gly Met Lys Trp
305    310    315    320
Ala Leu Ser Ile Pro Leu Leu Asp Asn Gln Ile Tyr Gly Gln Ile Arg
325    330    335
Lys Lys Leu Ile Asp Ala Leu Gly Gly Arg Phe Lys Glu Ile Ile Ile
340    345    350
Gly Gly Ala Ala Met Asn Pro Glu Val Glu Glu Phe Phe His Lys Ile
355    360    365
Lys Phe Pro Phe Thr Ile Gly Tyr Gly Met Thr Glu Cys Gly Pro Leu
370    375    380
Ile Ser Tyr Ala Pro Trp Asp Lys Phe Val Pro Ser Ser Ser Gly Lys
385    390    395    400
Ile Leu Asp Ile Met Glu Ala Arg Ile Tyr Lys Glu Asn Pro Glu Ala

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				405					410					415			
Glu	Thr	Gly	Glu	Ile	Gln	Val	Arg	Gly	Glu	Asn	Val	Met	Thr	Gly	Tyr		
			420					425					430				
Tyr	Lys	Asn	Pro	Glu	Ala	Thr	Gln	Glu	Val	Phe	Thr	Lys	Asp	Gly	Trp		
		435					440					445					
Leu	Arg	Thr	Gly	Asp	Leu	Gly	Thr	Met	Asp	Asp	Glu	Gly	Asn	Ile	Phe		
	450				455						460						
Ile	Arg	Gly	Arg	Leu	Lys	Thr	Met	Ile	Leu	Ser	Ser	Ser	Gly	Gln	Asn		
465				470						475					480		
Ile	Phe	Pro	Glu	Glu	Ile	Glu	Ala	Lys	Leu	Asn	Asn	Leu	Pro	Phe	Ile		
			485					490					495				
Leu	Glu	Ser	Leu	Val	Ile	Glu	Arg	Asn	Lys	Lys	Leu	Val	Ala	Leu	Val		
		500						505					510				
Tyr	Ala	Asp	Tyr	Glu	Ala	Leu	Asp	Ser	Leu	Gly	Leu	Asn	His	Glu	Asp		
	515						520					525					
Asn	Leu	Lys	Thr	Ile	Met	Asp	Glu	Asn	Leu	Lys	Asn	Leu	Asn	Asn	Asn		
	530				535						540						
Val	Ala	Ala	Tyr	Glu	Lys	Val	Ser	Gln	Ile	Gln	Leu	Tyr	Pro	Thr	Glu		
545				550						555					560		
Phe	Glu	Lys	Thr	Pro	Lys	Arg	Ser	Ile	Lys	Arg	Tyr	Leu	Tyr	Asn	Ser		
			565						570					575			
Ile	Ala	Glu	Asp														
		580															

<210> 9019
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9019																	
Leu	Glu	Tyr	Asn	Asn	Leu	Leu	Lys	Tyr	Thr	His	Met	Lys	Gly	Leu	Leu		
1			5						10				15				
Lys	Asn	Leu	Gly	Leu	Leu	Leu	Ile	Leu	Val	Gly	Val	Ile	Ile	Leu	Ile		
		20					25						30				
Ala	Cys	Ser	Leu	Thr	Gly	Glu	Val	Asn	Asn	Asn	Ala	Val	Leu	Gly	Gly		
		35				40						45					
Ser	Ile	Val	Leu	Val	Val	Leu	Gly	Leu	Ile	Thr	Tyr	Ile	Ala	Ile	Asn		
	50				55					60							
Lys	Arg	Ile	Ala	Asp													
65																	

<210> 9020
 <211> 477
 <212> PRT
 <213> B.fragilis

<400> 9020																	
Asn	Thr	Asn	Lys	Met	Lys	Lys	Leu	Leu	Leu	Ile	Leu	Leu	Leu	Val	Leu		
1			5						10					15			
Ala	Gly	Glu	Ile	Ser	Ala	Gln	Gln	Ala	Ala	Thr	Ile	Val	Val	Lys	Thr		
		20					25						30				
Thr	Pro	Asp	Asn	Glu	Ile	Ala	Tyr	Trp	Pro	Thr	Gly	Lys	Glu	His	Leu		
		35				40						45					
Phe	Cys	Ile	Ala	Leu	Gly	Thr	Lys	Ala	Gln	Ala	Gly	Pro	Leu	Gly	Glu		
	50				55						60						
Phe	Val	His	Gln	Phe	Arg	Thr	Asp	Arg	Pro	Gly	Met	Val	Gln	Val	Trp		
65				70					75					80			
Thr	Gln	Gly	Ser	Asp	Ser	Phe	Thr	Leu	Tyr	Leu	Thr	Pro	Gly	Ser	Lys		
			85					90						95			

Asp Thr Ile Thr Val Thr Lys Asp Thr Leu Ile Ile Ser Gly Thr Asn
 100 105 110
 Ser Ala Tyr Asn Arg Cys Leu Lys Thr Val Asn Asp Tyr Gln Lys Tyr
 115 120 125
 Ser Asp Lys Leu Val Tyr Met Gln Pro His Glu Leu Arg Gly Ile Thr
 130 135 140
 Ser Leu Glu Gln Tyr His Arg Leu Ala Asp Ala Arg Met Arg Gln Ala
 145 150 155 160
 Leu Asp Ala Val Asn Thr Ser Gly Leu Asn Glu Glu Phe Leu Ala Glu
 165 170 175
 Gln Arg Ala His Ile Asp Tyr Ile Arg Arg Ser Ile Phe Ile His Ile
 180 185 190
 Ala Arg Gln Leu Ser Arg Lys Glu Lys Leu Pro Glu Asp Trp Gln Arg
 195 200 205
 Glu Leu Thr Glu Val Ile Asn Ser Ser Val Asn Gly Asp Tyr Leu Arg
 210 215 220
 Ser Tyr Arg Gly Ile Gly Phe Phe Val Asn Asp Leu Val Met Met Gln
 225 230 235 240
 Phe Thr Asn Leu Glu Asn Gly Asp Leu Lys Glu Ile Lys Asp Tyr Ala
 245 250 255
 Ser Phe Leu Phe Asp Arg Tyr Arg Lys Phe Phe Thr Gly Asp Asn Leu
 260 265 270
 Gln Tyr Met Gln Ala Gln Leu Ile Tyr Glu Asp Glu Phe Gln Gly Ser
 275 280 285
 Lys Thr Pro Ser Ile Pro Gln Leu Tyr Glu Thr Tyr Arg Ala Glu Phe
 290 295 300
 Pro Asn Ser Pro Phe Leu Asn Val Leu Glu Pro Gly Val Lys Glu Asn
 305 310 315 320
 Leu Arg Phe Gln Asn Ser Arg Ile Thr Asp Lys Asp Tyr His Ile Leu
 325 330 335
 Thr Cys Asp Ser Thr Ile Thr Ser Leu Glu Asp Ala Val Lys Pro Phe
 340 345 350
 Lys Gly Lys Val Val Tyr Ile Asp Val Trp Ala Thr Trp Cys Gly Pro
 355 360 365
 Cys Leu Lys Glu Phe Gln Tyr Leu Pro Ala Leu Lys Glu Lys Ala His
 370 375 380
 Asn Met Asp Val Val Tyr Leu Tyr Ile Ser Ile Asp Arg Pro Glu Glu
 385 390 395 400
 Arg Lys Lys Trp Glu Lys Thr Ile Ala Tyr His Gln Leu Lys Gly Tyr
 405 410 415
 His Leu Leu Val Asn Glu Lys Leu Gly Lys Ser Leu Tyr Thr Glu Leu
 420 425 430
 Gly Asn Glu Arg Gln Ile Leu Ser Ile Pro Cys Phe Val Ile Ile Asp
 435 440 445
 Lys Thr Gly Lys Ile Val Ile Arg His Ala Ala Ala Pro Ser Glu Pro
 450 455 460
 Glu Lys Val Ile Glu Gln Leu Ser Thr Tyr Tyr Asn Lys
 465 470 475

<210> 9021

<211> 423

<212> PRT

<213> B.fragilis

<400> 9021

Lys Ser Asn Lys Lys Asn Pro Phe Thr Leu Ser Arg Phe Arg Asn Ser
 1 5 10 15
 Val Cys Leu Phe Met Lys Arg Arg Lys Met Glu Lys Asn His Tyr Ile
 20 25 30

His Tyr Thr Ala Ala Asp Leu Leu Asn Asp Gly Thr Phe Leu Asp Ser
 35 40 45
 Met Gln His Pro Thr Glu Gln Ser Glu Lys Phe Trp Ser Gln Leu Glu
 50 55 60
 Lys Glu Asn Glu Thr Phe Ala Gly Glu Leu Arg Met Ala Arg Ser Phe
 65 70 75 80
 Leu Met Ala Val Ala Glu Ser Pro Gln Lys Arg Met Thr Asp Asp Glu
 85 90 95
 Val Gly Thr Leu Trp Glu Arg Ile Ser Arg Gln Val Ala Met Glu Lys
 100 105 110
 Arg Val Lys Arg Lys Lys Gln Leu Leu Phe Leu Arg Val Ala Gly Ile
 115 120 125
 Ala Ala Cys Ile Ser Val Leu Ala Leu Ser Ser Tyr Phe Val Phe Ser
 130 135 140
 Leu Ile Ser Phe Tyr Glu Glu Ser Ser Cys Tyr Ser Leu Ala Gly Ile
 145 150 155 160
 Ser Glu Pro Asp Ser Ser Asn Asp Ile Gln Leu Ile Leu Ser Glu Gly
 165 170 175
 Arg Lys Leu Val Met Asp Gly Lys Glu Ser Arg Leu His Tyr Lys Glu
 180 185 190
 Gly Gly Lys Ile Ala Ile Ser Ser Gly Lys Thr Gln Leu Asp Glu Glu
 195 200 205
 Asn Glu Thr Gly Tyr Asn Gln Leu Ile Val Pro Ser Gly Lys Arg Ser
 210 215 220
 Phe Ile Thr Phe Ser Asp Gly Thr Arg Val Ala Val Asn Ala Asn Thr
 225 230 235 240
 Arg Ile Val Tyr Pro Ser Glu Phe Ser Gly His Lys Arg Glu Ile Tyr
 245 250 255
 Val Asn Gly Glu Val Tyr Leu Gln Val Ser Pro Asp Lys Lys His Pro
 260 265 270
 Phe Val Val Lys Thr Asn Arg Met Glu Val Glu Val Leu Gly Thr Glu
 275 280 285
 Phe Asn Val Ser Ala Tyr Asp Phe Thr Lys Asn Gln Ser Val Val Leu
 290 295 300
 Val Ser Gly Lys Val Glu Val Asp Thr Tyr Lys Tyr Pro Lys Lys Val
 305 310 315 320
 Leu Lys Pro Asn Asp Met Leu Thr Tyr Asp Gly Gln Asp Asp Gly Leu
 325 330 335
 Arg Val Asn Thr Val Asp Val Ser Glu Tyr Ile Ser Trp Val Asp Gly
 340 345 350
 Tyr Tyr Cys Phe Asn His Glu Lys Ile Glu Ile Ile Thr Glu Lys Leu
 355 360 365
 Ser Arg Tyr Tyr Gly Lys Arg Val Ile Pro Asp Ser Gly Leu Ile Gly
 370 375 380
 Leu Thr Cys Ser Gly Lys Leu Asp Leu Arg Asp Asp Leu Arg Asp Val
 385 390 395 400
 Leu Glu Val Leu Ser Lys Thr Ile Pro Ala Gln Ile Glu Thr Arg Asp
 405 410 415
 Asn Tyr Phe Leu Leu Thr Lys
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<210> 9022

<211> 743

<212> PRT

<213> B.fragilis

<400> 9022

Ser Glu Thr Asn Val Val Val Met Lys Lys Arg Ile Cys Phe Val Leu
 1 5 10 15

Ile	Leu	Cys	Ile	Ser	Leu	Phe	Val	Phe	Ser	Pro	Val	His	Ala	Gln	Gln
			20					25					30		
Arg	Lys	Ser	Val	Ala	Val	Val	Leu	Ser	Gly	Gly	Gly	Ala	Lys	Gly	Val
		35					40					45			
Ala	His	Ile	Gly	Ala	Leu	Lys	Val	Ile	Glu	Glu	Ala	Gly	Ile	Pro	Ile
	50					55					60				
Asp	Tyr	Ile	Val	Gly	Thr	Ser	Met	Gly	Ser	Ile	Ile	Gly	Gly	Leu	Tyr
65					70					75				80	
Ser	Ile	Gly	Tyr	Thr	Pro	His	Gln	Leu	Asp	Ser	Met	Val	Asn	His	Gln
			85					90					95		
Asn	Trp	Pro	Leu	Leu	Leu	Ser	Asp	Arg	Ile	Ser	Trp	Glu	Asp	Gln	Thr
		100						105					110		
Met	Thr	Glu	Arg	Gln	Asn	Ser	Glu	Thr	Tyr	Val	Leu	Ser	Val	Pro	Leu
		115					120						125		
Lys	Lys	Asn	Leu	Lys	Ala	Asn	Val	Phe	Gly	Gly	Val	Ile	Lys	Gly	Gln
	130					135					140				
Asn	Leu	Ala	Asn	Leu	Phe	Ser	Glu	Leu	Thr	Val	Gly	Tyr	His	Asp	Ser
145					150					155				160	
Ile	Asn	Phe	Asn	Lys	Leu	Pro	Ile	Pro	Phe	Ala	Cys	Val	Ser	Glu	Asn
			165					170						175	
Ile	Val	Asn	Gly	Asp	Glu	Val	Val	Phe	His	Asn	Gly	Val	Leu	Ala	Thr
		180						185					190		
Ala	Met	Arg	Ala	Ser	Met	Ala	Ile	Pro	Gly	Val	Phe	Thr	Pro	Val	Arg
	195						200					205			
Leu	Gly	Asp	Lys	Ile	Leu	Val	Asp	Gly	Gly	Met	Lys	Asn	Asn	Phe	Pro
	210					215					220				
Thr	Asn	Ile	Ala	Arg	Thr	Met	Gly	Ala	Asp	Val	Ile	Ile	Gly	Val	Asp
225					230					235				240	
Val	Gln	Asn	Asp	Leu	Arg	Thr	Ala	Asp	Glu	Leu	Asn	Asn	Leu	Ser	Glu
			245						250					255	
Ile	Phe	Asn	Gln	Ile	Ile	Asn	Leu	Thr	Gly	Gln	Thr	Arg	Tyr	Glu	Glu
		260						265					270		
Asn	Ile	Lys	Leu	Ala	Thr	Val	Tyr	Ile	Lys	Val	Asp	Val	Lys	Gly	Tyr
	275						280						285		
Ser	Ala	Ala	Ser	Phe	Asn	Ile	Pro	Ala	Leu	Asp	Thr	Leu	Val	Asn	Arg
	290					295					300				
Gly	Glu	Glu	Ala	Ala	Arg	Glu	Gln	Trp	Thr	Ala	Leu	Gln	Lys	Leu	Lys
305					310					315				320	
Lys	Gly	Ile	Gly	Leu	Pro	Glu	Asn	Tyr	Val	Ala	Pro	Arg	His	Gly	Pro
			325						330					335	
Phe	Ser	Ser	Leu	Trp	Ser	Ser	Lys	Asp	Ile	Phe	Val	Lys	Glu	Ile	Thr
		340						345					350		
Phe	Asp	Gly	Ile	Glu	Asp	Ser	Asp	Lys	Lys	Trp	Ile	Met	His	Arg	Cys
	355						360					365			
His	Leu	Lys	Glu	Asn	Ser	Lys	Met	Arg	Met	Glu	Gln	Leu	Tyr	Glu	Ala
	370					375						380			
Leu	Thr	Thr	Leu	Arg	Gly	Ser	Gln	Ala	Tyr	Ser	Asn	Val	Ser	Tyr	Lys
385					390					395				400	
Leu	Thr	Asp	Thr	Pro	Gln	Gly	Tyr	Gln	Leu	His	Phe	Ile	Leu	Glu	Glu
			405						410					415	
Lys	Tyr	Glu	Arg	Asn	Leu	Asn	Leu	Gly	Ile	Arg	Phe	Asp	Ser	Glu	Glu
		420						425					430		
Ile	Ala	Ser	Leu	Leu	Leu	Asn	Val	Arg	Ser	Arg	Leu	Asp	Thr	Arg	Val
	435						440					445			
Pro	Ser	Trp	Val	Ser	Val	Thr	Gly	Arg	Leu	Gly	Lys	Arg	Tyr	Leu	Ala
	450					455						460			
Arg	Val	Glu	Tyr	Thr	Leu	Ala	Pro	Met	Gln	Met	Arg	Asn	Phe	Asn	Phe
465					470					475				480	
Ala	Tyr	Gln	Phe	Glu	Tyr	Asn	Asp	Ile	Asn	Ile	Tyr	Asp	His	Gly	Arg

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485 490 495
 Arg Ser Tyr Asn Thr Thr Tyr Lys Tyr His Ser Gly Glu Phe Gly Phe
 500 505 510
 Ser Asp Val Trp Phe Arg Asn Leu Arg Phe Gly Ala Gly Leu Asn Phe
 515 520 525
 Glu Phe Phe Lys Tyr Lys Asp Phe Leu Tyr Asn Thr Gly Gly Gln Arg
 530 535 540
 Leu Glu Val Lys Pro Gln His Phe Phe Ser Tyr Phe Ala Gln Leu His
 545 550 555 560
 Tyr Asn Thr Tyr Asn Lys Gly Tyr Phe Pro Ser Lys Gly Thr Asp Val
 565 570 575
 Gln Gly Arg Tyr Ser Leu Tyr Thr Asp Asn Leu Thr His Tyr Lys Gly
 580 585 590
 His Ala Pro Phe Ser Ala Leu Ala Ala Ser Trp Ala Gly Val Phe Ser
 595 600 605
 Leu Thr Asp Arg Phe Ala Leu Ile Pro Ser Leu Tyr Gly Arg Val Leu
 610 615 620
 Ile Gly Lys Asn Ile Pro Tyr Pro Tyr Leu Asn Ala Met Gly Gly Glu
 625 630 635 640
 Asn Phe Gly His Tyr Leu Pro Gln Gln Leu Pro Phe Ala Gly Ile Thr
 645 650 655
 Asn Leu Glu Ile Val Asp Asn Ser Val Leu Val Thr Ser Leu Lys Leu
 660 665 670
 Arg Gln Arg Ile Gly Ser Lys Asn Tyr Val Thr Phe Thr Gly Asn Val
 675 680 685
 Ala Phe Arg Asn Asp Asn Phe Phe Asp Ile Trp Gly Ala Lys Pro Val
 690 695 700
 Trp Gly Gly Ser Val Gly Tyr Gly Tyr Asp Ser Leu Phe Gly Pro Leu
 705 710 715 720
 Glu Ala Ser Leu Gly Tyr Ser Ser Arg Ser His Lys Val Gly Phe Tyr
 725 730 735
 Val Asn Leu Gly Tyr Val Phe
 740

<210> 9023

<211> 196

<212> PRT

<213> B.fragilis

<400> 9023

Lys Pro Cys Asn Met Tyr Asn Asp Glu Leu Ile Glu Ser Ser Lys Ile
 1 5 10 15
 Lys Trp Gln Ser Phe Leu Lys Gly Asp Asp Asp Ala Tyr Ala Trp Leu
 20 25 30
 Tyr Ser Arg Tyr Val Gln Gln Leu Tyr Gln Tyr Gly Cys Arg Phe Thr
 35 40 45
 Thr Asp Thr Glu Met Val Lys Asp Cys Val Gln Asp Val Phe Val Asn
 50 55 60
 Val Tyr Arg Gln Lys Asp Arg Tyr Ser Ser Pro Asp Asn Val Lys
 65 70 75 80
 Ile Tyr Leu Met Ser Ser Leu Arg Asn Ser Ile Phe Asn Val Phe Asn
 85 90 95
 Lys Gly Asn Leu His Asp Thr Tyr Ile Ser Asn Ile Asn Tyr Glu Phe
 100 105 110
 Asp Leu Ser Val Glu Glu Lys Leu Ile Glu Thr Glu Asp Glu Thr Ser
 115 120 125
 Gln Lys His Thr Val Ala His Leu Leu Asn Thr Leu Ser Pro Arg Gln
 130 135 140
 Arg Glu Ile Ile Tyr Tyr Arg Phe Phe Glu Gly Leu Asp Tyr Ser Ala

145		150		155		160									
Ile	Cys	Glu	Leu	Met	Gly	Leu	Asn	Tyr	Gln	Ser	Ala	Tyr	Asn	Leu	Leu
		165							170					175	
Gln	Arg	Ser	Leu	Ser	Arg	Leu	Arg	Glu	Met	Tyr	Gly	Ile	Leu	Pro	Phe
		180						185					190		
Phe	Phe	Leu	Phe												
		195													

<210> 9024

<211> 437

<212> PRT

<213> B.fragilis

<400> 9024

Lys	Thr	Gln	Asn	Leu	Thr	Leu	Asn	Ser	Glu	Phe	Ser	Thr	Asn	Phe	Cys
1			5						10					15	
Tyr	Ile	Cys	Thr	Leu	Phe	Tyr	Met	Glu	Leu	Arg	Arg	Pro	His	Ile	Leu
		20						25					30		
Tyr	Ile	Leu	Ile	Cys	Leu	Trp	Leu	Leu	Val	Ser	Pro	Ser	Asn	Val	Ser
		35				40						45			
Ser	Val	Trp	Ala	Lys	Asp	Phe	Val	Val	Val	Ile	Asp	Ala	Gly	His	Gly
	50					55					60				
Gly	His	Asp	Pro	Gly	Ala	Ile	Gly	Lys	Ile	Ser	Lys	Glu	Lys	Asn	Ile
65				70						75					80
Asn	Leu	Lys	Val	Ala	Leu	Lys	Leu	Gly	Asn	Leu	Ile	Lys	Gln	Asn	Cys
			85						90					95	
Asn	Asp	Val	Lys	Val	Val	Tyr	Thr	Arg	Ser	Lys	Asp	Val	Phe	Ile	Pro
		100						105					110		
Leu	Asp	Arg	Arg	Ala	Glu	Ile	Ala	Asn	Asn	Ala	Lys	Ala	Asp	Leu	Phe
		115					120					125			
Ile	Ser	Ile	His	Thr	Asn	Ala	Leu	Ala	Asn	Asn	Arg	Thr	Ala	Lys	Gly
	130				135						140				
Ala	Ser	Thr	Trp	Thr	Leu	Gly	Leu	Ala	Lys	Ser	Asp	Ala	Asn	Leu	Glu
145				150						155					160
Val	Ala	Lys	Arg	Glu	Asn	Ser	Val	Ile	Leu	Tyr	Glu	Asp	Asp	Tyr	Lys
			165						170					175	
Thr	Arg	Tyr	Ala	Gly	Phe	Asn	Pro	Asn	Ser	Ala	Glu	Ser	Tyr	Ile	Ile
		180						185					190		
Phe	Glu	Phe	Met	Gln	Asp	Lys	Tyr	Met	Glu	Gln	Ser	Val	His	Leu	Ala
		195					200					205			
Ser	Leu	Val	Gln	Lys	Gln	Phe	Arg	His	His	Cys	Lys	Arg	Val	Asp	Arg
	210					215						220			
Gly	Val	His	Gln	Ala	Gly	Phe	Leu	Val	Leu	Lys	Ala	Ser	Ala	Met	Pro
			230						235					240	
Ser	Ile	Leu	Val	Glu	Leu	Gly	Phe	Ile	Ser	Thr	Pro	Glu	Glu	Glu	Arg
			245						250					255	
Tyr	Leu	Asn	Thr	Glu	Glu	Gly	Ser	Ser	Thr	Leu	Ala	Lys	Gly	Ile	Tyr
		260					265						270		
Arg	Ala	Phe	Leu	Ser	Tyr	Lys	Arg	Glu	His	Glu	Ile	Arg	Leu	Thr	Gly
		275					280					285			
Ser	Ser	Arg	Thr	Ala	Leu	Pro	Asn	Asp	Asp	Glu	Val	Thr	Asp	Thr	Glu
	290					295					300				
Val	Ala	Gln	Ile	Asp	Ser	Thr	Glu	Ser	Glu	Asn	Lys	Lys	Pro	Gln	Asn
	305				310					315				320	
Thr	Pro	Arg	Thr	Asp	Lys	Leu	Val	Thr	Glu	Ala	Lys	Thr	Gln	Arg	Pro
			325						330					335	
Ile	Val	Val	Glu	Ser	Thr	Thr	Asn	Asp	Ser	Glu	Ile	Thr	Phe	Lys	Ile
			340				345						350		
Gln	Ile	Leu	Thr	Ser	Ser	Arg	Pro	Leu	Ser	Lys	Asn	Asp	Lys	Arg	Leu

145 150 155 160
 165 170 175
 180 185 190
 195
 9024
 437
 PRT
 B.fragilis
 9024

355 360 365
 Lys Gly Leu Lys Asp Val Asp Tyr Tyr Lys Glu Asn Gly Leu Tyr Lys
 370 375 380
 Tyr Thr Tyr Gly Ala Ser Ser Asp Tyr Asn Lys Val Leu Arg Thr Arg
 385 390 395 400
 Arg Asn Thr Val Thr Pro Leu Phe Lys Asp Ala Phe Ile Ile Ala Phe
 405 410 415
 Arg Asn Gly Glu Lys Met Asn Ile Asn Glu Ala Ile Ala Asn Phe Lys
 420 425 430
 Lys Arg Arg Asn Lys
 435

<210> 9025
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 9025
 Ile Lys Gln Lys Gly Gly Leu Ile Met Ala Gln Gln Val Gln Ser Glu
 1 5 10 15
 Ile Arg Tyr Leu Thr Pro Pro Ser Val Asp Val Lys Lys Lys Tyr
 20 25 30
 Cys Arg Phe Lys Lys Ser Gly Ile Lys Tyr Ile Asp Tyr Lys Asp Pro
 35 40 45
 Glu Phe Leu Lys Lys Phe Leu Asn Glu Gln Gly Lys Ile Leu Pro Arg
 50 55 60
 Arg Ile Thr Gly Thr Ser Leu Lys Phe Gln Arg Arg Ile Ala Gln Ala
 65 70 75 80
 Val Lys Arg Ala Arg His Leu Ala Leu Leu Pro Phe Val Thr Asp Met
 85 90 95
 Met Lys

<210> 9026
 <211> 447
 <212> PRT
 <213> B.fragilis

<400> 9026
 Ile Asn Lys Lys Asp Val Leu Met Asn Arg Phe Asn Tyr Ile Gly Met
 1 5 10 15
 Leu Ala Tyr Val Ala Leu Ser Met Ser Ser Cys Asp Asp Ser Phe Asp
 20 25 30
 Val Ser Ser Lys Ala Asp Gly Val Leu Ala Val Ser Gln Glu Gly Phe
 35 40 45
 Asn Thr Leu Gln Ser Tyr Asn Val Gly Glu Lys Tyr Thr Ala Asp Leu
 50 55 60
 Trp Ile Gln Gln Gly Gly Leu Lys Ser Thr Ala Ser Val Val Ser Phe
 65 70 75 80
 Ser Val Asp Lys Ala Leu Leu Asp Ser Met Asn Ile Ala Asp Gly Thr
 85 90 95
 Ser Tyr Glu Leu Leu Pro Ala Asp Cys Tyr Gln Leu Thr Lys Ser Ser
 100 105 110
 Val Asp Ile Pro Ala Asn Glu Arg Leu Leu Lys Gly Glu Leu Thr Tyr
 115 120 125
 Asp Pro Ala Lys Ile Gln Glu Leu Ser Gly Tyr Asp His Leu Lys Tyr
 130 135 140
 Val Leu Pro Leu Arg Ala Thr Ser Ser Gly Met Pro Phe Val Ser Gly
 145 150 155 160

Arg Ser Val Val Leu Leu Gly Phe Lys Val Ser Glu Pro Ile Val Thr
 165 170 175
 Ile Met Asn Ala Gly Val Glu Glu Ile Asn Leu Ala Glu Val Lys Glu
 180 185 190
 Leu Pro Val Gln Ile Gly Val Pro Phe Thr Asn Lys Trp Glu Ile Ser
 195 200 205
 Cys Arg Leu Glu Ser Arg Gln Ser Val Ile Asp Ala Tyr Asn Thr Ala
 210 215 220
 His Gly Thr Tyr Phe Ser Met Leu Pro Ser Asp Ala Tyr Ala Ala Pro
 225 230 235 240
 Glu Thr Pro Ile Leu His Ser Gly Val Asn Gln Val Thr Ala Thr Tyr
 245 250 255
 Lys Leu Lys Asp Asp Val Leu Pro Gly Asn Tyr Met Leu Pro Val Gln
 260 265 270
 Ile Ala Glu Val Thr Ser Asp Ala Thr Ile Arg Ala Asp Lys Asp Val
 275 280 285
 Tyr Ala Ala Tyr Ser Ile Ile Lys Glu Gly Asp Lys Leu Ser Lys Thr
 290 295 300
 Asp Trp Lys Ile Val Ser Phe Thr Thr Glu Glu Ala Ser Gly Glu Gly
 305 310 315 320
 Ser Asn Asn Gly His Ala Lys His Leu Ile Asp Gly Asn Val Glu Thr
 325 330 335
 Phe Trp His Ser Arg Trp Gln Gly Gly Ser Asp Pro Leu Pro Tyr Glu
 340 345 350
 Ile Ile Ile Asp Met Asn His Arg Val Lys Ile Ala Gln Ile Glu Leu
 355 360 365
 Leu Pro Arg Gly Arg Gly Ser Asn Asn Pro Ile Lys Val Ile Arg Phe
 370 375 380
 Glu Ala Ser Glu Asp Gly Thr Asn Trp Glu Ser Ile Gly Gln Phe Gly
 385 390 395 400
 Phe Thr Asn Gln Asp Ala Ala Leu Lys Tyr Tyr Val Lys Ser Ser Thr
 405 410 415
 Ala Arg Tyr Ile Lys Leu Val Ile Pro Asp Gly Val Gly Asn Gly Thr
 420 425 430
 Val Ala Ala Ile Arg Glu Leu Asp Val Arg Gly Thr Val Val Asn
 435 440 445

<210> 9027

<211> 458

<212> PRT

<213> B.fragilis

<400> 9027

Gln Leu Leu Asn Val Asn Glu Ile Gln Lys Tyr Ile Ala Glu Asn Glu
 1 5 10 15
 Ser Thr Met Met Glu Asp Leu Phe Ser Leu Ile Arg Ile Pro Ser Ile
 20 25 30
 Ser Ala Leu Pro Glu His His Asp Asp Met Leu Ala Cys Ala Gln Arg
 35 40 45
 Trp Thr Gln Leu Leu Leu Lys Ala Gly Ala Asp Glu Ala Ile Val Met
 50 55 60
 Pro Ser Lys Gly Asn Pro Ile Val Phe Gly Gln Lys Ile Val Asp Pro
 65 70 75 80
 Asn Ala Lys Thr Val Leu Ile Tyr Ala His Tyr Asp Val Met Pro Ala
 85 90 95
 Glu Pro Leu Asp Leu Trp Lys Ser Gln Pro Phe Glu Pro Glu Ile Arg
 100 105 110
 Asp Gly His Ile Trp Ala Arg Gly Ala Asp Asp Asp Lys Gly Gln Ala
 115 120 125

Phe Ile Gln Val Lys Ala Phe Glu Tyr Leu Val Lys Tyr Asn Leu Leu
 130 135 140
 Glu Asn Asn Val Lys Phe Ile Phe Glu Gly Glu Glu Glu Ile Gly Ser
 145 150 155 160
 Pro Ser Leu Glu Ala Phe Cys Glu Glu His Lys Glu Leu Leu Lys Ala
 165 170 175
 Asp Val Ile Leu Val Ser Asp Thr Ser Met Leu Gly Ala Asp Leu Pro
 180 185 190
 Ser Leu Thr Thr Gly Leu Arg Gly Leu Ala Tyr Trp Glu Ile Glu Ile
 195 200 205
 Thr Gly Pro Asn Arg Asp Leu His Ser Gly His Phe Gly Gly Ala Val
 210 215 220
 Ala Asn Pro Ile Asn Val Leu Cys Gly Met Leu Ser Lys Val Ile Asp
 225 230 235 240
 Thr Asp Gly Arg Ile Thr Ile Pro Gly Phe Tyr Asp Ala Val Glu Glu
 245 250 255
 Val Pro Gln Ala Glu Arg Glu Met Ile Ala His Ile Pro Phe Asn Glu
 260 265 270
 Glu Lys Tyr Lys Glu Ala Ile Gly Val Lys Glu Leu Phe Gly Glu Lys
 275 280 285
 Gly Tyr Ser Thr Leu Glu Arg Asn Ser Cys Arg Pro Ser Phe Asp Ile
 290 295 300
 Cys Gly Ile Trp Gly Gly Tyr Thr Gly Glu Gly Ser Lys Thr Val Leu
 305 310 315 320
 Pro Ser Lys Ala Tyr Ala Lys Val Ser Cys Arg Leu Val Pro His Gln
 325 330 335
 Asp His His Val Ile Ser Lys Leu Phe Ala Asp Tyr Ile Arg Gln Ile
 340 345 350
 Ala Pro Ala Thr Val Glu Val Lys Val Thr Ala Met His Gly Gly Gln
 355 360 365
 Gly Tyr Val Cys Pro Ile Ser Leu Pro Ala Tyr Gln Ala Ala Glu Lys
 370 375 380
 Gly Phe Glu Ile Ala Phe Gly Lys Lys Pro Leu Ala Val Arg Arg Gly
 385 390 395 400
 Gly Ser Ile Pro Ile Ile Ser Thr Phe Glu Gln Val Leu Gly Ile Lys
 405 410 415
 Thr Val Leu Met Gly Phe Gly Leu Glu Ser Asp Ala Ile His Ser Pro
 420 425 430
 Asn Glu Asn Phe Ser Leu Asp Ile Phe Arg Lys Gly Ile Glu Ala Val
 435 440 445
 Val Glu Phe His Leu Ile Tyr Gly Lys Lys
 450 455

<210> 9028

<211> 299

<212> PRT

<213> B.fragilis

<400> 9028

Gln Asn Met Lys Leu Ile Thr Lys Glu Val Arg Ile Gly Ile Ala Gly
 1 5 10 15
 Val Ala Ala Leu Cys Leu Leu Val Phe Gly Ile Asn Tyr Leu Lys Gly
 20 25 30
 Ile Asn Met Phe Lys Pro Ala Ser Tyr Phe Tyr Val Lys Phe His Asn
 35 40 45
 Val Asn Gly Leu Ala Gln Ser Ser Pro Val Phe Ala Asp Gly Val Arg
 50 55 60
 Val Gly Ile Val Arg Asp Ile Ala Tyr Asp Tyr Asn Gln Pro Glu Asn
 65 70 75 80

Val Ile Val Glu Val Glu Val Asp Thr Asp Leu Arg Ile Pro Lys Gly
 85 90 95
 Ser Ser Ala Glu Leu Val Pro Glu Leu Met Gly Gly Val Arg Met Asn
 100 105 110
 Ile Leu Leu Ala Asn Asn Pro Arg Glu Arg Tyr Thr Val Gly Asp Thr
 115 120 125
 Ile Pro Gly Thr Leu Asn Asn Gly Met Met Glu Lys Val Ala Ala Met
 130 135 140
 Met Pro Ala Val Glu Lys Met Leu Pro Lys Leu Asp Ser Ile Leu Thr
 145 150 155 160
 Ser Leu Asn Thr Ile Met Ala Asp Gln Ser Ile Pro Ala Thr Leu His
 165 170 175
 Ser Ile Glu Lys Thr Thr Ala Asn Leu Glu Val Thr Ser Arg Gln Leu
 180 185 190
 Lys Val Leu Met Asn Asn Asp Ile Pro Gln Leu Thr Gly Lys Leu Asn
 195 200 205
 Thr Ile Gly Asp Asn Phe Val Val Ile Ser Gly Asn Leu Lys Glu Ile
 210 215 220
 Asp Tyr Ala Ala Thr Phe Lys Lys Ile Asp Thr Thr Leu Ser Asn Val
 225 230 235 240
 Lys Met Leu Thr Glu Lys Leu Asn Ser Lys Asp Asn Thr Val Gly Leu
 245 250 255
 Leu Leu Asn Asp Pro Gln Leu Tyr Asn Asn Leu Asn Gln Thr Thr Ile
 260 265 270
 Asn Ala Ala Asn Leu Leu Glu Asp Leu Lys Glu His Pro Lys Arg Tyr
 275 280 285
 Val His Phe Ser Leu Phe Gly Lys Lys Asp Lys
 290 295

<210> 9029

<211> 297

<212> PRT

<213> B.fragilis

<400> 9029

Lys Lys Met Lys Lys Ile Phe Tyr Pro Val Leu Leu Leu Val Leu Ala
 1 5 10 15
 Ala Cys Lys Asn Pro Glu Gln Thr Ser Glu Thr Ile Val Pro Ala Pro
 20 25 30
 Ala Ile Ala Asp Ile Pro Thr Asp Thr Val Thr Thr Gln Val Asp Gly
 35 40 45
 Ile Thr Ser Ala Thr Ser Lys Pro Asn Gln Val Ser Phe Asn Gly Thr
 50 55 60
 Ile Val Leu Pro Pro Gln Arg Gln Ala Thr Val Ala Leu Thr Met Gly
 65 70 75 80
 Gly Val Val Lys His Thr Ser Leu Leu Pro Gly Gln Gln Val Arg Gln
 85 90 95
 Gly Ala Leu Leu Ala Thr Leu Glu Asn Pro Asp Phe Ile Ala Leu Gln
 100 105 110
 Gln Thr Tyr Leu Asp Ser His Ala Gln Ala Glu Tyr Leu Gln Ala Glu
 115 120 125
 Tyr Glu Arg Gln Lys Thr Leu Ser Thr Glu Gln Ala Ala Ser Gln Lys
 130 135 140
 Lys Phe Gln Gln Ser Lys Ala Asp Tyr Leu Ser Met Lys Ser Lys Leu
 145 150 155 160
 Glu Ala Thr Ala Ala Gln Leu Thr Leu Leu Gly Ile Val Pro Glu Glu
 165 170 175
 Leu Leu Lys Ser Gly Ile Gln Pro Leu Leu Gln Val Lys Ala Pro Ile
 180 185 190

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Ser Gly Tyr Ile Ser Asp Val Ala Met Asn Ile Gly Lys Tyr Ile Gln
    195                200                205
Pro Gly Glu Ala Leu Cys Glu Val Ile Asp Lys Ser Ala Pro Leu Leu
    210                215                220
Cys Leu Thr Thr Tyr Glu Lys Asp Leu Ala Asp Met Lys Val Gly Ser
225                230                235                240
Pro Val Gln Phe Arg Val Asn Gly Met Gly Lys Thr Val Phe Lys Ala
    245                250                255
Thr Leu Val Ser Ile Gly Gln Lys Val Asp Glu Val Ser Arg Ser Leu
    260                265                270
Glu Val Tyr Ala Arg Ile Asp Asp Val Asn Gln Gln Phe Arg Pro Gly
    275                280                285
Met Tyr Val Thr Ala Arg Ile Gln Lys
    290                295

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<210> 9030

<211> 400

<212> PRT

<213> B.fragilis

<400> 9030

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Asn Met Met Asn Thr Lys Ser Phe Phe Met Val Ala Ile Gly Val Phe
1          5          10          15
Val Leu Ala Ser Cys Asn Leu Asn Gln Val Asp Gln Thr Gly Leu Leu
    20          25          30
Thr Ala Ser Val Arg Asp Ala Leu Asn Ser Pro Ala Thr Leu Ser Ile
    35          40          45
Ala Asp Glu Ile Glu Ser Val Glu Tyr Ile Pro Leu Glu Met Thr Asn
    50          55          60
Asp Asp Ala Ser Leu Ile Asp Gly Val Val Asp Phe Ala Ile Thr Ser
65          70          75          80
Lys Tyr Ile Tyr Val Leu Val Gly Lys Glu Ala Arg Ile Val Leu Phe
    85          90          95
Asp Arg Gln Gly His Phe Leu Arg Thr Phe Leu Arg Gln Gly Gln Gly
    100         105         110
Pro Asp Asp Phe Asn Gly Met Ile Gly Phe Ile Gln Ala Asp Glu Ala
    115         120         125
Asp Asn Arg Phe Tyr Val Ile Gly Asn Lys Val Gly Ile Tyr Thr Leu
    130         135         140
Glu Gly Thr Phe Val Glu Asp Leu Pro Val Asn Ser Pro Ile Ile Tyr
145         150         155         160
Ala His His Leu Gly Asn Lys Arg Ile Gly Ala Ile Ala Met Pro Leu
    165         170         175
Met Pro Phe Gln Asn Gly Ser Phe Gly Ile Gly Val Phe Gln Glu Asp
    180         185         190
Gly Glu Ala Ile Ile Thr Lys Asn Asp Phe Tyr Ser Pro Leu Val Pro
    195         200         205
Arg Glu Asp Ser Gly Phe Thr Phe Gly Val Met Gly Ser Pro Ser Asp
    210         215         220
Gly Lys Gln Ala Ser Val Leu Phe Lys Thr Ala Ser Asn Asp Thr Ile
225         230         235         240
Tyr Arg Leu Ser Ala Asp Thr Ile Gln Pro Val Leu Val Ala Gly Leu
    245         250         255
Ser Asn Ser Asp Glu Glu Val Ile Arg Gly Leu Asn Ile Arg Asp Ile
    260         265         270
Lys Arg Phe Pro Ala Asn Gly Asp Ile Phe Val Ser Asp Ile Phe Glu
    275         280         285
Thr Pro Arg Arg Phe Tyr Leu Arg Met Met Leu Asn Glu Lys Tyr Tyr
290         295         300

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Val	Ala	Ser	Val	Asp	Lys	His	Ser	Gly	Glu	Thr	Val	Val	Glu	Gln	Cys
305					310					315					320
Asp	Ile	Pro	Glu	Thr	Ser	Ala	Tyr	Asn	Leu	Ala	Asp	Ile	Asn	Met	Gln
				325						330					335
Leu	Gly	Met	Val	Gly	Ser	Lys	Gly	His	Asn	Arg	Phe	Pro	Val	Trp	Gly
			340						345						350
Arg	Val	Leu	Gly	Asn	Asn	Leu	Val	Gln	Val	Val	Thr	Pro	Tyr	Glu	Ile
		355						360					365		
Glu	Thr	Phe	Lys	Glu	Gln	Thr	Gln	Ile	Thr	Val	Pro	Gln	Glu	Leu	Gln
	370					375						380			
Lys	Arg	Asn	Ala	Asn	Glu	Asn	Pro	Ile	Phe	Ile	Ile	Tyr	Lys	Ile	Lys
385					390					395					400

<210> 9031

<211> 350

<212> PRT

<213> B.fragilis

<400> 9031

Asn	Ala	Val	Asn	His	Met	Lys	Lys	Leu	Ile	Asp	Lys	Leu	Arg	Glu	Glu
1			5						10					15	
Arg	Thr	Leu	Thr	Ser	Glu	Glu	Phe	Ala	His	Leu	Leu	Ser	His	Tyr	Asp
		20						25					30		
Asp	Glu	Ala	Leu	Ala	Tyr	Ile	Asn	Gln	Gln	Ala	Arg	Glu	Val	Ala	Thr
	35					40						45			
Ala	His	Phe	Gly	Gln	Gly	Val	Tyr	Ile	Arg	Gly	Leu	Ile	Glu	Ile	Ser
	50					55					60				
Asn	Tyr	Cys	Arg	Asn	Asn	Cys	Asn	Tyr	Cys	Gly	Ile	Arg	Lys	Asp	Asn
65					70					75					80
Trp	Arg	Ala	Asp	Arg	Tyr	Arg	Leu	Ser	Lys	Glu	Met	Ile	Trp	Asp	Cys
			85						90					95	
Cys	Glu	His	Gly	Tyr	Lys	Leu	Gly	Phe	Arg	Ser	Phe	Val	Leu	Gln	Gly
		100						105					110		
Gly	Glu	Asp	Pro	Lys	Arg	Ser	Asp	Asn	Asp	Met	Glu	Glu	Ile	Ile	Ala
	115						120						125		
Glu	Ile	Arg	Arg	Arg	Tyr	Pro	Glu	Cys	Ala	Ile	Thr	Leu	Ser	Ile	Gly
	130					135						140			
Glu	Lys	Pro	Ala	Lys	Ala	Tyr	Glu	Arg	Tyr	Phe	Met	Lys	Gly	Ala	Asp
145					150					155					160
Arg	Tyr	Leu	Leu	Arg	His	Glu	Thr	Phe	Asn	Arg	Gly	His	Tyr	Tyr	Cys
			165						170					175	
Leu	His	Pro	Tyr	Glu	Met	Ser	Asn	Glu	Arg	Arg	Ile	Lys	Cys	Leu	Gln
		180							185					190	
Glu	Leu	Lys	Arg	Ile	Gly	Phe	Gln	Thr	Gly	Thr	Gly	Ile	Met	Val	Gly
		195					200					205			
Thr	Pro	Arg	Gln	Arg	Val	Glu	Phe	Leu	Ile	Glu	Asp	Ile	Arg	Phe	Ile
	210					215						220			
Glu	Asn	Phe	Gln	Pro	Glu	Met	Ile	Gly	Ile	Gly	Pro	Phe	Ile	Pro	His
225					230					235					240
Gln	Arg	Thr	Pro	Phe	Cys	Asp	Glu	Lys	Ala	Gly	Ser	Val	Glu	Leu	Thr
			245						250					255	
Leu	Leu	Leu	Leu	Ser	Ile	Phe	Arg	Leu	Met	His	Pro	Lys	Ala	Leu	Ile
		260						265					270		
Pro	Ser	Thr	Thr	Ala	Leu	Ala	Ser	Leu	Ala	Pro	Asp	Gly	Arg	Ile	Arg
		275					280					285			
Gly	Ile	Leu	Ala	Gly	Ala	Asn	Val	Val	Met	Pro	Asn	Leu	Ser	Pro	Ile
	290					295					300				
Ile	Val	Arg	Asn	Lys	Tyr	Asn	Leu	Tyr	Asp	Gln	Lys	Val	Ala	Phe	Gly
305					310					315					320

Ala Glu Ala Ala Glu Gly Leu Ala Leu Leu Glu Lys Gln Leu Thr Ala
 325 330 335
 Val Gly Tyr His Ile Asp Tyr Ser Arg Gly Asp Tyr Asn Asn
 340 345 350

<210> 9032

<211> 63

<212> PRT

<213> B.fragilis

<400> 9032

Leu Ile Pro Lys Thr Ser Lys His Lys Ala Ala Thr Pro Ala Ile Pro
 1 5 10 15
 Ile Leu Thr Ser Phe Val Met Ser Phe Met Phe Cys Tyr Leu Val Phe
 20 25 30
 Leu Phe Ile Ser Ser Phe Leu Lys Ile Gly Tyr Ser Leu Val Asp Ile
 35 40 45
 His Leu Phe Ser Val Ala Glu Cys Asn Asp Glu Gly Ile Leu Lys
 50 55 60

<210> 9033

<211> 349

<212> PRT

<213> B.fragilis

<400> 9033

Asn Ala Pro Lys Arg Lys Met Asn Lys Ile Ser Val Val Ile Leu Asn
 1 5 10 15
 Trp Asn Gly Cys Glu Met Leu Arg Ser Phe Leu Pro Ser Val Leu Arg
 20 25 30
 Tyr Ser Glu Ala Glu Gly Val Glu Val Cys Val Ala Asp Asn Gly Ser
 35 40 45
 Thr Asp Gln Ser Val Glu Met Leu Arg Arg Glu Phe Pro Ser Val Arg
 50 55 60
 Arg Ile Leu Leu Asp Gly Asn His Gly Phe Ala Asp Gly Tyr Asn Leu
 65 70 75 80
 Ala Leu Arg Gln Val Glu Ala Glu Tyr Val Val Leu Leu Asn Ser Asp
 85 90 95
 Val Glu Val Thr Gly His Trp Leu Gln Pro Met Ala Ala Tyr Leu Asp
 100 105 110
 Ala His Pro Glu Val Ala Ala Cys Gln Pro Lys Ile Arg Ser Trp Arg
 115 120 125
 Gln Lys Glu Trp Phe Glu Tyr Ala Gly Ala Ala Gly Gly Phe Ile Asp
 130 135 140
 Arg Tyr Gly Tyr Pro Phe Cys Arg Gly Arg Val Met Gly Val Val Glu
 145 150 155 160
 Ala Asp Arg Gly Gln Tyr Asp Thr Val Leu Pro Ile Phe Trp Ala Thr
 165 170 175
 Gly Ala Ala Met Phe Ile Arg Leu Ala Asp Tyr Arg Glu Ala Gly Gly
 180 185 190
 Leu Asp Gly Arg Phe Phe Ala His Met Glu Glu Ile Asp Leu Cys Trp
 195 200 205
 Arg Leu Arg Ala Arg Gly Arg Gly Ile Val Cys Ile Pro Gln Ser Val
 210 215 220
 Val Tyr His Val Gly Gly Ala Thr Leu Lys Lys Glu Asn Pro His Lys
 225 230 235 240
 Thr Phe Leu Asn Phe Arg Asn Asn Leu Val Met Leu Tyr Lys Asn Leu
 245 250 255
 Pro Asp Arg Glu Leu Ala Gly Val Met Arg Val Arg Cys Trp Leu Asp

260 265 270
 Tyr Ile Ala Ala Ala Thr Phe Ala Leu Lys Gly Gln Leu Pro Asn Ala
 275 280 285
 Lys Ala Val Val Arg Ala Arg Arg Glu Phe Lys Leu Leu Arg Asp Ser
 290 295 300
 Phe Arg Asp Ala Arg Ala Glu Asn Leu Arg Lys Thr Ser Ser His Phe
 305 310 315 320
 Ile Pro Glu Arg Ile Lys Ser Ser Ile Leu Val Gln Phe Tyr Val Lys
 325 330 335
 Gly Arg Lys Phe Phe Ser Gln Leu Ser Asp Leu Lys Gly
 340 345

<210> 9034
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 9034
 Lys Ala Lys Lys Met Lys Lys Leu Val Leu Met Phe Val Ala Ile Ala
 1 5 10 15
 Ala Val Ser Phe Ala Ser Cys Gly Asn Lys Ala Ala Asp Ala Glu Lys
 20 25 30
 Ala Thr Ala Asp Ser Ile Arg Ile Ala Asp Ser Ile Ala Val Glu
 35 40 45
 Ala Ala Ala Ala Glu Ala Ala Ala Gln Ala Ala Asp Thr Ile Ala Ala
 50 55 60
 Asp Thr Thr Val Val Thr Glu Thr Val Val Ala Glu
 65 70 75

<210> 9035
 <211> 146
 <212> PRT
 <213> B.fragilis

<400> 9035
 Leu Met Lys Lys Leu Leu Arg Pro Thr Thr Phe Ala Leu Leu Thr Met
 1 5 10 15
 Ala Leu Cys Phe Thr Ala Cys Glu Asn Gly Asn Asn Ser Tyr Pro Lys
 20 25 30
 Glu Tyr Leu Gly Phe Glu Lys Lys Ala Gln Asp Phe Ser Tyr Gln Lys
 35 40 45
 Asn Ala Glu Glu Thr Glu Leu Gln Val Lys Ile Val Ala Ala Asp Lys
 50 55 60
 Thr Ser Glu Asp Arg Ile Val Phe Ile Glu Ser Pro Ala Arg Pro Thr
 65 70 75 80
 Lys Pro Gly Ser Ser Ser Ala Pro Phe Tyr Lys Ile Lys Asp Asn Lys
 85 90 95
 Ile Thr Ile Lys Gly Gly Ser Lys Ser Ala Lys Ala Thr Ile Leu Val
 100 105 110
 Tyr Pro Arg Lys Val Gly Thr Asn Glu Tyr Ile Gln Leu Ile Cys Arg
 115 120 125
 Pro Gln Asn Gly Lys Ser Glu Thr Thr Lys Met Ser Ile Arg Leu Val
 130 135 140
 Lys Lys
 145

<210> 9036
 <211> 82
 <212> PRT

<213> B.fragilis

<400> 9036

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Trp Gly Asn Leu Tyr Arg Thr Lys Arg Leu Thr Trp Ile His Lys Val
1      5      10      15
Ile Thr Leu Leu Ile Trp Leu Leu Leu Phe Leu Leu Gly Ile Asp Val
20      25      30
Glu Gly Ile Glu Ala Ile Val Lys Gly Leu His Ala Ile Gly Leu Glu
35      40      45
Ala Leu Ile Ile Thr Ala Ala Ala Val Thr Gly Ser Thr Leu Ala Ala
50      55      60
Trp Gly Leu Trp Tyr Leu Leu His Thr Arg Tyr Gln Lys Lys Glu Ala
65      70      75      80
Lys Pro

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<210> 9037

<211> 237

<212> PRT

<213> B.fragilis

<400> 9037

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Lys Met Ile Asp Met Asp Glu Lys Leu Arg Ile Leu Leu Cys Glu Asp
1      5      10      15
Asp Glu Asn Leu Gly Met Leu Leu Arg Glu Tyr Leu Gln Ala Lys Gly
20      25      30
Tyr Ser Ala Glu Leu Tyr Pro Asp Gly Glu Ala Gly Phe Lys Ala Phe
35      40      45
Leu Lys Asn Lys Tyr Asp Leu Cys Val Phe Asp Val Met Met Pro Lys
50      55      60
Lys Asp Gly Phe Thr Leu Ala Gln Glu Val Arg Ala Ala Asn Ala Glu
65      70      75      80
Ile Pro Ile Ile Phe Leu Thr Ala Lys Thr Leu Lys Glu Asp Ile Leu
85      90      95
Glu Gly Phe Lys Ile Gly Ala Asp Asp Tyr Ile Thr Lys Pro Phe Ser
100     105     110
Met Glu Glu Leu Thr Phe Arg Ile Glu Ala Ile Leu Arg Arg Val Arg
115     120     125
Gly Lys Lys Asn Lys Glu Ser Asn Val Tyr Lys Ile Gly Lys Phe Thr
130     135     140
Phe Asp Thr Gln Lys Gln Ile Leu Ala Ile Gly Asp Lys Gln Thr Lys
145     150     155     160
Leu Thr Thr Lys Glu Ser Glu Leu Leu Gly Leu Leu Cys Ala His Ala
165     170     175
Asn Glu Ile Leu Gln Arg Asp Phe Ala Leu Lys Thr Ile Trp Ile Asp
180     185     190
Asp Asn Tyr Phe Asn Ala Arg Ser Met Asp Val Tyr Ile Thr Lys Leu
195     200     205
Arg Lys His Leu Lys Asp Asp Asp Ser Ile Glu Ile Ile Asn Ile His
210     215     220
Gly Lys Gly Tyr Lys Leu Ile Thr Pro Glu Pro Glu Ser
225     230     235

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<210> 9038

<211> 449

<212> PRT

<213> B.fragilis

<400> 9038

Leu Cys Ala Glu Tyr Ala Phe Leu Gln Ile Met Ile Asp Thr Thr Val
 1 5 10 15
 Phe Gln Asp Lys Thr Ala Val Tyr Tyr Thr Leu Gly Cys Lys Leu Asn
 20 25 30
 Phe Ser Glu Thr Ser Thr Ile Gly Lys Ile Leu Arg Glu Ala Gly Val
 35 40 45
 Arg Thr Ala Arg Lys Gly Glu Lys Ala Asp Leu Cys Ile Val Asn Thr
 50 55 60
 Cys Ser Val Thr Glu Met Ala Asp Lys Lys Cys Arg Gln Ala Ile His
 65 70 75 80
 Arg Leu Val Lys Gln His Pro Gly Ala Phe Val Val Val Thr Gly Cys
 85 90 95
 Tyr Ala Gln Leu Lys Pro Gly Asp Val Ala Lys Ile Glu Gly Val Asp
 100 105 110
 Val Val Leu Gly Ala Glu Gln Lys Lys Asp Leu Leu Gln Tyr Leu Gly
 115 120 125
 Asp Leu His Lys His Glu Gly Gly Glu Ala Tyr Thr Thr Ala Thr Lys
 130 135 140
 Asp Ile Arg Ser Phe Ala Pro Ser Cys Ser Arg Gly Asp Arg Thr Arg
 145 150 155 160
 Phe Phe Leu Lys Val Gln Asp Gly Cys Asp Tyr Phe Cys Ser Tyr Cys
 165 170 175
 Thr Ile Pro Phe Ala Arg Gly Arg Ser Arg Asn Gly Thr Ile Ala Ser
 180 185 190
 Leu Val Glu Gln Ala Arg Gln Ala Ala Ala Glu Gly Gly Lys Glu Ile
 195 200 205
 Val Leu Thr Gly Val Asn Ile Gly Asp Phe Gly Lys Ser Thr Gly Glu
 210 215 220
 Thr Phe Phe Asp Leu Val Lys Ala Leu Asp Arg Val Glu Gly Ile Glu
 225 230 235 240
 Arg Tyr Arg Ile Ser Ser Ile Glu Pro Asn Leu Leu Thr Asp Glu Ile
 245 250 255
 Ile Glu Tyr Val Ser Arg Ser Arg Ser Phe Met Pro His Phe His Ile
 260 265 270
 Pro Leu Gln Ser Gly Ser Asp Glu Val Leu Gln Leu Met Arg Arg Arg
 275 280 285
 Tyr Gly Thr Glu Leu Phe Ala Ser Lys Ile Ala Lys Ile Lys Glu Val
 290 295 300
 Met Pro Asp Ala Phe Ile Gly Val Asp Val Ile Val Gly Thr Arg Gly
 305 310 315 320
 Glu Thr Ala Gly Tyr Phe Glu Lys Ala Tyr Glu Phe Ile His Gly Leu
 325 330 335
 Asp Val Thr Gln Leu His Val Phe Ser Tyr Ser Glu Arg Pro Gly Thr
 340 345 350
 Gln Ala Leu Lys Ile Asp His Val Val Thr Pro Glu Glu Lys His Gln
 355 360 365
 Arg Ser Gln Arg Leu Leu Ala Leu Ser Asp Glu Lys Thr Lys Ala Phe
 370 375 380
 Tyr Ala Arg His Ile Gly Gln Thr Met Pro Val Leu Met Glu Lys Pro
 385 390 395 400
 Lys Ala Gly Ala Pro Met His Gly Phe Thr Ala Asn Tyr Ile Arg Val
 405 410 415
 Glu Val Glu Ser Asp Ala Ala Leu Asp Asn Lys Val Val Asn Val Leu
 420 425 430
 Leu Gly Asp Phe Asn Glu Glu Gly Thr Ala Leu Lys Gly Thr Ile Thr
 435 440 445
 Gln

<400> 9039

<210> 9040

<400> 9040

Asn	Leu	Asn	Asp	Ile	Thr	Met	Leu	Lys	Phe	Leu	Lys	Asn	Trp	Thr	Leu
1				5					10					15	
Pro	Ile	Ala	Met	Leu	Val	Gly	Ala	Val	Gly	Tyr	Pro	Val	Phe	Ile	Ser
			20					25					30		
Phe	Ser	Phe	Leu	Thr	Pro	Ile	Leu	Ile	Phe	Thr	Met	Leu	Leu	Leu	Thr
			35				40					45			
Phe	Cys	Lys	Val	Ser	Pro	Arg	Asp	Leu	Lys	Pro	Lys	Pro	Leu	His	Leu
	50					55					60				
Trp	Leu	Leu	Leu	Ile	Gln	Ile	Phe	Gly	Ser	Leu	Ile	Val	Tyr	Leu	Leu
65					70					75					80
Leu	Tyr	Arg	Phe	Asn	Lys	Ile	Val	Ala	Glu	Gly	Ala	Met	Val	Cys	Val
				85					90					95	
Ile	Cys	Pro	Thr	Ala	Thr	Ala	Ala	Ala	Val	Ile	Thr	Ser	Lys	Leu	Gly
				100				105						110	
Gly	Ser	Ala	Ala	Ser	Leu	Thr	Thr	Tyr	Thr	Leu	Ile	Ala	Asn	Ile	Gly
			115				120					125			
Ala	Ala	Ile	Ala	Val	Pro	Ile	Leu	Phe	Pro	Leu	Ile	Glu	Ala	Asn	Pro
						135					140				
Gly	Ile	Ser	Phe	Ile	Asp	Ala	Phe	Leu	Val	Ile	Leu	Ser	Lys	Val	Phe
145					150					155					160
Pro	Leu	Leu	Ile	Cys	Pro	Phe	Leu	Ala	Ala	Trp	Phe	Leu	Gln	Arg	Phe
				165					170					175	
Ile	Pro	Lys	Val	His	Lys	Val	Leu	Leu	Gly	Tyr	His	Glu	Leu	Ala	Phe
				180				185						190	
Tyr	Leu	Trp	Gly	Ile	Ser	Leu	Ala	Ile	Val	Thr	Ala	Gln	Thr	Leu	Tyr
			195				200					205			
Ser	Leu	Ile	Asn	Asp	Pro	Ala	Asp	Gly	Leu	Thr	Glu	Ile	Met	Ile	Ala
						215					220				
Val	Val	Ala	Leu	Ile	Ala	Cys	Cys	Leu	Gln	Phe	Phe	Leu	Gly	Lys	Thr
225					230					235					240
Leu	Gly	Ser	Ile	Tyr	Asn	Asp	Arg	Ile	Ser	Gly	Gly	Gln	Ala	Leu	Gly
				245					250					255	
Gln	Lys	Asn	Thr	Ile	Leu	Ala	Ile	Trp	Met	Ala	His	Thr	Tyr	Leu	Asn
			260					265					270		

Pro Leu Ser Ala Val Gly Pro Gly Ser Tyr Val Leu Trp Gln Asn Ile
 275 280 285
 Ile Asn Ser Trp Gln Leu Trp Lys Lys Arg Lys Lys Glu Ser Glu Lys
 290 295 300
 Cys Ser Asn Asn Val Ser Gly
 305 310

<210> 9041
 <211> 159
 <212> PRT
 <213> B.fragilis

<400> 9041
 Ser Asp Gly Leu Arg Met Leu Ser Phe Arg Ala Arg Pro Glu Gly Trp
 1 5 10 15
 Pro Glu Lys Arg Leu His Leu Pro Thr Asp Phe Ser Pro Val Ser Gln
 20 25 30
 Ile Tyr Gly Ile Cys Val Gln Met Asp Gly Leu Gly Ala Glu Ser Asp
 35 40 45
 Glu Phe Ala Phe Val Leu Ser Leu Ser Arg Cys Phe Cys Tyr Ile Leu
 50 55 60
 Ser Val Cys Phe Cys Gly Ala Thr Gly Glu Lys Lys Ala Pro Val Arg
 65 70 75 80
 Gly Ser Ala His Asn Asn Ile Cys Glu Glu Ala Lys His Ile Asp Ile
 85 90 95
 Leu Pro Glu Arg Ser Lys His Phe Pro Glu Met Leu Thr Ser Phe Ala
 100 105 110
 Gln Asn Val Cys Phe Phe Leu Gly Lys Cys Thr Val Phe Asn Pro Lys
 115 120 125
 Tyr Pro Leu Leu Trp Leu Glu Lys Pro Pro Ser Cys Thr Glu Lys Ser
 130 135 140
 Ala Ala Ala Phe Tyr Phe Ile Leu Ser Gly Arg Arg Arg Ser Gln
 145 150 155

<210> 9042
 <211> 633
 <212> PRT
 <213> B.fragilis

<400> 9042
 Thr Met Ala Asp Ser Lys Glu Lys Leu Phe Ser Asp Phe Ser Pro Val
 1 5 10 15
 Ser Thr Glu Lys Trp Met Glu Lys Val Thr Ala Asp Leu Lys Gly Ala
 20 25 30
 Asp Phe Glu Lys Lys Leu Val Trp Lys Thr Asn Glu Gly Phe Lys Val
 35 40 45
 Lys Pro Phe Tyr Arg Met Glu Asp Leu Glu Gly Leu Lys Thr Thr Asp
 50 55 60
 Ala Leu Pro Gly Glu Phe Pro Tyr Leu Arg Gly Thr Lys Lys Asn Ser
 65 70 75 80
 Asn Glu Trp Leu Val Arg Gln Glu Ile Lys Val Glu Ser Pro Lys Glu
 85 90 95
 Ala Asn Ala Lys Ala Leu Asp Ile Leu Asn Lys Gly Ile Asp Ser Leu
 100 105 110
 Ser Phe His Val Lys Ala Lys Glu Leu Asn Ala Glu Tyr Ile Glu Thr
 115 120 125
 Leu Leu Asn Asp Ile Cys Ala Glu Cys Val Glu Leu Asn Phe Ser Thr
 130 135 140
 Cys Gln Gly His Val Val Glu Leu Ala Asp Leu Leu Val Ala Tyr Phe

145		150		155		160									
Gln	Lys	Lys	Asp	Tyr	Asp	Leu	Thr	Lys	Leu	Gln	Gly	Ser	Ile	Asn	Tyr
		165							170					175	
Asp	Phe	Phe	Asn	Lys	Met	Leu	Ala	Lys	Gly	Lys	Glu	Lys	Gly	Asn	Met
		180						185					190		
Val	Gln	Thr	Ala	Lys	Ala	Leu	Ile	Glu	Ala	Thr	Ala	Gln	Leu	Pro	Lys
		195					200					205			
Tyr	Arg	Val	Leu	Asn	Val	Asn	Ala	Leu	Thr	Leu	Asn	Asn	Ala	Gly	Ala
	210					215					220				
Tyr	Ile	Ser	Gln	Glu	Leu	Gly	Tyr	Ala	Leu	Ala	Trp	Gly	Asn	Glu	Tyr
225					230					235				240	
Met	Asn	Gln	Leu	Thr	Glu	Ala	Glu	Ile	Pro	Ala	Ala	Ile	Val	Ala	Lys
				245					250					255	
Lys	Ile	Lys	Phe	Asn	Phe	Gly	Ile	Ser	Ser	Asn	Tyr	Phe	Leu	Glu	Ile
			260					265					270		
Ala	Lys	Phe	Arg	Ala	Ala	Arg	Met	Leu	Trp	Ala	Asn	Ile	Val	Ala	Ser
		275					280					285			
Tyr	Asn	Pro	Glu	Cys	Leu	Arg	Asp	Cys	Glu	Asn	Lys	Gly	Pro	Asn	Gly
	290					295					300				
Glu	Cys	Arg	Cys	Ala	Ala	Lys	Met	Lys	Val	His	Ala	Glu	Thr	Ser	Thr
305					310					315					320
Phe	Asn	Leu	Thr	Leu	Phe	Asp	Ala	His	Val	Asn	Leu	Leu	Arg	Thr	Gln
				325					330					335	
Thr	Glu	Ala	Met	Ser	Ala	Ala	Leu	Gly	Gly	Val	Asp	Ser	Met	Thr	Val
			340					345					350		
Val	Pro	Phe	Asp	Lys	Thr	Tyr	Glu	Thr	Pro	Asp	Glu	Phe	Ser	Glu	Arg
		355					360					365			
Leu	Ala	Arg	Asn	Gln	Gln	Leu	Leu	Leu	Lys	Glu	Glu	Ser	His	Phe	Asp
	370					375					380				
Lys	Val	Ile	Asp	Pro	Ala	Ala	Gly	Ser	Tyr	Tyr	Ile	Glu	Asn	Leu	Thr
385					390					395				400	
Val	Ser	Ile	Ala	Lys	Gln	Ala	Trp	Glu	Ile	Phe	Leu	Ala	Val	Glu	Glu
			405						410					415	
Glu	Gly	Gly	Phe	Tyr	Ala	Ala	Leu	Lys	Ala	Gly	Thr	Val	Gln	Ala	Ala
			420					425					430		
Val	Asn	Glu	Ser	Asn	Lys	Ala	Arg	His	Lys	Ala	Val	Ala	Gln	Arg	Arg
		435					440					445			
Glu	Val	Leu	Leu	Gly	Thr	Asn	Gln	Phe	Pro	Asn	Phe	Asn	Glu	Lys	Ala
	450					455					460				
Gly	Asp	Lys	Lys	Pro	Val	Glu	Ala	Thr	Cys	Cys	Cys	Gly	Gly	His	Asp
465					470					475				480	
Thr	Cys	Glu	Lys	Asp	Val	Ala	Thr	Leu	Asn	Phe	Asp	Arg	Ala	Ala	Ser
			485						490					495	
Gln	Phe	Glu	Ala	Leu	Arg	Leu	Glu	Thr	Glu	Ala	Ser	Gly	Lys	Arg	Pro
			500						505				510		
Lys	Ala	Phe	Met	Leu	Thr	Ile	Gly	Asn	Leu	Ala	Met	Arg	Gln	Ala	Arg
		515					520					525			
Ala	Gln	Tyr	Ser	Cys	Asn	Phe	Leu	Ala	Cys	Ala	Gly	Tyr	Glu	Val	Ile
		530					535				540				
Asp	Asn	Leu	Gly	Phe	Glu	Thr	Val	Glu	Ala	Gly	Val	Glu	Ala	Ala	Met
545					550					555				560	
Ala	Ala	Lys	Ala	Asp	Ile	Val	Val	Leu	Cys	Ser	Ser	Asp	Asp	Glu	Tyr
			565						570					575	
Ala	Glu	Tyr	Ala	Ile	Pro	Ala	Phe	Arg	Ala	Leu	Asn	Gly	Arg	Ala	Met
			580					585					590		
Phe	Ile	Ile	Ala	Gly	Asn	Pro	Glu	Cys	Ala	Glu	Glu	Leu	Lys	Ala	Ala
		595					600					605			
Gly	Ile	Glu	Asn	Phe	Ile	His	Val	Arg	Val	Asn	Val	Leu	Glu	Thr	Leu
	610					615					620				

Lys Glu Phe Asn Ala Lys Leu Leu Lys
625 630

<210> 9043
<211> 476
<212> PRT
<213> B.fragilis

<400> 9043

Ser	Thr	Lys	Asp	Met	Tyr	Lys	Val	Asp	Ser	Pro	Asp	Ala	Val	Asp	Phe
1				5					10					15	
Ile	Asn	His	Gln	Glu	Ile	Ile	Glu	Thr	Leu	Glu	Tyr	Ala	Arg	Ala	His
			20					25					30		
Arg	Asn	Asp	Arg	Glu	Leu	Ile	Arg	Asn	Leu	Ile	Glu	Lys	Ala	Arg	Leu
		35					40					45			
Cys	Lys	Gly	Leu	Thr	His	Arg	Glu	Ala	Ala	Ile	Leu	Leu	Glu	Cys	Ala
	50					55					60				
Glu	Glu	Asp	Leu	Thr	Lys	Glu	Ile	Phe	His	Leu	Ala	Lys	Glu	Ile	Lys
65					70					75					80
Gln	Lys	Phe	Tyr	Gly	Asn	Arg	Ile	Val	Met	Phe	Ala	Pro	Leu	Tyr	Leu
			85						90					95	
Ser	Asn	Tyr	Cys	Val	Asn	Gly	Cys	Val	Tyr	Cys	Pro	Tyr	His	Leu	Lys
			100					105						110	
Asn	Lys	Thr	Ile	Ile	Arg	Lys	Lys	Leu	Thr	Gln	Glu	Glu	Ile	Cys	Arg
		115				120						125			
Glu	Val	Ile	Ala	Leu	Gln	Asp	Met	Gly	His	Lys	Arg	Leu	Ala	Leu	Glu
	130					135						140			
Ala	Gly	Glu	Asp	Pro	Val	Arg	Asn	Ser	Ile	Asp	Tyr	Ile	Leu	Glu	Ser
145					150					155					160
Ile	Arg	Thr	Ile	Tyr	Ser	Ile	His	His	Lys	Asn	Gly	Ala	Ile	Arg	Arg
				165					170					175	
Val	Asn	Val	Asn	Ile	Ala	Ala	Thr	Thr	Val	Glu	Asn	Tyr	Arg	Lys	Leu
			180						185					190	
Lys	Asp	Ala	Gly	Ile	Gly	Thr	Tyr	Ile	Leu	Phe	Gln	Glu	Thr	Tyr	His
		195					200					205			
Lys	Glu	Asn	Tyr	Glu	Gln	Leu	His	Pro	Thr	Gly	Pro	Lys	Ser	Asn	Tyr
	210					215						220			
Ala	Tyr	His	Thr	Glu	Ala	Met	Asp	Arg	Ala	Met	Gln	Gly	Gly	Ile	Asp
225					230					235					240
Asp	Val	Gly	Met	Gly	Val	Leu	Phe	Gly	Leu	Asn	Thr	Tyr	Arg	Tyr	Asp
			245						250					255	
Phe	Val	Gly	Leu	Met	His	Ala	Glu	His	Leu	Glu	Ala	Val	Tyr	Gly	
		260					265						270		
Val	Gly	Pro	His	Thr	Ile	Ser	Val	Pro	Arg	Ile	Cys	Ser	Ala	Asp	Asp
		275					280						285		
Ile	Asn	Ala	Glu	Asp	Phe	Glu	Asn	Ala	Ile	Ser	Asp	Glu	Ile	Phe	Gln
	290					295						300			
Lys	Ile	Val	Ala	Val	Ile	Arg	Ile	Ser	Val	Pro	Tyr	Thr	Gly	Met	Ile
305					310					315					320
Ile	Ser	Thr	Arg	Glu	Ser	Gln	Lys	Thr	Arg	Glu	Lys	Val	Leu	Asp	Leu
			325						330					335	
Gly	Ile	Ser	Gln	Ile	Ser	Gly	Gly	Ser	Arg	Thr	Ser	Val	Gly	Gly	Tyr
		340						345					350		
Ala	Glu	Ala	Glu	Thr	Pro	Glu	Glu	Asn	Ser	Ala	Gln	Phe	Asp	Val	Ser
		355					360					365			
Asp	Thr	Arg	Thr	Leu	Asp	Glu	Val	Val	Asn	Trp	Leu	Leu	Lys	Leu	Gly
	370					375					380				
Tyr	Ile	Pro	Ser	Phe	Cys	Thr	Ala	Cys	Tyr	Arg	Ala	Gly	Arg	Thr	Gly
385					390					395					400

625 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

Asp Gln Phe Met Ser Leu Val Lys Ser Gly Gln Ile Ala Asn Cys Cys
 405 410 415
 Ser Pro Asn Ala Leu Ile Thr Leu Gln Tyr Leu Glu Asp Tyr Ala
 420 425 430
 Ser Glu Glu Thr Lys Ala Arg Gly Val Ala Met Ile Lys Gln Glu Met
 435 440 445
 Gln His Ile Pro Asn Pro Lys Ile Arg Glu Arg Ala Leu Glu Asn Leu
 450 455 460
 Lys Gln Ile Ala Ala Gly Glu Arg Asp Phe Arg Phe
 465 470 475

<210> 9044

<211> 449

<212> PRT

<213> B.fragilis

<400> 9044

Ile Lys Lys Asp Met Ile Ser Leu Asn Ile Glu Lys Thr Phe Gly Phe
 1 5 10 15
 Ile Ser Lys Glu Ser Val Ser Ala Tyr Glu Ala Gln Val Lys Ala Ala
 20 25 30
 Gln Glu Ala Leu Glu Asn Gly Thr Gly Lys Gly Asn Asp Phe Leu Gly
 35 40 45
 Trp Leu His Leu Pro Ser Ser Ile Ser Lys Glu His Leu Ala Asp Leu
 50 55 60
 Lys Ala Thr Ala Gln Val Leu Arg Asp Asn Cys Glu Val Val Ile Val
 65 70 75 80
 Ala Gly Ile Gly Gly Ser Tyr Leu Gly Ala Arg Ala Val Ile Glu Ala
 85 90 95
 Leu Ser Asn Ser Phe Thr Trp Leu Gln Glu Lys Lys Thr Ala Pro Val
 100 105 110
 Met Ile Tyr Ala Gly His Asn Ile Gly Glu Asp Tyr Leu Tyr Glu Leu
 115 120 125
 Thr Glu Phe Leu Lys Asp Lys Lys Phe Gly Val Ile Asn Ile Ser Lys
 130 135 140
 Ser Gly Thr Thr Thr Glu Thr Ala Leu Ala Phe Arg Leu Leu Lys Lys
 145 150 155 160
 Gln Cys Glu Asp Gln Arg Gly Lys Glu Met Ala Lys Lys Val Ile Val
 165 170 175
 Ala Val Thr Asp Ala Lys Lys Gly Ala Ala Arg Val Thr Ala Asp Lys
 180 185 190
 Glu Gly Tyr Lys Ser Phe Ile Ile Pro Asp Asn Val Gly Gly Arg Phe
 195 200 205
 Ser Val Leu Thr Pro Val Gly Leu Leu Pro Ile Ala Val Ala Gly Phe
 210 215 220
 Asp Ile Glu Gln Leu Val Asn Gly Ala Ala Asp Met Glu Lys Ala Cys
 225 230 235 240
 Gly Ala Asp Val Pro Phe Ala Glu Asn Pro Ala Ala Ile Tyr Ala Ala
 245 250 255
 Thr Arg Asn Glu Leu Tyr Lys Asn Gly Lys Lys Ile Glu Ile Leu Val
 260 265 270
 Asn Phe Cys Pro Lys Leu His Tyr Val Ser Glu Trp Trp Lys Gln Leu
 275 280 285
 Tyr Gly Glu Ser Glu Gly Lys Asp Asn Lys Gly Ile Phe Pro Ala Ala
 290 295 300
 Val Asp Phe Ser Thr Asp Leu His Ser Met Gly Gln Trp Ile Gln Glu
 305 310 315 320
 Gly Glu Arg Thr Ile Phe Glu Thr Val Ile Ser Val Asp Lys Val Asn
 325 330 335

His Lys Leu Glu Val Pro Ser Asp Glu Ala Asn Leu Asp Gly Leu Asn
 340 345 350
 Phe Leu Ala Gly Lys Arg Val Asp Glu Val Asn Lys Met Ala Glu Leu
 355 360 365
 Gly Thr Gln Leu Ala His Val Asp Gly Gly Val Pro Asn Met Arg Ile
 370 375 380
 Val Ile Pro Glu Leu Ser Glu Phe Ser Ile Gly Gln Leu Leu Tyr Phe
 385 390 395 400
 Phe Glu Lys Ala Cys Gly Ile Ser Gly Tyr Leu Leu Gly Val Asn Pro
 405 410 415
 Phe Asn Gln Pro Gly Val Glu Ala Tyr Lys Lys Asn Met Phe Ala Leu
 420 425 430
 Leu Asn Lys Pro Gly Tyr Glu Glu Glu Ser Lys Ala Ile Gln Ala Arg
 435 440 445
 Leu

<210> 9045
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9045
 Thr Gly Ser Glu Thr Ile Glu Met Arg Thr Arg Gln Leu Ile Asp Thr
 1 5 10 15
 Asp Met Pro Met Cys Met Asn Asp Thr Glu Asn Leu Thr Ala Val Gln
 20 25 30
 Thr Asp Met Leu Arg Val Val Ala Asn Gly Glu Tyr Arg Phe Asn Ser
 35 40 45
 Ile Pro Val Val Arg Lys Tyr Glu Leu Gly Ser Ala
 50 55 60

<210> 9046
 <211> 442
 <212> PRT
 <213> B.fragilis

<400> 9046
 Gly Ser Ala Leu Tyr His Leu Phe Ser Leu Phe Cys Leu Gln Phe Thr
 1 5 10 15
 Ile Tyr Asn Leu Gln Ile Lys Ala Asn Ile Thr Thr Phe Val Val Ala
 20 25 30
 Lys Lys Glu Met Met Lys Glu Asn Pro Lys His Ile Arg Ile Ser Glu
 35 40 45
 Tyr Asn Tyr Pro Leu Pro Asp Glu Arg Ile Ala Lys Phe Pro Leu Pro
 50 55 60
 Val Arg Asp Gln Ser Lys Leu Leu Ile Tyr Arg His Gly Glu Val Ser
 65 70 75 80
 Glu Asp Val Phe Thr Ser Leu Pro Glu Tyr Leu Pro Ala Gly Ser Leu
 85 90 95
 Met Ile Phe Asn Asn Thr Lys Val Ile Gln Ala Arg Leu His Phe Arg
 100 105 110
 Lys Glu Thr Gly Ala Leu Ile Glu Val Phe Cys Leu Glu Pro Ile Gln
 115 120 125
 Pro Asn Asp Tyr Val Leu Asn Phe Gln Gln Thr Glu His Ala Ala Trp
 130 135 140
 Leu Cys Met Val Gly Asn Leu Lys Lys Trp Lys Asp Gly Pro Leu Cys
 145 150 155 160
 Arg Glu Met Thr Val Lys Gly Phe Pro Ile Thr Leu Thr Ala Thr Arg

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<210> 9047
<211> 81
<212> PRT
<213> B.fragilis
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<210> 9048
<211> 591
<212> PRT
<213> B.fragilis
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<400> 9048

Glu Lys Phe Arg Ile Phe Ala Ser Lys Ile Glu Leu Ile Ser Asn Glu
 1 5 10 15
 Met Asn Ile Leu Glu Leu Ser Glu Gln Glu Ile Ile Arg Arg Asn Ser
 20 25 30
 Leu Asn Glu Leu Arg Ala Met Gly Ile Glu Pro Tyr Pro Ala Ala Glu
 35 40 45
 Tyr Val Thr Asn Ala Phe Ser Thr Asp Ile Lys Ala Glu Phe Lys Asp
 50 55 60
 Asp Glu Thr Pro Arg Gln Val Ser Val Ala Gly Arg Met Met Ser Arg
 65 70 75 80
 Arg Ile Met Gly Lys Ala Ser Phe Ile Glu Leu Gln Asp Ser Lys Gly
 85 90 95
 Arg Ile Gln Val Tyr Ile Thr Arg Asp Asp Ile Cys Pro Gly Glu Asp
 100 105 110
 Lys Glu Met Tyr Asn Thr Val Phe Lys Arg Leu Leu Asp Leu Gly Asp
 115 120 125
 Phe Ile Gly Ile Glu Gly Phe Val Phe Arg Thr Gln Met Gly Glu Ile
 130 135 140
 Ser Ile His Ala Gln Lys Leu Thr Val Leu Ala Lys Ser Ile Lys Pro
 145 150 155 160
 Leu Pro Ile Val Lys Tyr Lys Asp Gly Val Thr Tyr Asp Ser Phe Glu
 165 170 175
 Asp Pro Glu Leu Arg Tyr Arg Gln Arg Tyr Val Asp Leu Ala Val Asn
 180 185 190
 Glu Gly Val Lys Asp Ile Phe Ile Lys Arg Ser Lys Val Tyr Ser Ser
 195 200 205
 Met Arg Glu Tyr Phe Asn Ser Lys Gly Tyr Met Glu Val Glu Thr Pro
 210 215 220
 Ile Leu Gln Ala Ile Ala Gly Gly Ala Ala Ala Arg Pro Phe Met Thr
 225 230 235 240
 His His Asn Ala Leu Asp Ile Pro Leu Tyr Met Arg Ile Ala Ser Glu
 245 250 255
 Leu Tyr Leu Lys Arg Leu Ile Val Gly Gly Phe Glu Gly Val Tyr Glu
 260 265 270
 Ile Gly Lys Asn Phe Arg Asn Glu Gly Met Asp Arg Thr His Asn Pro
 275 280 285
 Glu Phe Thr Cys Met Glu Ile Tyr Val Ala Tyr Lys Asp Tyr Asn Trp
 290 295 300
 Met Met Glu Phe Thr Glu Lys Met Ile Glu Lys Ile Cys Leu Asp Val
 305 310 315 320
 Asn Gly Thr Thr Glu Val Lys Val Gly Asp Asn Ile Ile Asn Phe Lys
 325 330 335
 Ala Pro Tyr Lys Arg Val Thr Met Leu Gly Ala Ile Lys Glu His Thr
 340 345 350
 Gly Tyr Asp Leu Thr Gly Met Asn Glu Glu Gln Ile Arg Glu Val Cys
 355 360 365
 Lys Lys Leu Asn Met Glu Ile Asp Asp Thr Met Gly Lys Gly Lys Leu
 370 375 380
 Ile Asp Glu Ile Phe Gly Glu Phe Cys Glu Gly Thr Tyr Ile Gln Pro
 385 390 395 400
 Thr Phe Ile Thr Asp Tyr Pro Ile Glu Met Ser Pro Leu Thr Lys Lys
 405 410 415
 His Arg Asp Asn Pro Glu Leu Thr Glu Arg Phe Glu Leu Met Val Asn
 420 425 430
 Gly Lys Glu Leu Cys Asn Ala Tyr Ser Glu Leu Asn Asp Pro Ile Asp
 435 440 445
 Gln Leu Glu Arg Phe Glu Asp Gln Met Lys Leu Ser Glu Lys Gly Asp

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      450              455              460
Asp Glu Ala Met Ile Ile Asp Lys Asp Phe Val Arg Ala Leu Glu Tyr
465              470              475              480
Gly Met Pro Pro Thr Ser Gly Met Gly Ile Gly Met Asp Arg Leu Thr
      485              490              495
Met Leu Met Thr Gly Gln Ser Thr Ile Gln Glu Val Leu Phe Phe Pro
      500              505              510
Gln Met Arg Pro Glu Lys Val Val Pro Lys Asp Ser Ala Ser Lys Phe
      515              520              525
Met Glu Leu Gly Ile Ala Glu Glu Trp Val Pro Val Ile Gln Lys Ala
      530              535              540
Gly Tyr Asn Gln Val Ala Asp Met Lys Glu Val Asn Pro Gln Lys Phe
      545              550              555              560
His Gln Asp Ile Cys Gly Ile Asn Lys Lys Tyr Lys Leu Glu Leu Thr
      565              570              575
Asn Pro Ser Val Asn Asp Val Ala Glu Trp Ile Gln Lys Ile Lys
      580              585              590

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<210> 9049
 <211> 110
 <212> PRT
 <213> B.fragilis

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<400> 9049
His Arg Ile Arg Gln Ile Glu Leu Asn Leu Leu Leu Ile Asn Asp Ile
1              5              10              15
Tyr Leu Cys Lys Ser Val Tyr Ser Val Val Asn Thr Ser Leu Gly Thr
      20              25              30
Pro Ser Asp Thr Arg Ile Ile Ile Gln Phe Arg Ser Ile Thr Gln Lys
      35              40              45
Ile Asp Ile Met Ile Lys Leu Lys Leu Ser Ile Leu Val Trp Ala Ile
      50              55              60
Gly Leu Ser Met Thr Ala Phe Ser Gln Thr Thr Ser Ser Leu Arg Ala
      65              70              75              80
Lys Val Leu Thr Leu Asn Asp Tyr Pro Asp Ala Leu Arg Leu Trp Glu
      85              90              95
Leu Tyr Asn Asp Ser Ala Ser Val Glu Gln Lys Asn Pro Ser
      100              105              110

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<210> 9050
 <211> 183
 <212> PRT
 <213> B.fragilis

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<400> 9050
Arg Val His Arg Gly His Thr Lys Pro Ser Glu Val Leu Val His Ala
1              5              10              15
Gly His Glu Pro Phe Lys Met Ala Arg Lys Glu Ala Gly Ile Asp Arg
      20              25              30
Thr Pro Asp Asn Thr Val Asn Lys Tyr Gln Phe Ser Ala Pro Phe Gln
      35              40              45
Trp Asn Phe Leu Ser Thr Leu His Val Asn Leu Lys Phe Leu Ser Ala
      50              55              60
Glu Phe Ile His Ile Gly His Gly His Ser Phe Ile Ile Gly Phe His
      65              70              75              80
Tyr Gln Met His Leu Ala Glu Leu Ser Gly Thr Thr Arg Leu Leu Phe
      85              90              95
Val Thr Ile Val Gly Thr Gly Gly Phe Cys Asp Gly Phe Thr Ile Arg
      100              105              110

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Asp Leu Arg Phe Phe Lys Phe His Leu Lys Leu Phe Ile Val Leu Gln
 115 120 125
 Thr Pro Phe Gln Arg Thr Glu Val Glu Phe Ser Leu Ala Met His Asp
 130 135 140
 Gly Leu Phe Gln Phe Phe Arg Leu Phe Asp Asp Pro Ser Arg Ile Phe
 145 150 155 160
 Leu Thr His Thr Val Gln Asp Gly His His Leu Phe Arg Ile Gly Leu
 165 170 175
 Val His Arg Leu Asp Gly Ala
 180

<210> 9051

<211> 567

<212> PRT

<213> B.fragilis

<400> 9051

Phe Cys Thr Arg Leu His Lys Ile Ile Asn Tyr Tyr Ile Met Asp Trp
 1 5 10 15
 Leu Gln Asp Leu Leu Trp Asn Pro Asn Ser Val Ala His Ile Val Phe
 20 25 30
 Leu Tyr Ala Phe Val Val Ala Ala Gly Val Tyr Leu Gly Lys Ile Lys
 35 40 45
 Ile Phe Gly Val Ser Leu Gly Phe Thr Phe Val Leu Phe Ala Gly Ile
 50 55 60
 Leu Met Gly His Phe Gly Phe Thr Gly Asp Thr His Ile Leu His Phe
 65 70 75 80
 Ile Arg Glu Phe Gly Leu Ile Leu Phe Val Phe Cys Ile Gly Leu Gln
 85 90 95
 Val Gly Pro Ser Phe Phe Ser Ser Phe Lys Lys Gly Gly Met Thr Leu
 100 105 110
 Asn Met Leu Ala Val Gly Ile Val Val Leu Asn Ile Ala Val Ala Met
 115 120 125
 Ala Leu Tyr Phe Ile Leu Gly Gly Arg Ile Glu Leu Pro Met Met Val
 130 135 140
 Gly Ile Leu Tyr Gly Ala Val Thr Asn Thr Pro Gly Leu Gly Ala Ala
 145 150 155 160
 Gln Glu Ala Leu Asn Gln Leu Ser Tyr Ser Gly Pro Gln Ile Ala Leu
 165 170 175
 Gly Tyr Ala Cys Ala Tyr Pro Leu Gly Val Val Gly Ile Ile Gly Ser
 180 185 190
 Ile Ile Ala Val Arg Tyr Ile Phe Arg Ile Asn Phe Ala Lys Glu Glu
 195 200 205
 Glu Asn Trp Asn Gln Glu Thr Asp Gly Thr His His Lys Pro His Leu
 210 215 220
 Met Ser Leu Glu Val His Asn Glu Ala Ile Tyr Gly Lys Thr Leu Gly
 225 230 235 240
 Thr Ile Ser Ser Phe Leu Gly Arg Pro Phe Val Cys Ser Arg Ile Arg
 245 250 255
 Lys Asn Gly His Val Ser Ile Pro Asn His Gly Thr Ile Leu Glu Gln
 260 265 270
 Asn Asp Gln Leu Phe Val Val Cys Ser Glu Glu Asp Ser Asp Ala Ile
 275 280 285
 Val Ala Phe Ile Gly Arg Glu Val Gln Val Asp Trp Glu Lys Gln Asp
 290 295 300
 Met Pro Met Val Ser Arg Ile Leu Val Thr Lys Pro Glu Ile Asn
 305 310 315 320
 Gly Lys Lys Leu Gly Met Leu Asn Phe Arg Ser Met Tyr Asn Val Asn
 325 330 335

Ile Thr Arg Val Asn Arg Ser Gly Val Asp Leu Phe Ala Asn Pro Asn
 340 345 350
 Leu Ile Leu Gln Val Gly Asp Arg Val Met Val Val Gly Ser Glu Asp
 355 360 365
 Ala Val Glu Arg Val Ala Ser Val Leu Gly Asn Ser Leu Lys Arg Leu
 370 375 380
 Asn Glu Pro Asn Ile Ile Thr Leu Phe Val Gly Ile Phe Leu Gly Ile
 385 390 395 400
 Leu Cys Gly Ser Leu Pro Ile Ala Phe Pro Gly Met Pro Thr Pro Val
 405 410 415
 Lys Leu Gly Leu Ala Gly Gly Pro Leu Val Val Ala Ile Leu Ile Gly
 420 425 430
 Arg Phe Gly His Lys Leu His Leu Val Thr Tyr Thr Thr Gln Ser Ala
 435 440 445
 Asn Leu Met Ile Arg Glu Ile Gly Ile Val Leu Phe Leu Ala Ser Val
 450 455 460
 Gly Ile Glu Ala Gly Ala Asn Phe Val Asp Thr Val Ile His Gly Asp
 465 470 475 480
 Gly Leu Leu Tyr Val Gly Cys Gly Phe Leu Ile Thr Ile Ile Pro Leu
 485 490 495
 Leu Ile Ile Gly Val Ile Ala Arg Ser Tyr Tyr Lys Ile Asn Tyr Phe
 500 505 510
 Met Leu Met Gly Leu Ile Ala Gly Ser Asn Thr Asp Pro Pro Ala Leu
 515 520 525
 Ala Tyr Ser Asn Gln Ala Thr Gly Ser Asp Ala Pro Ala Val Gly Tyr
 530 535 540
 Ser Thr Val Tyr Pro Leu Ser Met Phe Leu Arg Ile Leu Ala Gly Gln
 545 550 555 560
 Met Ile Leu Leu Leu Met Met
 565

<210> 9052

<211> 311

<212> PRT

<213> B.fragilis

<400> 9052

Arg Gly Tyr Arg Thr Glu Arg Asn Tyr Asn Thr Ile Asn Met Lys Ser
 1 5 10 15
 Lys Leu Leu Tyr Leu Leu Thr Tyr Val Gly Met Trp Leu Leu Ala Val
 20 25 30
 Leu Pro Phe Pro Val Leu Tyr Ala Leu Ser Asp Phe Ile Tyr Phe Trp
 35 40 45
 Leu Tyr His Val Ile Gly Tyr Arg Arg Lys Val Val Arg Thr Asn Leu
 50 55 60
 Lys Asn Ser Phe Pro Glu Lys Ser Ala Ala Glu Leu Lys Ala Ile Glu
 65 70 75 80
 Arg Lys Phe Phe His Tyr Leu Cys Asp Tyr Met Leu Glu Asp Val Lys
 85 90 95
 Met Leu Arg Met Ser Glu Lys Glu Leu Cys Lys Arg Met Thr Tyr Glu
 100 105 110
 Asn Lys Glu Thr Tyr Leu Arg Met Ile Asp Glu Arg Gly Gly Ile Val
 115 120 125
 Leu Leu Ile Pro His Tyr Ala Asn Phe Glu Trp Ile Thr Gly Met Gly
 130 135 140
 Met Ile Met Arg Pro Gly Asp Val Pro Val Gln Val Tyr Lys Pro Leu
 145 150 155 160
 Lys Asp Val Tyr Leu Asp Gly Leu Phe Lys Tyr Ile Arg Ala Arg Phe
 165 170 175

Gly Gly Tyr Asn Val Pro Lys His Ser Thr Ala Arg Glu Val Ile Lys
 180 185 190
 Leu Lys Arg Ala Gly Lys Lys Met Ala Ile Gly Leu Ile Thr Asp Gln
 195 200 205
 Ser Pro Asn Met His Glu Ala His Tyr Trp Thr Thr Phe Leu Asn Gln
 210 215 220
 Asp Thr Val Phe Met Asp Gly Ala Glu Arg Ile Ala Lys Met Met Asp
 225 230 235 240
 Phe Pro Val Phe Tyr Cys Glu Leu Arg Lys Glu Arg Arg Gly Tyr Cys
 245 250 255
 Arg Val Asp Phe Asp Leu Val Thr Asp Arg Pro Lys Glu Thr Ala Asp
 260 265 270
 Gly Glu Ile Thr Glu Ile Phe Ala Arg Arg Leu Glu Gln Thr Ile Arg
 275 280 285
 Lys Glu Pro Ala Tyr Trp Leu Trp Ser His Lys Arg Trp Lys Leu Lys
 290 295 300
 Arg Pro Glu Lys Lys Asn Glu
 305 310

<210> 9053

<211> 633

<212> PRT

<213> B.fragilis

<400> 9053

Leu Ile Asn Arg Lys Met Lys Lys Gln Asn Ser Ile Tyr Thr Leu Leu
 1 5 10 15
 Ile Ala Leu Leu Cys Phe Val Ser Ser Cys Asp Tyr Leu Gly Val Ser
 20 25 30
 Asp Gln Leu Ala Gly Gly Leu Gln Asn Thr Glu Gln Val Phe Asp Asn
 35 40 45
 Val Ser Tyr Thr Lys Arg Trp Tyr Ala Asn Val Phe Ala Gly Ile Pro
 50 55 60
 Asp Tyr Ser Gly Ile Asn Ser Val Asn Val Gly Ala Phe Lys Asn Pro
 65 70 75 80
 Trp Thr Gly Met Cys Asp Glu Leu Val Val Gly Tyr Gly Asn Ser Ser
 85 90 95
 Lys Tyr Asn Asn Ser Asp Arg Asn Ala Ala Asn Met Gly Phe His Arg
 100 105 110
 Tyr Gly Asp Cys Tyr Lys Tyr Ile Arg Gln Ala Asn Ile Phe Leu Gln
 115 120 125
 Lys Ala His Pro Ile Met Thr Thr Gly Thr Gln Gly Asp Gln Leu Leu
 130 135 140
 Glu Asp Glu Leu Thr Gln Met Lys Ala Asn Val Arg Phe Met Arg Ala
 145 150 155 160
 Phe Tyr His Tyr Leu Leu Phe Glu Gln Tyr Gly Pro Ile Ile Leu Val
 165 170 175
 Lys Asp Lys Ile Tyr Asn Ala Thr Glu Asp Gln Asp Val Pro Arg Asn
 180 185 190
 Thr Val Asp Glu Val Ile Glu Tyr Ile Asp Ser Glu Leu Thr Ala Val
 195 200 205
 Ala Ser Glu Leu Thr Gln Glu Pro Ile Phe Glu Asp Lys Asp Tyr Arg
 210 215 220
 Ala Trp Pro Thr Lys Gly Val Ala Leu Ala Val Arg Ala Lys Leu Trp
 225 230 235 240
 Leu Tyr Ala Ala Ser Pro Leu Leu Asn Gly Gly Tyr Arg Glu Ala Leu
 245 250 255
 Ser Val Thr Asn Pro Asp Gly Thr Arg Leu Phe Pro Asp Tyr Asp Ala
 260 265 270

Gly Lys Trp Glu Lys Ala Leu Ala Ala Cys Lys Asp Phe Ile Asp Tyr
 275 280 285
 Ala Glu Ala Gly Arg Tyr Glu Leu Tyr Lys Glu Tyr Lys Asp Asp Asn
 290 295 300
 Gly Ala Val Ile Asp Pro Asp Lys Ser Val Tyr Asn Leu Phe Gln Lys
 305 310 315 320
 Tyr Thr His Glu Ile Ile Trp Ala Thr Ala Asn Asn Asp Trp Gly Gly
 325 330 335
 Met Asn Gly Asp Ala Phe Asp Arg Arg Ile Ala Pro Arg Cys Glu Lys
 340 345 350
 Asn Gly Leu Gly Ser Thr Gly Val Thr Gln Glu Leu Val Asp Ala Phe
 355 360 365
 Tyr Met Lys Asp Gly Phe Pro Val Ser Ala Thr Ala Tyr Leu Pro Gln
 370 375 380
 Ser Thr Leu Tyr Gln Glu Glu Gly Tyr Gly Thr Tyr Lys Asp Gln Asn
 385 390 395 400
 Asp Asn Phe Ser Lys Lys Tyr Thr Asn Val Thr Val Ser Asn Arg Tyr
 405 410 415
 Leu Asn Arg Glu Pro Arg Phe Tyr Asn Thr Val Phe Phe Asn Gly Arg
 420 425 430
 Gln Trp Pro Val Ser Cys Asn Gln Val Leu Phe Tyr Asn Gly Gly Asn
 435 440 445
 Ser Gly Val Gln Glu Gly Gln Ala Thr Leu Thr Gly Tyr Met Leu Phe
 450 455 460
 Lys Arg Phe Asn Arg Ser Val Ser Leu Thr Asn Pro Gly Val Ala Ser
 465 470 475 480
 Gln Phe Arg Pro Ser Ile Ile Phe Arg Leu Ala Asp Phe Tyr Leu Met
 485 490 495
 Tyr Ala Glu Ala Ala Asn Glu Val Asn Pro Asn Asp Ala Arg Val Leu
 500 505 510
 Lys Tyr Leu Asn Leu Val Arg Glu Arg Ala Gly Leu Pro Asp Ile Glu
 515 520 525
 Thr Leu Asn Pro Ala Ile Arg Gly Asn Gln Glu Leu Gln Arg Ala Ala
 530 535 540
 Ile Gln Arg Glu Arg Gln Ile Glu Leu Ala Thr Glu Gly Gln Arg Tyr
 545 550 555 560
 Phe Asp Val Arg Arg Trp Met Ile Ala Asp Lys Asn Gly Glu Gly Arg
 565 570 575
 Gln Asn Gly Tyr Val His Gly Met Asn Val Arg Gly Glu Ser Asn Asp
 580 585 590
 Lys Glu Asp Phe Asn Arg Ile Val Glu Ala Ser Gln Ile Val Phe Asn
 595 600 605
 Arg Lys Met Tyr Leu Tyr Pro Met Pro Asp Ser Glu Met Arg Lys Thr
 610 615 620
 Lys Asn Leu Val Gln Asn Pro Gly Trp
 625 630

<210> 9054

<211> 354

<212> PRT

<213> B.fragilis

<400> 9054

Ile Val Asn Arg Thr Met Lys Ile Gly Asp Lys Val Arg Phe Leu Ser
 1 5 10 15
 Glu Val Gly Gly Gly Ile Val Lys Gly Phe Arg Gly Lys Asp Ile Val
 20 25 30
 Leu Val Glu Asp Ala Asp Gly Phe Asp Ile Pro Met Gln Ile Arg Glu
 35 40 45

Cys Val Val Ile Asp Thr Asp Asp Tyr Asn Met Thr Arg Lys Ala Ala
 50 55 60
 Pro Ala Pro Lys Lys Pro Glu Glu Pro Val Lys Pro Val Lys Pro Glu
 65 70 75 80
 Ile Pro Val Val Arg Ser Ala Glu Val Arg Gly Gly Asp Val Leu Asn
 85 90 95
 Val Phe Leu Ala Tyr Val Pro Glu Asp Val Lys Ala Ile Ser Ser Thr
 100 105 110
 Ser Phe Glu Ala Tyr Leu Val Asn Asp Ser Asn Tyr Tyr Leu Tyr Tyr
 115 120 125
 Thr Tyr Gln Ser Ala Glu Gly Lys Ala Trp Lys Thr Arg Ser His Gly
 130 135 140
 Leu Val Glu Pro Asn Thr Lys Leu Leu Leu Glu Glu Phe Thr Lys Asp
 145 150 155 160
 Met Leu Asn Glu Met Glu His Val Ala Val Gln Phe Ile Ala Phe Lys
 165 170 175
 Asp Gly Arg Thr Ala Pro Leu Lys Pro Ala Val Cys Val Glu Leu Arg
 180 185 190
 Ile Asp Thr Val Lys Phe Tyr Lys Leu His Thr Phe Arg Glu Ser Asp
 195 200 205
 Phe Phe Glu Gln Pro Ala Leu Val Tyr Asp Ile Val Lys Asp Asp Val
 210 215 220
 Pro Thr Arg Gln Val Phe Val Ser Ala Glu Glu Leu Gln Ser Val Leu
 225 230 235 240
 Ile Gln Lys Lys Glu Val Asp Lys Pro Lys Ser Gln Pro Ile Val Lys
 245 250 255
 Arg Gly Gly Lys Asn Glu Ile Leu Glu Ile Asp Leu His Ile Asn Glu
 260 265 270
 Leu Leu Asp Asp Thr Arg Gly Met Gly Asn Ala Glu Ile Leu Asn Tyr
 275 280 285
 Gln Leu Asp Lys Phe Arg Glu Val Met Glu Lys Tyr Lys Ala Lys Arg
 290 295 300
 Glu Gln Lys Ile Val Phe Ile His Gly Lys Gly Asp Gly Val Leu Arg
 305 310 315 320
 Lys Ala Leu Ile Asp Glu Leu Lys Arg Lys Tyr Ser Asn Cys Arg Tyr
 325 330 335
 Gln Asp Ala Ser Phe Gln Glu Tyr Gly Phe Gly Ala Thr Met Val Thr
 340 345 350
 Ile Lys

<210> 9055

<211> 161

<212> PRT

<213> B.fragilis

<400> 9055

Cys Lys Arg Leu Ile Asn Lys Ile Ile Ile Met Asp Ile Ile Ser Leu
 1 5 10 15
 Arg Lys Ser Pro Gln Tyr Leu Glu Glu Ala Ile Ala Tyr Phe Gln Arg
 20 25 30
 Lys Trp Ala Asp Glu Asn Ser Arg Met Val Tyr Asp Asn Cys Phe Arg
 35 40 45
 Thr Cys Leu Glu Ser Glu Ser Pro Leu Pro Gln Trp Tyr Leu Leu Ile
 50 55 60
 Asn Gly Glu Gly Glu Ile Ile Gly Cys Ala Gly Leu Ala Thr Asn Asp
 65 70 75 80
 Phe Asn Ser Arg Met Asp Leu Tyr Pro Trp Leu Val Ala Leu Phe Ile
 85 90 95

Glu Glu Gln Tyr Arg Gly His Asn Tyr Gly Asn Leu Leu Ile Lys Ala
 100 105 110
 Val Glu Glu Asp Thr Arg Arg Leu Gly Phe Gly Asn Leu Tyr Leu Cys
 115 120 125
 Thr Thr His Thr Gly Tyr Tyr Glu His Phe Asn Phe Val Tyr Ile Gly
 130 135 140
 Asp Cys Tyr His Pro Trp Gly Glu His Thr Arg Val Tyr Gln Lys Glu
 145 150 155 160
 Ile

<210> 9056
 <211> 177
 <212> PRT
 <213> B.fragilis

<400> 9056
 Asn Met Gln Ser Asp Asn Asn Gln Glu Met Phe Pro Ile Val Asp Glu
 1 5 10 15
 Gln Gly Thr Ile Thr Gly Ala Ala Thr Arg Gly Glu Cys His Ser Gly
 20 25 30
 Ser Lys Leu Leu His Pro Val Val His Leu His Val Phe Asn Ser Lys
 35 40 45
 Gly Glu Leu Tyr Leu Gln Lys Arg Pro Glu Trp Lys Asp Ile Gln Pro
 50 55 60
 Gly Lys Trp Asp Thr Ser Val Gly Gly His Ile Asp Leu Gly Glu Ser
 65 70 75 80
 Val Glu Ile Ala Leu Lys Arg Glu Val Ala Glu Glu Leu Gly Ile Thr
 85 90 95
 Asp Phe Thr Pro Glu Leu Leu Thr Ser Tyr Val Phe Glu Ser Ala Arg
 100 105 110
 Glu Arg Glu Leu Val Phe Val His Lys Thr Val Tyr Asp Gly Glu Ile
 115 120 125
 His Pro Ser Asp Glu Leu Asp Gly Gly Arg Phe Trp Ser Tyr Glu Glu
 130 135 140
 Ile Lys Thr Asn Leu Gly Lys Gly Val Phe Thr Pro Asn Phe Glu Ser
 145 150 155 160
 Glu Ile Asp Lys Val Glu Ile Phe Ser Ser Thr Ser Pro Lys Glu Ala
 165 170 175
 Val

<210> 9057
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9057
 Val Phe Met Arg Arg Ser Ile Leu Asp Ile Phe Leu Phe Leu Leu Val
 1 5 10 15
 Ile Ile Ser Thr Ala Ala Cys Asn Asn Asp Leu Pro Phe Asp Leu Lys
 20 25 30
 Glu Asn Pro Pro Lys Leu Val Met Asn Ala Ile Ile Asn Ala Asp Ser
 35 40 45
 Thr Tyr Asn Thr Leu Phe Leu Asn Leu Thr Gly Arg Asn Gln Ile Gly
 50 55 60
 Gln Ile Lys Gly Ala Thr Val Glu Val Arg Ile Asn Gly Ser Leu Ser
 65 70 75 80
 Glu Thr Leu Arg Pro Asp Pro His Ser Ser Asp Lys Gly Arg Phe Tyr

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<210> 9058
<211> 728
<212> PRT
<213> B.fragilis
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<400>	9058														
Leu	Asp	Met	Arg	Lys	Ser	Asn	Pro	Asp	Phe	His	His	Ile	Arg	Ser	Tyr
1				5					10					15	
Ile	Leu	Met	Cys	Val	Val	Ser	Leu	Thr	Phe	Ser	Thr	Ile	Tyr	Ala	Gln
			20					25					30		
Thr	Pro	Glu	Pro	Lys	Leu	Thr	Leu	Lys	Leu	Gln	Asn	Thr	Ser	Leu	Ser
		35					40					45			
Glu	Val	Ile	Arg	Gln	Ile	Glu	Gln	Asp	Thr	Gly	Phe	Ser	Phe	Ile	Tyr
	50					55					60				
Gly	Glu	Glu	Val	Lys	Leu	Asp	His	Lys	Val	Ser	Leu	Asn	Val	Gln	Lys
65					70					75					80
Lys	Pro	Leu	Arg	Glu	Val	Leu	Asn	Leu	Leu	Phe	Ala	Asn	Lys	Pro	Ile
				85					90					95	
Ser	Tyr	Lys	Ile	Thr	Gly	Lys	His	Ile	Leu	Leu	Gln	Lys	Thr	Pro	Pro
			100					105					110		
Lys	Pro	Val	Ser	Arg	Lys	Phe	Thr	Val	Ser	Gly	Tyr	Val	Thr	Asp	Gly
		115					120					125			
Ala	Ser	Ala	Glu	Thr	Leu	Ile	Gly	Ala	Asn	Ile	Leu	Glu	Ser	Arg	His
	130					135					140				
His	Gln	Gly	Thr	Thr	Thr	Asn	Pro	Tyr	Gly	Phe	Tyr	Ser	Ile	Thr	Leu
145					150					155					160
Pro	Glu	Gly	Glu	Ala	Arg	Leu	Ser	Phe	Ser	Tyr	Leu	Gly	Tyr	Thr	Gly
				165					170					175	
Gln	Gln	His	Val	Leu	Asn	Leu	Thr	Ala	Asp	Thr	Leu	Leu	Asn	Ile	Arg
			180					185					190		
Met	Lys	Asp	Asn	Asn	Met	Leu	Gln	Glu	Val	Val	Ile	Val	Ser	Asp	Lys
		195					200					205			
Ala	Glu	Ser	Gly	Val	Met	Ala	Thr	Gln	Met	Gly	Ala	Ser	Glu	Ile	Pro
	210					215					220				
Met	Thr	Gln	Ile	Lys	Asn	Thr	Pro	Ser	Ile	Leu	Gly	Glu	Ala	Asp	Val
225					230					235					240
Met	Lys	Ala	Ile	Gln	Leu	Met	Pro	Gly	Val	Gln	Ala	Gly	Met	Glu	Gly
				245					250					255	
Ser	Ala	Gly	Leu	Tyr	Val	Arg	Gly	Gly	Gly	Pro	Asp	Gln	Asn	Leu	Ile
			260					265					270		
Leu	Leu	Asp	Gly	Val	Pro	Val	Tyr	Asn	Val	Asp	His	Leu	Leu	Gly	Phe
	275						280					285			
Phe	Ser	Val	Phe	Thr	Pro	Glu	Ala	Val	Lys	Lys	Val	Thr	Leu	Phe	Lys
	290					295					300				
Ser	Ser	Phe	Pro	Ala	Arg	Phe	Gly	Gly	Arg	Leu	Ser	Ser	Val	Ile	Asp

305 310 315 320
 Val Arg Thr Asn Asp Gly Asp Met Lys Asn Tyr His Gly Val Val Ser
 325 330 335
 Val Gly Leu Leu Thr Ser Lys Ile Asn Phe Glu Gly Pro Ile Ile Lys
 340 345 350
 Asn Arg Thr Ser Phe Asn Ile Ser Ala Arg Arg Ser Tyr Ile Asp Leu
 355 360 365
 Leu Ala Lys Pro Phe Met Pro Lys Asp Glu Lys Tyr Ser Tyr Tyr Phe
 370 375 380
 Phe Asp Val Asn Ala Lys Ile Asn His Lys Phe Ser Asp Arg Ser Arg
 385 390 395 400
 Leu Phe Leu Ser Ala Tyr Asn Gly Lys Asp His Phe Met Thr Lys Tyr
 405 410 415
 Asp Asp Thr Tyr Tyr Gly Asp Glu Asp Lys Tyr Arg Asp Gly Gly Lys
 420 425 430
 Met Asn Trp Gly Asn Thr Ile Val Ser Gly Arg Trp Asn Tyr Ile Phe
 435 440 445
 Asn Asn Lys Leu Phe Ser Asn Thr Thr Val Ala Phe Asn Asn Tyr Lys
 450 455 460
 Phe Asp Val Ser Thr Phe Thr Lys Asn Glu Ile His Thr Asn Asn Gln
 465 470 475 480
 Ile Thr Trp Asn Arg Tyr Lys Ala Asp Tyr Lys Ser Gly Ile Arg Asp
 485 490 495
 Trp Ser Ala Gln Ile Asp Phe Asp Tyr Asn Pro Ile Pro Thr His His
 500 505 510
 Val Lys Phe Gly Val Gln Tyr Leu His His Ser Phe Arg Pro Glu Val
 515 520 525
 Ser Thr Ser Lys Ile Phe Asp Lys Thr Gly Glu Thr Ile Glu Arg Asp
 530 535 540
 Thr Thr Tyr Tyr Thr Thr Ser Asn Ser Glu Ile Leu Ala His Glu Ala
 545 550 555 560
 Ser Ala Tyr Leu Glu Asp Asn Phe Asn Leu Ser Ser Arg Leu Arg Met
 565 570 575
 Asn Leu Gly Leu His Phe Ser Thr Phe Gln Val Gln Lys Lys Asn Tyr
 580 585 590
 Phe Ser Val Gln Pro Arg Ile Ser Ala Arg Tyr Gln Leu Ser Lys Asp
 595 600 605
 Val Val Leu Lys Ala Ser Tyr Thr Lys Met Ser Gln Tyr Val His Leu
 610 615 620
 Ile Ser Ser Met Pro Phe Ala Met Pro Thr Asp Leu Trp Val Pro Val
 625 630 635 640
 Thr Ser Lys Ile Lys Pro Met Gln Ala His Gln Val Ser Leu Gly Gly
 645 650 655
 Tyr Tyr Thr Gly Ile Asp Gly Trp Glu Phe Ser Ile Glu Gly Tyr Tyr
 660 665 670
 Lys Gly Met Lys Asn Val Leu Glu Tyr Lys Asp Gly Val Ser Phe Leu
 675 680 685
 Gly Ser Ser Thr Gly Trp Glu Asp Lys Val Glu Met Gly His Gly Pro
 690 695 700
 Leu Tyr Gly Cys Arg Val His Gly Thr Glu Asn His Arg Lys Asp Asn
 705 710 715 720
 Gly Met Ala Gly Ile Tyr Pro Gly
 725

<210> 9059

<211> 717

<212> PRT

<213> B.fragilis

<400> 9059

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Ser Lys Met Arg Lys Asp Phe Lys Asn Leu Asp Ile Tyr Ala Ala Phe
1      5      10      15
Gln Pro Ala Asn Gly Ala Glu Trp Gln Lys Ala Asn Gly Ile Glu Ala
20      25      30
Asn Trp Lys Thr Pro Glu His Ile Cys Val Lys Pro Val Tyr Thr Lys
35      40      45
Glu Asp Leu Glu Gly Met Glu His Leu Asp Tyr Ala Ala Gly Leu Pro
50      55      60
Pro Tyr Leu Arg Gly Pro Tyr Ser Val Met Tyr Thr Leu Arg Pro Trp
65      70      75      80
Thr Ile Arg Gln Tyr Ala Gly Phe Ser Thr Ala Glu Glu Ser Asn Ala
85      90      95
Phe Tyr Arg Arg Asn Leu Ala Ser Gly Gln Lys Gly Leu Ser Val Ala
100     105     110
Phe Asp Leu Ala Thr His Arg Gly Tyr Asp Pro Asp His Glu Arg Val
115     120     125
Val Gly Asp Val Gly Lys Ala Gly Val Ser Ile Cys Ser Leu Glu Asn
130     135     140
Met Lys Val Leu Phe Asp Gly Ile Pro Leu Asn Lys Met Ser Val Ser
145     150     155     160
Met Thr Met Asn Gly Ala Val Leu Pro Ile Met Ala Phe Tyr Ile Asn
165     170     175
Ala Gly Leu Glu Gln Gly Ala Lys Leu Glu Glu Met Ala Gly Thr Ile
180     185     190
Gln Asn Asp Ile Leu Lys Glu Phe Met Val Arg Asn Thr Tyr Ile Tyr
195     200     205
Pro Pro Ala Phe Ser Met Lys Ile Ile Ser Asp Ile Phe Glu Tyr Thr
210     215     220
Ser Gln Lys Met Pro Lys Phe Asn Ser Ile Ser Ile Ser Gly Tyr His
225     230     235     240
Met Gln Glu Ala Gly Ala Thr Ala Asp Ile Glu Leu Ala Tyr Thr Leu
245     250     255
Ala Asp Gly Leu Glu Tyr Leu Arg Ala Gly Val Ala Ala Gly Ile Asp
260     265     270
Ile Asp Ala Phe Ala Pro Arg Leu Ser Phe Phe Trp Ala Ile Gly Thr
275     280     285
Asn His Phe Met Glu Ile Ala Lys Met Arg Ala Ala Arg Met Leu Trp
290     295     300
Ala Lys Ile Val Lys Gln Phe Asn Pro Lys Asn Pro Lys Ser Leu Ala
305     310     315     320
Leu Arg Thr His Ser Gln Thr Ser Gly Trp Ser Leu Thr Glu Gln Asp
325     330     335
Pro Phe Asn Asn Val Gly Arg Thr Cys Ile Glu Ala Met Ala Ala Ala
340     345     350
Leu Gly His Thr Gln Ser Leu His Thr Asn Ala Leu Asp Glu Ala Ile
355     360     365
Ala Leu Pro Thr Asp Phe Ser Ala Arg Ile Ala Arg Asn Thr Gln Ile
370     375     380
Tyr Ile Gln Glu Glu Thr Tyr Ile Cys Lys Asn Val Asp Pro Trp Gly
385     390     395     400
Gly Ser Tyr Tyr Val Glu Ser Leu Thr Asn Glu Leu Ala His Ser Ala
405     410     415
Trp Glu His Ile Gln Glu Ile Glu Lys Leu Gly Gly Met Ala Lys Ala
420     425     430
Ile Glu Thr Gly Ile Pro Lys Met Arg Ile Glu Glu Ala Ala Ala Arg
435     440     445
Ala Gln Ala Arg Ile Asp Ser Gly Ser Gln Thr Ile Val Gly Val Asn
450     455     460

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Lys Tyr Arg Leu Glu Lys Glu Asp Pro Ile Asp Ile Leu Glu Val Asp
465                               470                               480
Asn Thr Ala Val Arg Lys Glu Gln Ile Glu Asn Leu Lys Arg Leu Lys
                               485                               490                               495
Glu Gly Arg Asn Gln Ala Glu Val Asp Lys Ala Leu Ala Ala Ile Thr
                               500                               505                               510
Glu Cys Val Lys Thr Gly Lys Gly Asn Leu Leu Glu Leu Ala Val Glu
                               515                               520                               525
Ala Ala Arg Val Arg Ala Thr Leu Gly Glu Ile Ser Tyr Ala Cys Glu
                               530                               535                               540
Gln Ile Val Gly Arg Tyr Lys Ala Ile Ile Arg Thr Ile Ser Gly Val
545                               550                               555                               560
Tyr Ser Ser Glu Ser Lys Gly Asp Ala Asp Phe Lys Arg Ala Cys Glu
                               565                               570                               575
Leu Thr Glu Lys Phe Ala Lys Lys Glu Gly Arg Gln Pro Arg Ile Met
                               580                               585                               590
Val Ala Lys Met Gly Gln Asp Gly His Asp Arg Gly Ala Lys Val Val
                               595                               600                               605
Ala Thr Gly Tyr Ala Asp Cys Gly Phe Asp Val Asp Met Gly Pro Leu
610                               615                               620
Phe Gln Thr Pro Ala Glu Ala Ala Arg Glu Ala Val Glu Asn Asp Val
625                               630                               635                               640
His Val Val Gly Val Ser Ser Leu Ala Ala Gly His Lys Thr Leu Val
                               645                               650                               655
Pro Gln Ile Ile Glu Glu Leu Lys Lys Leu Gly Arg Glu Asp Ile Val
                               660                               665                               670
Val Ile Ala Gly Gly Val Ile Pro Ala Gln Asp Tyr Asp Phe Leu Tyr
                               675                               680                               685
Lys Ala Gly Val Ala Ala Ile Phe Gly Pro Gly Thr Pro Val Ala Lys
690                               695                               700
Ala Ala Cys Gln Ile Leu Glu Ile Leu Met Asp Glu Asp
705                               710                               715

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<210> 9060

<211> 72

<212> PRT

<213> B.fragilis

<400> 9060

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Arg Arg Thr Gly Ser Arg Leu Phe Tyr Arg Ile Ser Ala Ile Asp Val
1                               5                               10                               15
Ser Pro Tyr Pro Cys Gly Thr Asn Asp Ile Val Ala Asn Asp Val Ile
                               20                               25                               30
Thr Ile His Pro Asp Thr Ala Met Ala Ser Tyr His Val Phe Ile Tyr
                               35                               40                               45
Ile Val Ile Gly His Phe Tyr Met Val Thr Ala Ser Ile Thr Lys Pro
50                               55                               60
Val Ser Ser Pro Gln Ile Leu Leu
65                               70

```

<210> 9061

<211> 201

<212> PRT

<213> B.fragilis

<400> 9061

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Thr Met Lys Gly Ser Leu Ile Ile Val Ser Phe Phe Ile Val Gly Thr
1                               5                               10                               15
Leu Cys Gly Leu Phe Gln Leu Ile Pro Tyr Asp Phe Ser Gln Ser Lys

```

```
<210> 9062
<211> 912
<212> PRT
<213> B.fragilis
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Lys	Leu	Ile	Leu	Lys	Pro	Thr	Gln	Gln	Lys	Arg	Phe	Lys	Leu	Met	Arg
1				5					10					15	
Lys	Pro	Phe	Met	Leu	Ile	Ser	Val	Leu	Pro	Ile	Thr	Val	His	Ile	Ser
			20					25					30		
His	Asp	Thr	Asp	Thr	Gly	Ser	Asn	Arg	Ile	Gly	Gly	Ile	Pro	Glu	Lys
			35				40					45			
Tyr	Ala	Phe	Lys	Asn	Lys	Val	Leu	Arg	Ser	Ile	Cys	Phe	Val	Leu	Phe
	50					55					60				
Leu	Leu	Ser	Ile	Gly	Leu	Asn	Ser	Ala	Phe	Ala	Gln	Val	Arg	Asn	Ala
65					70					75				80	
Ala	Gly	Leu	Val	Val	Asp	Glu	Asn	Gly	Gln	Pro	Leu	Ile	Gly	Val	Gln
				85					90					95	
Ile	Lys	Leu	Glu	Gly	Thr	Thr	Thr	Gly	Val	Ile	Thr	Asp	Val	Asp	Gly
			100					105					110		
Asn	Phe	Ser	Ile	Asn	Ala	Lys	Lys	Gly	Asp	Ile	Leu	Leu	Phe	Ser	Tyr
			115				120					125			
Val	Gly	Tyr	Glu	Pro	Gln	Arg	Ile	Thr	Tyr	Lys	Gly	Glu	Lys	Ile	Leu
	130					135					140				
Ala	Ile	Lys	Met	Leu	Pro	Asn	Thr	Glu	Leu	Leu	Asp	Glu	Val	Val	Val
145					150					155					160
Ile	Gly	Tyr	Gly	Lys	Gln	Lys	Lys	Asn	Ser	Val	Val	Ser	Ser	Ile	Asn
				165					170					175	
Ala	Ile	Gly	Pro	Lys	Glu	Leu	Ala	Val	Ser	Ser	Asn	Arg	Asn	Leu	Thr
			180					185					190		
Asn	Ser	Leu	Ala	Gly	Gln	Val	Pro	Gly	Leu	Ile	Ala	Val	Gln	Arg	Ser
		195					200					205			
Gly	Glu	Pro	Gly	Tyr	Asp	Asn	Ser	Glu	Phe	Trp	Ile	Arg	Gly	Val	Ser
	210					215					220				
Ser	Phe	Lys	Gly	Gly	Thr	Asn	Pro	Leu	Val	Leu	Val	Asp	Gly	Val	Pro

225					230					235				240	
Arg	Asn	Met	Gln	Asp	Ile	Glu	Pro	Asp	Glu	Ile	Glu	Ser	Phe	Thr	Leu
				245					250					255	
Leu	Lys	Asp	Ala	Ala	Ala	Thr	Ala	Val	Tyr	Gly	Ala	Glu	Gly	Ala	Asn
			260					265					270		
Gly	Val	Ile	Leu	Ile	Thr	Ser	Lys	Arg	Gly	Asn	Ser	Gln	Lys	Pro	Lys
		275					280					285			
Ile	Ser	Leu	Arg	Ala	Glu	Ser	Thr	Leu	Leu	Thr	Pro	Thr	Arg	Leu	Pro
	290					295					300				
Lys	Phe	Met	Asn	Ser	Val	Glu	Thr	Leu	Asp	Leu	Tyr	Asn	Glu	Ala	Leu
305					310					315				320	
Asn	Asn	Glu	Gly	Thr	Ala	Ser	Ile	Arg	Thr	Ala	Glu	Glu	Ile	Ala	Met
				325					330					335	
Tyr	Gly	Pro	Gly	Ala	Asp	Arg	Asp	Leu	Tyr	Pro	Asp	Thr	Asp	Trp	Leu
			340					345					350		
Arg	Glu	Met	Leu	Arg	Glu	His	Thr	Tyr	Asn	Met	Arg	Tyr	Thr	Leu	Asn
		355					360					365			
Val	Arg	Gly	Gly	Ser	Glu	Arg	Ala	Arg	Tyr	Phe	Val	Ser	Gly	Ala	Phe
	370					375					380				
Tyr	Gln	Glu	Asn	Gly	Ile	Phe	Lys	Glu	Gly	Lys	Lys	Asn	Glu	Tyr	Asp
385					390					395				400	
Asn	Asn	Ile	Gly	Leu	Lys	Arg	Tyr	Asn	Leu	Arg	Ser	Asn	Ile	Asp	Phe
				405					410					415	
Asp	Ala	Thr	Lys	Thr	Thr	Leu	Val	Lys	Val	Asp	Ile	Ser	Gly	Gln	Tyr
			420					425					430		
Leu	Gln	Thr	Asn	Tyr	Pro	Gly	Thr	Ser	Thr	Asn	Thr	Ile	Phe	Asn	Ser
			435					440				445			
Met	Cys	Arg	Thr	Pro	Ser	Tyr	Leu	Met	Pro	Ala	Glu	Tyr	Ser	Asp	Gly
	450					455					460				
Thr	Ile	Ala	Gly	His	Pro	Arg	Pro	Ser	Gly	Asn	Arg	Val	Asn	Pro	Tyr
465					470					475				480	
Asn	Leu	Leu	Met	Asn	Ser	Gly	Tyr	Ala	Lys	Glu	Trp	Arg	Thr	Ser	Ile
				485					490					495	
Gln	Ser	Lys	Leu	Glu	Val	Asp	Gln	Lys	Leu	Asp	Phe	Ile	Thr	Lys	Gly
			500					505					510		
Leu	Asn	Trp	Lys	Gly	Leu	Ile	Ser	Phe	Asp	Ala	Asp	Met	Lys	Tyr	Ile
	515						520					525			
Ala	Lys	Arg	Thr	Lys	Thr	Pro	Thr	Gln	Tyr	Leu	Ala	Thr	Gly	Arg	Asp
	530					535					540				
Glu	Asn	Gly	Gly	Leu	Gln	Phe	Lys	Lys	Val	Val	Glu	Gly	Ser	Asp	Val
545					550				555					560	
Leu	Thr	Glu	Lys	Leu	Glu	Asn	Ser	Ser	Asn	Lys	Lys	Ile	Tyr	Phe	Glu
				565					570					575	
Thr	Ser	Phe	Asn	Tyr	Asn	Arg	Thr	Phe	Ala	Gln	Lys	His	Asp	Val	Thr
			580					585					590		
Ala	Met	Val	Leu	Tyr	Met	Gln	Lys	Glu	Thr	Gln	Tyr	His	Asn	Asn	Ala
	595						600					605			
Leu	Pro	Tyr	Arg	Lys	Gln	Gly	Leu	Val	Gly	Arg	Ala	Thr	Tyr	Gly	Tyr
	610					615					620				
Asp	Gly	Arg	Tyr	Phe	Ile	Glu	Gly	Asn	Phe	Gly	Tyr	Thr	Gly	Ser	Glu
625					630					635				640	
Thr	Phe	Ala	Lys	Gly	Tyr	Arg	Phe	Gly	Phe	Phe	Pro	Ala	Met	Gly	Leu
				645				650						655	
Ala	Trp	Tyr	Val	Ser	Asn	Glu	Pro	Phe	Tyr	Pro	Glu	Val	Leu	Lys	Lys
			660					665					670		
Val	Val	Asn	Lys	Leu	Lys	Phe	Arg	Phe	Ser	Ile	Gly	Arg	Thr	Gly	Asn
		675					680					685			
Asp	Asp	Thr	Gly	Gly	Asp	Arg	Phe	Leu	Tyr	Arg	Gly	Thr	Met	Lys	Gln
	690					695					700				

Asp Asn Gly Gly Tyr Asp Leu Gly Phe Ser Asp Thr Gly Gly Met Gly
 705 710 715 720
 Gly Ile Gly Asn Gly Ile Thr Glu Ala Arg Phe Glu Ala Pro Tyr Leu
 725 730 735
 Ser Trp Glu Ile Glu Glu Lys Lys Asn Tyr Gly Ile Asp Leu Gly Leu
 740 745 750
 Phe Asp Asn Arg Ile Asp Leu Gln Val Asp Tyr Phe Asn Asn Lys Arg
 755 760 765
 Lys Ser Ile Leu Leu Gln Arg Asn Thr Val Ser Asn Val Thr Gly Phe
 770 775 780
 Gln Gln Met Pro Trp Gln Asn Phe Gly Ile Val Lys Asn His Gly Val
 785 790 795 800
 Asp Ala Ser Leu Ile Leu Asn Gln Lys Ile Gly Gln Val Asn Leu Ser
 805 810 815
 Ala Arg Gly Asn Phe Thr Phe Ala Arg Asn Glu Ile Ile Glu Tyr Asp
 820 825 830
 Gln Val Pro Gln Val Tyr Pro Trp Leu Glu Lys Arg Gly Thr Arg Leu
 835 840 845
 Asn Ser Asn Lys Leu Tyr Ile Ala Glu Gly Leu Tyr Thr Tyr Asp Asp
 850 855 860
 Phe Ile Ile Asn Gly Glu Gly Leu Asn Arg Thr Tyr Glu Leu Lys Pro
 865 870 875 880
 Gly Val Val Ser Gly Leu Ser Ser Gly Val Arg Pro Gly Asp Ile Lys
 885 890 895
 Tyr Lys Asp Leu Asn Gly Asp Gly Lys Ile Gly Leu Arg His Val Arg
 900 905 910

<210> 9063

<211> 264

<212> PRT

<213> B.fragilis

<400> 9063

Tyr Ile Ile Leu Thr Glu Leu Phe Tyr Lys Lys Leu Val Ile Asn Thr
 1 5 10 15
 Thr Tyr Gln Leu Ile Thr Ser Leu Met Asn Thr Met Phe Phe Asn Ala
 20 25 30
 Val Ser Cys Phe Phe Val Cys Ala Gly Leu Ile Ile Ala Leu Ile Leu
 35 40 45
 Ala Ile Asn Val Ile Phe His Arg Gln Ser Met Lys Ile Met Asn Ile
 50 55 60
 Val Trp Val Leu Thr Gly Leu Trp Gly His Tyr Phe Ala Leu Phe Ala
 65 70 75 80
 Tyr Tyr Thr Phe Gly Val Arg Lys Asp Asn Met Val Ala Thr Val Pro
 85 90 95
 Met Glu Asn Met Lys Met Asp Met Lys Ile Ser Met Glu Met Asp Met
 100 105 110
 Ser Glu Val Arg Pro Gln Trp Gln Ser Ile Thr Leu Ser Ala Leu His
 115 120 125
 Cys Gly Ala Gly Cys Thr Leu Ala Asp Ile Ile Gly Glu Trp Phe Thr
 130 135 140
 Tyr Trp Val Pro Leu Gln Ile Gly Gly Ser Leu Ile Ala Gly Ser Trp
 145 150 155 160
 Ala Leu Asp Phe Val Leu Ala Leu Ile Leu Gly Val Phe Phe Gln Phe
 165 170 175
 Ile Ala Ile Arg Glu Met Glu Ala Ile Ser Phe Arg Glu Ala Val Ser
 180 185 190
 Arg Ala Phe Lys Ala Asp Phe Phe Ser Leu Leu Ala Trp Gln Val Gly
 195 200 205

```

Met Tyr Ser Trp Met Ala Val Ala Thr Phe Ile Leu Phe Lys Asp Glu
 210                215                220
Ser Leu Glu Lys Thr Ser Trp Thr Phe Trp Phe Met Met Gln Ile Ala
225                230                235                240
Met Leu Leu Gly Phe Met Val Ser Tyr Pro Val Asn Ala Trp Leu Ile
                245                250                255
Lys Ser Gly Ile Lys Lys Gly Met
                260

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<210> 9064

<211> 392

<212> PRT

<213> B.fragilis

<400> 9064

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Lys Ile Ile Ile Ile Phe Ala Ile Ile Ile Asn Ile Ile Ile Leu Val
1          5          10          15
Met Ala Val Ile Asn Pro Phe Val Val Gly Gly Tyr Val Ser Pro Arg
          20          25          30
Tyr Phe Cys Asp Arg Val Ala Glu Thr Glu Asn Leu Ile Arg Asn Leu
          35          40          45
Ile Asn Gly Arg Asn Val Ala Leu Val Ser Thr Arg Arg Met Gly Lys
          50          55          60
Thr Gly Leu Ile Arg His Cys Phe Tyr Gln Pro Leu Ile Lys Glu Gly
65          70          75          80
Tyr Tyr Thr Phe Phe Ile Asp Ile Tyr Ala Thr Ser Ser Leu Lys Glu
          85          90          95
Phe Val Phe Ala Leu Gly Lys Gly Ile Phe Glu Lys Leu Lys Pro Gln
          100         105         110
Gly Asn Lys Phe Ile Asp Arg Phe Phe Ser Ile Ile Thr Ser Leu Arg
          115         120         125
Ile Gly Phe Lys Leu Asp Ser Ile Thr Gly Glu Pro Ile Leu Glu Leu
          130         135         140
Gly Leu Gly Asp Ile His Ala Pro Glu Thr Thr Leu Glu Glu Ile Phe
145         150         155         160
Ile Tyr Leu Glu Gln Ala Asp Lys Pro Cys Ile Val Ala Ile Asp Glu
          165         170         175
Phe Gln Gln Ile Ser Ser Tyr Pro Glu Lys Asn Leu Glu Ala Ile Leu
          180         185         190
Arg Thr Lys Val Gln His Cys Ser Asn Ser Asn Phe Val Phe Ala Gly
          195         200         205
Ser Gln Arg His Ile Met Met Asn Ile Phe Asn Ser Pro Ser Arg Pro
          210         215         220
Phe Tyr Gln Ser Val Ser Met Met His Leu Gly Ala Ile Pro Leu Glu
225         230         235         240
Val Tyr Lys Pro Phe Val Lys Gly Leu Phe Glu Glu Asn Gly Lys Lys
          245         250         255
Val Thr Asp Gln Leu Val Glu Asn Val Tyr Thr Leu Phe Asp Gly His
          260         265         270
Thr Trp Tyr Val Gln Leu Met Leu Asn Glu Leu Phe Ile Leu Thr Asp
          275         280         285
Lys Lys Gly Ile Cys Asp Val Pro Met Ile Asn Leu Ala Leu Asn Asn
          290         295         300
Ile Ile Ala Thr Gln Asp Phe Thr Phe Gln Glu Ile Phe Ser Arg Leu
305         310         315         320
Pro Glu Lys Gln Lys Glu Ile Met Ile Ala Ile Ala Lys Glu Gln Lys
          325         330         335
Ala Lys Gly Val Thr Ser Ala Ala Phe Ile Lys Lys Tyr Arg Leu Thr
          340         345         350

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Ser Ala Ser Ser Val Gln Ser Gly Leu Lys Gly Leu Leu Glu Lys Asp
 355 360 365
 Met Leu Thr Gln Glu Ser Gly Gly Tyr Gln Val Tyr Asp Arg Leu Phe
 370 375 380
 Asn Ile Trp Leu Arg Arg Asn Tyr
 385 390

<210> 9065

<211> 578

<212> PRT

<213> B.fragilis

<400> 9065

Ile Leu Tyr Ile Met Lys Val Tyr Gln Thr Asn Glu Ile Lys Asn Ile
 1 5 10 15
 Ala Leu Leu Gly Asn Asp Gly Ser Gly Lys Thr Thr Leu Thr Glu Ala
 20 25 30
 Leu Leu Tyr Glu Ser Gly Ile Ile Lys Arg Arg Gly Arg Ile Thr Ala
 35 40 45
 Lys Asn Thr Val Ser Asp Tyr Phe Pro Val Glu Gln Glu Tyr Gly Tyr
 50 55 60
 Ser Val Phe Ser Thr Ile Phe His Val Glu Trp Asn Gly Lys Lys Leu
 65 70 75 80
 Asn Ile Ile Asp Cys Pro Gly Ser Asp Asp Phe Val Gly Ala Ala Met
 85 90 95
 Thr Ala Leu Asn Val Thr Asp Thr Ala Ile Leu Leu Leu Asn Gly Gln
 100 105 110
 Tyr Gly Ala Glu Val Gly Thr Gln Asn His Phe Arg Tyr Thr Glu Lys
 115 120 125
 Leu Gly Lys Pro Val Ile Phe Leu Val Asn Gln Leu Asp Asn Glu Lys
 130 135 140
 Cys Asp Tyr Asp Met Val Leu Glu Gln Leu Lys Ser Ile Tyr Gly Pro
 145 150 155 160
 Lys Val Val Pro Val Gln Tyr Pro Leu Ala Thr Gly Pro Asn Phe Asn
 165 170 175
 Ser Leu Ile Asp Val Leu Leu Met Lys Lys Tyr Ser Trp Ala Pro Glu
 180 185 190
 Gly Gly Ala Pro Ile Ile Glu Glu Ile Pro Ala Glu Glu Lys Asp Lys
 195 200 205
 Ala Met Glu Leu His Lys Ala Leu Val Glu Ala Ala Glu Asn Asp
 210 215 220
 Glu Gly Leu Met Glu Lys Phe Phe Glu Gln Asp Ser Leu Thr Glu Asp
 225 230 235 240
 Glu Met Arg Glu Gly Ile Arg Lys Gly Leu Ala Ala Arg Gly Met Phe
 245 250 255
 Pro Val Phe Cys Val Cys Ala Gly Lys Asp Met Gly Val Arg Arg Leu
 260 265 270
 Met Glu Phe Leu Gly Asn Val Val Pro Gly Val Ser Glu Met Pro Lys
 275 280 285
 Val His Asn Thr Arg Gly Glu Val Val Glu Pro Asp Pro Asn Gly Pro
 290 295 300
 Thr Ser Leu Tyr Phe Phe Lys Thr Gly Val Glu Pro His Ile Gly Asp
 305 310 315 320
 Val Gln Tyr Phe Lys Val Met Ser Gly Lys Val His Glu Gly Asp Asp
 325 330 335
 Phe Thr Asn Ala Asp Arg Gly Ser Lys Glu Arg Val Ala Gln Ile Tyr
 340 345 350
 Ala Cys Ala Gly Ala Asn Arg Ile Lys Val Glu Glu Met Val Ala Gly
 355 360 365

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Asp Ile Gly Cys Thr Val Lys Leu Lys Asp Val His Thr Gly Asn Thr
370                      375                      380
Leu Asn Gly Lys Gly Ala Glu Asn Arg Phe Asn Phe Ile Lys Tyr Pro
385                      390                      395                      400
Asn Ser Lys Tyr Ser Arg Ala Ile Lys Pro Val Asn Glu Ala Asp Thr
405                      410                      415
Glu Lys Met Met Ala Ile Leu Asn Arg Met Arg Glu Glu Asp Pro Thr
420                      425                      430
Trp Val Ile Glu Gln Ser Lys Glu Leu Lys Gln Thr Ile Val His Gly
435                      440                      445
Gln Gly Glu Phe His Leu Arg Thr Leu Lys Trp Arg Leu Glu Asn Asn
450                      455                      460
Glu Lys Leu Gln Val Lys Phe Glu Glu Pro Lys Ile Pro Tyr Arg Glu
465                      470                      475                      480
Thr Ile Thr Lys Ala Ala Arg Ala Asp Tyr Arg His Lys Lys Gln Ser
485                      490                      495
Gly Gly Ala Gly Gln Phe Gly Glu Val His Leu Ile Val Glu Pro Tyr
500                      505                      510
Tyr Glu Gly Met Pro Val Pro Asp Met Tyr Lys Phe Gly Gly Gln Glu
515                      520                      525
Phe Lys Ile Asn Val Lys Gly Thr Glu Glu Val Pro Leu Glu Trp Gly
530                      535                      540
Gly Lys Leu Val Phe Val Asn Ser Ile Val Gly Gly Ser Ile Asp Ala
545                      550                      555                      560
Arg Phe Leu Ala Gly His Leu Lys Gly Phe Met Ser Arg Met Asn Lys
565                      570                      575
Asp Leu

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<210> 9066

<211> 1175

<212> PRT

<213> B.fragilis

<400> 9066

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Tyr Pro His Ile Ile Gln Pro Leu Ile Arg Leu Asn Tyr Val Lys Thr
1                      5                      10                      15
Asn Leu Leu Ile Lys Ser Tyr Lys Cys Met Asn Asn His Gly Ile Phe
20                      25                      30
Ser Pro Asp Arg Thr Lys Val Arg Thr Leu Leu Ser Ile Lys Ser Ile
35                      40                      45
Phe Leu Phe Leu Leu Phe Thr Phe Ala Phe Glu Met Ala Tyr Ala Ser
50                      55                      60
Ser Val Tyr Ser Gln Thr Lys Val Phe Thr Met Gln Ser Ala Glu Lys
65                      70                      75                      80
Thr Val Leu Gln Val Phe Lys Glu Ile Glu Lys Asn Ser Glu Phe Ile
85                      90                      95
Ile Phe Tyr Arg Asp Gly Val Ile Asp Leu Asn Arg Lys Val Ser Val
100                      105                      110
Asn Val Val Asn Gln Ser Val Asp Lys Ile Leu Glu Gln Leu Leu Ala
115                      120                      125
His Thr Asp Asn Gly Phe Thr Ile Lys Asp Arg Gln Ile Ile Ile Tyr
130                      135                      140
Lys Lys Glu Thr Ser Ala Thr Pro Ser Val Ser Gln Gln Lys Asn Lys
145                      150                      155                      160
Ile Lys Val Thr Gly Val Val Thr Asp Ala Lys Gly Glu Ser Ile Ile
165                      170                      175
Gly Ala Asn Val Val Val Lys Gly Asn Pro Thr Ile Gly Ala Ile Thr
180                      185                      190

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Asn	Met	Glu	Gly	Arg	Tyr	Glu	Val	Met	Leu	Pro	Ser	Asp	Asp	Val	Ile
		195					200					205			
Leu	Leu	Val	Ser	Tyr	Leu	Gly	Tyr	Asn	Thr	Glu	Glu	Ile	Lys	Val	Lys
		210					215					220			
Gly	Arg	Arg	Asn	Ile	Asn	Val	Val	Leu	His	Glu	Asp	Ser	Lys	Ala	Leu
		225				230					235				240
Asp	Glu	Val	Val	Ile	Val	Gly	Tyr	Gly	Lys	Gln	Lys	Lys	Glu	Ser	Val
				245						250					255
Val	Val	Ser	Met	Ser	Ser	Ile	Lys	Pro	Lys	Asp	Ile	Val	Val	Pro	Ser
			260						265					270	
Arg	Ser	Leu	Asn	Asn	Ser	Leu	Ala	Gly	Gln	Val	Ala	Gly	Leu	Ile	Ala
			275				280					285			
Val	Gln	Arg	Ser	Gly	Glu	Pro	Gly	Tyr	Asp	Asn	Ala	Glu	Phe	Trp	Ile
			290				295				300				
Arg	Gly	Val	Ser	Thr	Phe	Ala	Gly	Gly	Thr	Ser	Pro	Leu	Val	Leu	Val
					310						315				320
Asp	Gly	Val	Pro	Arg	Asn	Met	Ser	Asp	Ile	Glu	Pro	Asp	Glu	Ile	Glu
				325						330					335
Thr	Phe	Ser	Val	Leu	Lys	Asp	Ala	Ala	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
			340						345					350	
Glu	Gly	Ala	Asn	Gly	Val	Val	Leu	Val	Thr	Thr	Lys	Arg	Gly	Arg	Val
			355					360					365		
Glu	Lys	Ala	Lys	Ile	Ser	Phe	Lys	Thr	Glu	His	Thr	Ile	Ser	Ser	Pro
			370				375					380			
Thr	Arg	Leu	Pro	Glu	Phe	Val	Gly	Ser	Ala	Asp	Tyr	Leu	Ser	Leu	Tyr
					390						395				400
Asn	Glu	Ala	Leu	Arg	Asn	Asp	Gly	Glu	Gly	Pro	Gln	Phe	Ser	Asp	Glu
				405						410					415
Leu	Ile	Ala	His	Tyr	Arg	Asn	Asn	Asp	Asp	Pro	Asp	Leu	Tyr	Pro	Asn
			420						425				430		
Thr	Asn	Trp	Ile	Asp	Glu	Leu	Leu	Arg	Lys	Asn	Thr	Phe	Ser	His	Arg
			435					440					445		
Tyr	Thr	Leu	Asn	Val	Arg	Gly	Gly	Thr	Glu	Lys	Ala	Lys	Tyr	Phe	Val
			450				455					460			
Ser	Gly	Ala	Tyr	Tyr	Asn	Glu	Ser	Gly	Leu	Phe	Lys	Asn	Arg	Pro	Asn
					470						475				480
Gly	Ile	Tyr	Asp	Thr	Asn	Ile	Gly	Ile	Asp	Arg	Phe	Asn	Leu	Arg	Ser
				485					490					495	
Asn	Ile	Asp	Met	Ala	Val	Ser	Ser	Thr	Thr	Thr	Val	Gly	Val	Asp	Leu
			500						505				510		
Ala	Met	Gln	Tyr	Leu	Ile	Asn	Asn	Tyr	Pro	Gly	Thr	Gly	Thr	Ser	Thr
			515					520					525		
Ile	Phe	Arg	Ser	Met	Leu	Ile	Thr	Pro	Pro	Tyr	Ala	Phe	Pro	Ala	Val
			530				535					540			
Tyr	Ser	Asp	Gly	Thr	Val	Ala	Thr	Tyr	Ala	Gln	Glu	Arg	Asp	Ala	Asn
					550					555					560
Met	Arg	Asn	Pro	Tyr	Asn	Leu	Leu	Met	Asn	Ser	Gly	Tyr	Ala	Lys	Glu
				565						570					575
Tyr	Arg	Thr	Gly	Ile	Gln	Ser	Lys	Val	Asn	Val	Asn	Gln	Lys	Leu	Asp
			580						585					590	
Phe	Ile	Thr	Lys	Gly	Leu	Ser	Ala	Asn	Leu	Asn	Val	Ser	Tyr	Asp	Tyr
			595				600					605			
Asp	Ser	Glu	Met	Ile	Ile	Arg	Arg	Glu	Tyr	Asn	Pro	Thr	Arg	Tyr	His
						615					620				
Ala	Thr	Gly	Arg	Asp	Glu	Leu	Gly	Gln	Leu	Ile	Phe	Ser	Thr	Val	Val
					630					635					640
Ser	Gly	Asn	Pro	Asp	Ile	Gln	Asp	Pro	Lys	Asn	Ser	Ala	Thr	Ser	Ala
				645						650					655
Thr	Lys	Lys	Ile	Tyr	Ile	Asp	Ala	Ser	Ile	Asn	Tyr	Lys	Arg	Thr	Phe

660					665					670					
Gly	Lys	His	Asp	Val	Gly	Ala	Met	Leu	Leu	Tyr	Met	Gln	Lys	Glu	Thr
675					680					685					
Gln	Gln	His	Asn	Val	Pro	Leu	Pro	Phe	Arg	Lys	Gln	Gly	Phe	Val	Gly
690					695					700					
Arg	Ala	Thr	Tyr	Gly	Tyr	Asp	Gly	Arg	Tyr	Phe	Ile	Glu	Gly	Asn	Phe
705					710					715					
Gly	Tyr	Thr	Gly	Ser	Glu	Ala	Phe	Ala	Glu	Gly	Asn	Arg	Phe	Gly	Phe
725					730					735					
Phe	Pro	Ala	Ile	Gly	Ala	Ala	Tyr	Tyr	Leu	Ser	Asn	Glu	Ser	Phe	Tyr
740					745					750					
Pro	Glu	Ala	Ile	Lys	Lys	Val	Val	Asn	Lys	Leu	Lys	Leu	Arg	Ala	Ser
755					760					765					
Val	Gly	Arg	Thr	Gly	Asn	Asp	Lys	Thr	Gly	Gln	Glu	Arg	Phe	Leu	Tyr
770					775					780					
Arg	Pro	Thr	Phe	Thr	Thr	Asn	Ala	Gly	Gly	Phe	Thr	Gln	Gly	Ile	Gly
785					790					795					
Asp	Thr	Gly	Gly	Thr	Asn	Gly	Ile	Gly	Asn	Gly	Ile	Val	Glu	Gly	Arg
805					810					815					
Phe	Ala	Ala	Pro	Tyr	Leu	Ala	Trp	Glu	Ile	Glu	Asp	Lys	Gln	Asn	Tyr
820					825					830					
Gly	Phe	Asp	Leu	Gly	Leu	Phe	Asp	Asn	Arg	Ile	Asp	Ile	Ile	Phe	Asp
835					840					845					
Tyr	Phe	Arg	Ser	Glu	Arg	Arg	Asp	Ile	Leu	Leu	Gln	Arg	Arg	Thr	Val
850					855					860					
Pro	Gln	Leu	Gly	Gly	Leu	Arg	Gln	Asp	Pro	Trp	Gln	Asn	Phe	Gly	Lys
865					870					875					
Val	Arg	Asn	Gln	Gly	Ile	Asp	Met	Ser	Met	Asn	Leu	Asn	Gln	Gln	Ile
885					890					895					
Gly	Lys	Leu	Lys	Leu	Ser	Ala	Arg	Gly	Thr	Phe	Thr	Phe	Thr	Arg	Asn
900					905					910					
Lys	Ile	Leu	Glu	Tyr	Asp	Glu	Leu	Pro	Gln	Lys	Tyr	Gly	Tyr	Gln	Ala
915					920					925					
Val	Thr	Gly	Thr	Arg	Val	Ser	Glu	Asn	Thr	Leu	Tyr	Ile	Ala	Asp	Arg
930					935					940					
Leu	Tyr	Thr	Glu	Asp	Asp	Phe	Ile	Val	Ser	Thr	Asn	Ala	Asn	Gly	Leu
945					950					955					
Lys	Thr	Tyr	Lys	Leu	Arg	Ser	Glu	Leu	Pro	Arg	Pro	Thr	Leu	Gly	Gly
965					970					975					
Leu	Ile	Gly	Pro	Gly	Asp	Ile	Lys	Tyr	Val	Asp	Val	Asn	Gly	Asp	Gly
980					985					990					
Val	Ile	Asp	Ser	Tyr	Asp	Gln	Val	Arg	Gly	Val	Gly	Asn	Pro	Ser	Thr
995					1000					1005					
Pro	Glu	Ile	Ile	Tyr	Gly	Phe	Gly	Leu	Asn	Ala	Glu	Tyr	Lys	Gly	Phe
1010					1015					1020					
Tyr	Ala	Ser	Ile	Phe	Phe	Gln	Gly	Ala	Gly	Asn	Thr	Ser	Val	Leu	Leu
1025					1030					1035					
Gly	Gly	Ala	Thr	Ser	Glu	Gly	Trp	Tyr	Pro	Phe	Ser	Trp	Gly	Val	Asp
1045					1050					1055					
Gln	Ser	Asn	Tyr	Arg	Thr	Phe	Ala	Leu	Asp	Arg	Trp	Thr	Glu	Asn	Asn
1060					1065					1070					
Pro	Ser	Gln	Asp	Val	Ile	Ile	Pro	Arg	Leu	His	Lys	Asn	Asn	Ala	Asn
1075					1080					1085					
Asn	Ala	Asn	Asn	Arg	Val	Ala	Ser	Thr	Trp	Trp	Leu	Arg	Asn	Gly	Ser
1090					1095					1100					
Phe	Leu	Arg	Leu	Lys	Asn	Ile	Glu	Phe	Gly	Tyr	Gln	Leu	Pro	Lys	Lys
1105					1110					1115					
Phe	Met	Asp	Lys	Ile	Gly	Phe	Glu	Ala	Ala	Arg	Ile	Tyr	Ile	Met	Gly
1125					1130					1135					

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<210> 9067
<211> 66
<212> PRT
<213> B.fragilis
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<210> 9068
<211> 144
<212> PRT
<213> B.fragilis
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<210> 9069
<211> 245
<212> PRT
<213> B.fragilis
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<400> 9069
Val Tyr Ile Met Phe Gln Glu Ala Ile Ala Gln Tyr Leu Lys Gln Asn
1      5      10      15
His Tyr Glu Ser Ile Gln Leu Lys Ser Val Leu Phe Asp Met Asp Gly
      20      25      30
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Val Leu Phe Asp Ser Met Pro Tyr His Ala Glu Ala Trp His Lys Thr
  35          40          45
Met Lys Ala His Gly Leu Asn Leu Ser Arg Glu Glu Ala Tyr Met His
  50          55          60
Glu Gly Arg Thr Gly Ala Gly Thr Ile Asn Ile Val Cys Gln Arg Gln
  65          70          75          80
Leu Gly Arg Asp Ala Thr Gln Glu Glu Ile Glu Ser Ile Tyr Leu Glu
      85          90          95
Lys Ser Ile Glu Phe Asn Lys His Pro Gln Ala Glu Arg Met Pro Gly
  100          105          110
Ala Trp Glu Leu Leu Gln Lys Ile Lys Ala Glu Gly Ile Ile Pro Thr
  115          120          125
Val Val Thr Gly Ser Gly Gln Ala Ser Leu Leu Asp Arg Leu Glu His
  130          135          140
Asn Phe Pro Gly Met Phe Arg Gln Glu Leu Met Val Thr Ala Phe Asp
  145          150          155          160
Val Lys Tyr Gly Lys Pro Asn Pro Glu Pro Tyr Leu Met Ala Leu Glu
      165          170          175
Lys Gly Gly Leu Lys Pro Asn Glu Ala Ile Val Ile Glu Asn Ala Pro
  180          185          190
Leu Gly Val Glu Ala Gly His Lys Ala Gly Ile Phe Thr Ile Ala Val
  195          200          205
Asn Thr Gly Pro Leu Asn Gly Glu Ile Leu Leu Asn Ala Gly Ala Asp
  210          215          220
Leu Leu Phe Pro Ser Met Gln Ala Leu Cys Glu Ser Trp Glu Lys Leu
  225          230          235          240
Val Arg Leu Leu His
      245

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<210> 9070

<211> 485

<212> PRT

<213> B.fragilis

<400> 9070

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Ser Val Ser Ile Tyr Phe Val Ala Leu Leu Arg Ile Ile Phe Lys Ile
  1          5          10          15
Arg Lys Asn Met Lys Ser Tyr Lys Leu Leu Ala Phe Thr Leu Phe
      20          25          30
Leu Ala Phe Ala Phe Asn Met Lys Ala Gln Tyr Val His Glu Arg Ser
      35          40          45
Asp Gln Tyr Thr Pro Pro Glu Asp Ser Leu Val Ile Gln Lys Leu His
  50          55          60
His Trp Gln Asp Gln Lys Phe Gly Met Leu Ile His Trp Gly Leu Tyr
  65          70          75          80
Ser Val Ala Gly Ile Val Glu Ser Trp Ser Ile Cys Ser Glu Glu Ala
      85          90          95
Asp Trp Ile Pro Arg Asp Ser Thr Met Ala Tyr Glu Asp Tyr Lys Lys
  100          105          110
Trp Tyr Trp Gly Leu Lys Asp Ser Phe Asn Pro Thr Arg Phe Asp Pro
  115          120          125
Glu Gln Trp Ala Gln Ala Ala Lys Ser Ala Gly Met Arg Tyr Ala Ile
  130          135          140
Phe Thr Thr Lys His His Asp Gly Phe Asn Met Phe Asn Thr Ala Phe
  145          150          155          160
Ser Asp Phe Ser Ile Ala Lys Gly Pro Phe Gln Thr Asp Pro Arg Ala
      165          170          175
Asp Val Ala Lys Tyr Val Phe Glu Ala Phe Arg Asn Asn Asp Leu Met
  180          185          190

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Val Gly Ala Tyr Phe Ser Lys Pro Asp Trp His Ser Glu Tyr Tyr Trp
 195 200 205
 Trp Pro Arg Tyr Ala Thr Pro Arg Arg Thr Gln Asn Tyr Asn Ile Asp
 210 215 220
 Lys Asn Pro Trp Arg Trp Asn Gln Phe Lys Glu Phe Thr Tyr Asn Gln
 225 230 235 240
 Ile Gly Glu Leu Met His Asn Tyr Gly Pro Ile Asp Ile Leu Trp Leu
 245 250 255
 Asp Gly Gly Trp Val Asn Asn Pro Gly Thr Lys Ser Val Leu Asp Met
 260 265 270
 Asp Arg Ile Ser Gln Met Ala Arg Gln Ala Gln Pro Gly Ile Leu Phe
 275 280 285
 Val Asp Arg Thr Ile His Gly Lys Tyr Glu Asn Tyr Gln Thr Pro Glu
 290 295 300
 Gln Gln Ile Pro Asp Lys Gln Leu Pro Tyr Pro Trp Glu Thr Cys Met
 305 310 315 320
 Thr Leu Gly Val Asp Trp Gly Tyr Thr Pro His Ala Val Phe Lys Ser
 325 330 335
 Pro Val Thr Val Ile Ala Lys Leu Met Glu Ile Val Ala Lys Gly Gly
 340 345 350
 Ser Leu Leu Leu Gly Val Gly Pro Thr Pro Glu Gly Ile Leu Gln Asp
 355 360 365
 Glu Ile Val Ser Arg Leu Gln Thr Ile Gly Gly Trp Met Lys Lys Asn
 370 375 380
 Gly Thr Ala Ile Tyr Asn Thr Val Thr Thr Pro Gln Tyr Tyr Ser Glu
 385 390 395 400
 Gly Ile Trp Phe Thr Met Asn Lys Asp Gly Lys Thr Met Tyr Ala Leu
 405 410 415
 Tyr Ser Asn Pro Glu Thr Glu Lys Phe Pro Asp Tyr Ile Glu Trp Glu
 420 425 430
 Asn Asn Ile Pro Ala Lys Arg Ser Ala Ile Tyr Cys Leu Gln Asn Gly
 435 440 445
 Lys Lys Val Lys Trp Glu Ile Lys Asn Asn Arg Val Arg Val Tyr Leu
 450 455 460
 Pro Gln Asn Leu Lys Thr Glu Val Asn Ala Leu Ala Phe Ser Phe Thr
 465 470 475 480
 Arg Gln Ala Ile Gln
 485

<210> 9071

<211> 171

<212> PRT

<213> B.fragilis

<400> 9071

Tyr Asp Cys Met Lys Lys Leu Phe Phe Pro Leu Leu Ser Leu Cys Leu
 1 5 10 15
 Leu Thr Thr Ala Cys Lys Asp Ser Val Pro Ser Pro Thr Ile Glu Met
 20 25 30
 Gln Gly Leu Tyr Val Asn Asp Gly Glu Met Asp Tyr Thr Arg Gln Met
 35 40 45
 Glu Ala Leu Pro Pro Leu Lys Val Asp Asp Glu Leu Glu Ile Ser Leu
 50 55 60
 Lys Leu Asp Gly Asn Gly Glu Glu Leu Asn Thr Phe Leu Val Lys Glu
 65 70 75 80
 Glu Thr Pro Gly Ser Lys Glu Thr Ala Val Glu Ile Asp Phe Asn Asp
 85 90 95
 Leu Pro Glu Glu Thr Leu Ser Asp Asp Lys Glu Phe Thr Asp Lys Asp
 100 105 110

Asn Gly Lys Leu Gly Phe Lys Asp Gly Val Ser Gln Thr Gln Ile Gly
 115 120 125
 Ile Arg Ala Lys Val Gln Gln Val Thr Glu Asp Gly Val Lys Leu Lys
 130 135 140
 Phe Tyr Leu Phe Ser Lys Pro Val Asn Cys Glu Gly Ala Lys Tyr Glu
 145 150 155 160
 Leu Glu Ile Lys Thr Ser Asp Lys Gln Asp Asp
 165 170

<210> 9072

<211> 1285

<212> PRT

<213> B.fragilis

<400> 9072

Tyr Asp Arg Met Gly Leu Arg Thr Ile Gln Asp Trp Met Val Lys Arg
 1 5 10 15
 Gln Leu Ser Gly Ile Pro Gly Ile Val Glu Ile Asn Ser Phe Gly Gly
 20 25 30
 Tyr Leu Lys Gln Tyr Glu Val Ala Val Asp Pro Asn Ala Leu Phe Ser
 35 40 45
 Leu Asn Ile Thr Ile Gly Lys Val Phe Glu Ala Leu Ser Lys Asn Asn
 50 55 60
 Gln Asn Thr Gly Gly Ser Tyr Ile Glu Lys Ala Lys Asn Ala Tyr Tyr
 65 70 75 80
 Ile Arg Ser Glu Gly Met Ile Ser Arg Thr Lys Asp Ile Glu Gln Ile
 85 90 95
 Val Val Ala Asn Arg Asn Gly Ile Pro Val His Ile Ser Asp Val Gly
 100 105 110
 Ile Val Arg Phe Gly Ala Pro Lys Arg Phe Gly Ala Met Thr Lys Asp
 115 120 125
 Gly Lys Gly Glu Cys Val Gly Gly Ile Ala Met Met Leu Lys Gly Ala
 130 135 140
 Asn Ala Asn Val Val Thr Gln Glu Leu Glu Lys Arg Val Glu Lys Ile
 145 150 155 160
 Gln Lys Leu Leu Pro Glu Gly Val Ser Ile Glu Pro Tyr Leu Asn Arg
 165 170 175
 Ser Glu Leu Val Asn Arg Asn Ile Ser Thr Val Val His Asn Leu Ile
 180 185 190
 Glu Gly Ala Ile Ile Val Phe Val Val Leu Ile Ile Phe Leu Gly Asn
 195 200 205
 Ile Arg Ala Gly Leu Ile Val Ala Ser Val Ile Pro Leu Ala Met Leu
 210 215 220
 Phe Ala Phe Ile Leu Met Arg Ile Phe Gly Val Thr Ala Asn Leu Met
 225 230 235 240
 Ser Leu Gly Ala Ile Asp Phe Gly Ile Val Val Asp Gly Ser Ile Val
 245 250 255
 Ile Val Glu Gly Ile Leu Ala His Leu Tyr Asn Asn Lys Leu Asn Gly
 260 265 270
 Arg Thr Leu Ser Gly Thr Glu Met Asp Glu Glu Val Glu Lys Gly Ala
 275 280 285
 Ser Gly Val Val Arg Ser Ala Thr Phe Ala Val Phe Ile Ile Leu Ile
 290 295 300
 Val Phe Phe Pro Ile Leu Thr Leu Ser Gly Ile Glu Gly Lys Tyr Phe
 305 310 315 320
 Thr Pro Met Ala Lys Thr Leu Val Phe Cys Ile Ile Gly Ala Leu Leu
 325 330 335
 Leu Ser Leu Thr Tyr Val Pro Met Met Ala Ser Leu Phe Leu Lys His
 340 345 350

Thr	Ile	Met	Val	Lys	Pro	Thr	Phe	Ala	Asp	Arg	Phe	Phe	Glu	Lys	Leu
		355					360				365				
Asn	Val	Ile	Tyr	Gln	Arg	Cys	Leu	His	Phe	Cys	Leu	Arg	Phe	Lys	Trp
	370					375					380				
Gln	Thr	Val	Thr	Val	Ala	Phe	Ala	Thr	Leu	Ile	Gly	Ser	Phe	Leu	Leu
385					390					395					400
Phe	Gly	Arg	Leu	Gly	Ala	Glu	Phe	Ile	Pro	Thr	Leu	Asp	Glu	Gly	Asp
			405						410					415	
Phe	Ala	Met	Gln	Met	Thr	Leu	Pro	Ala	Gly	Ser	Ser	Leu	Ser	Glu	Ser
		420						425					430		
Ile	Glu	Val	Ser	Asn	Gln	Ala	Glu	Lys	Leu	Leu	Met	Asp	Arg	Phe	Pro
	435						440					445			
Glu	Ile	Lys	His	Val	Val	Ala	Lys	Ile	Gly	Thr	Ala	Glu	Val	Pro	Thr
450						455					460				
Asp	Pro	Met	Ala	Val	Glu	Asp	Ala	Asp	Val	Met	Ile	Val	Met	Lys	Pro
465					470					475					480
Phe	Lys	Glu	Trp	Thr	Ser	Ala	Ser	Ser	Arg	Ala	Glu	Met	Val	Glu	Lys
			485						490					495	
Met	Lys	Glu	Ala	Leu	Gln	Pro	Leu	Glu	Asn	Arg	Ala	Glu	Phe	Asn	Phe
		500						505					510		
Ser	Gln	Pro	Ile	Gln	Leu	Arg	Phe	Asn	Glu	Leu	Met	Thr	Gly	Ala	Lys
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Ser	Asp	Val	Ile	Val	Glu	Gln	Thr	Met	Gly	Leu	Pro	Gln	Leu	Val	Val
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Lys	Tyr	Asn	Arg	Gly	Lys	Ile	Ala	Arg	Tyr	Gly	Ile	Asn	Ile	Glu	Glu
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Val	Phe	Glu	Asn	Glu	Arg	Arg	Phe	Asp	Leu	Val	Val	Arg	Leu	Asp	Gln
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Glu	Gly	Ile	Gln	Ile	Pro	Val	Ser	Glu	Val	Ala	Ser	Ile	Asp	Leu	Val
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Phe	Glu	Tyr	Gly	Gly	Gln	Phe	Glu	Asn	Leu	Gln	Asn	Ala	Ile	Arg	Thr
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Leu	Thr	Ile	Val	Ile	Pro	Val	Ala	Leu	Met	Leu	Ile	Leu	Leu	Ile	Leu
			725						730					735	
Phe	Phe	Ala	Phe	Lys	Asn	Val	Thr	Tyr	Thr	Leu	Met	Val	Phe	Ser	Thr
		740						745					750		
Val	Pro	Leu	Ser	Leu	Ile	Gly	Gly	Ile	Leu	Ala	Leu	Trp	Leu	Arg	Gly
	755						760					765			
Leu	Pro	Phe	Ser	Ile	Ser	Ala	Gly	Val	Gly	Phe	Ile	Ala	Leu	Phe	Gly
	770					775					780				
Val	Ala	Val	Leu	Asn	Gly	Ile	Leu	Met	Ile	Asn	His	Phe	Asn	Asp	Leu
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Arg	Lys	Gln	Asn	Lys	Tyr	Ala	Met	Thr	Thr	Asn	Gln	Ile	Ile	Lys	Arg
			805						810					815	
Gly	Thr	Pro	His	Leu	Leu	Arg	Pro	Val	Phe	Leu	Thr	Gly	Leu	Val	Ala

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Ser	Leu	Gly	Phe	Val	Pro	Met	Ala	Ile	Ala	Thr	Ser	Ala	Gly	Ala	Glu	
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Val	Gln	Arg	Pro	Leu	Ala	Thr	Val	Val	Ile	Gly	Gly	Leu	Ile	Leu	Ser	
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Thr	Ile	Leu	Thr	Leu	Ile	Ile	Leu	Pro	Val	Phe	Tyr	Lys	Ile	Val	Asn	
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Ala	Ala	Ser	Ala	Gly	Trp	Lys	Gln	Pro	Lys	Arg	Arg	Leu	His	Leu	Phe	
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Ile	Leu	Leu	Pro	Ala	Leu	Leu	Leu	Ser	Ala	Thr	Ala	Thr	Ala	Gln	Ala	
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Pro	Gln	Thr	Val	Ser	Leu	Glu	Gln	Ala	Ile	Glu	Ile	Ala	Lys	Gln	Asn	
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His	Pro	Arg	Leu	Lys	Ile	Ala	Thr	Thr	Ala	Ile	Arg	Gln	Ala	Gln	Ala	
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Trp	Gly	Gln	Leu	Asn	Gly	Glu	Asn	Lys	Lys	Asp	Lys	Glu	Met	Ala	Phe	
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Glu	Gln	Ser	Leu	Gly	Ser	Leu	Leu	Thr	Pro	Phe	Tyr	Lys	Asn	Val	Leu	
980					985					990						
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Lys	Glu	Ile	Thr	Ala	Glu	Val	Lys	Arg	Ala	Trp	Ala	Tyr	Tyr	Gln	Tyr	
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Glu	Leu	Arg	Arg	Ile	Gly	Glu	Leu	Arg	Tyr	Glu	Gln	Gly	Glu	Ile	Thr	
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1075					1080					1085						
Gln	Trp	Ser	Cys	Tyr	Ala	Asp	Asp	Pro	Ile	Thr	Pro	Lys	Asp	Thr	Ile	
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Met	Thr	Leu	Phe	Pro	Thr	Asp	Cys	Glu	Gln	Arg	Ser	Thr	Ser	Glu	Ala	
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His	Leu	Gly	Phe	Phe	Asn	Ser	Gln	Ala	Ser	Glu	Ala	Arg	Ala	Ile	Leu	
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Asn	Val	Glu	Arg	Ser	Arg	Phe	Phe	Pro	Glu	Leu	Ser	Ile	Gly	Tyr	Ser	
1140					1145					1150						
Arg	Gln	Asp	Ile	Leu	Pro	Leu	Lys	Asn	Leu	Asn	Ala	Trp	Met	Val	Gly	
1155					1160					1165						
Val	Ser	Phe	Pro	Ile	Tyr	Phe	Leu	Pro	Gln	Lys	Ser	Arg	Ile	Lys	Gln	
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Ala	Lys	Leu	Ala	Val	Ser	Ala	Ala	Gln	Ile	Gln	Ala	Glu	Ala	Asn	Ile	
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Arg	Glu	Leu	Asn	Asn	Lys	Ile	Thr	Glu	Leu	Ser	Ala	Ala	Leu	Arg	Arg	
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Tyr	Glu	Glu	Ser	Leu	Arg	Phe	Tyr	Thr	Ser	Ser	Ala	Leu	Lys	Glu	Ala	
1220					1225					1230						
Asp	Glu	Leu	Val	Lys	Thr	Ala	Asn	Leu	Gln	Leu	Gln	His	Ser	Glu	Thr	
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Gly	Ile	Ala	Glu	Phe	Ile	Gln	Ser	Val	Ser	Ala	Ala	Arg	Glu	Ile	Arg	
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Lys	Gly	Tyr	Ile	Glu	Thr	Ile	Tyr	Gln	Tyr	Asn	Ile	Ala	Ser	Leu	Glu	
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Tyr	Glu	Leu	Tyr	Gln												
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Phe	Ile	Ala	Leu	Gln	Ala	Arg	Leu	Leu	Met	Ile	Ser	Lys	Leu	Leu	His
			20					25					30		
Ile	Tyr	Leu	Leu	Ile	Lys	Lys	Ser	Lys	Thr	His	Cys	Ile	Val	Glu	Lys
		35				40					45				
Gln	Ile	Tyr	Ser	Tyr	Glu	Glu	Ala	Phe	Glu	Glu	Ser	Leu	Arg	Tyr	Phe
	50					55					60				
Gln	Gly	Asp	Glu	Leu	Ala	Ala	Arg	Val	Trp	Val	Asn	Lys	Tyr	Ala	Val
65					70					75					80
Lys	Asp	Ser	Phe	Gly	Asn	Ile	Tyr	Glu	Lys	Ser	Pro	Lys	Asp	Met	His
				85					90					95	
Trp	Arg	Leu	Ala	Asn	Glu	Val	Ala	Arg	Ile	Glu	Ala	Lys	Tyr	Pro	Asn
		100						105						110	
Ala	Leu	Ser	Ser	Glu	Gln	Leu	Phe	Glu	Leu	Phe	Asp	His	Phe	Lys	Tyr
		115					120					125			
Ile	Val	Pro	Gln	Gly	Ser	Pro	Met	Thr	Gly	Ile	Gly	Asn	Asp	Tyr	Gln
	130					135					140				
Val	Ala	Ser	Leu	Ser	Asn	Cys	Phe	Val	Ile	Gly	Ile	Asp	Gly	Ser	Ala
145					150					155					160
Asp	Ser	Tyr	Gly	Ala	Ile	Ile	Lys	Ile	Asp	Glu	Glu	Gln	Val	Gln	Leu
				165					170					175	
Met	Lys	Arg	Arg	Gly	Gly	Val	Gly	His	Asp	Leu	Ser	His	Ile	Arg	Pro
			180					185					190		
Lys	Gly	Ser	Pro	Val	Lys	Asn	Ser	Ala	Leu	Thr	Ser	Thr	Gly	Leu	Val
		195				200						205			
Pro	Phe	Met	Glu	Arg	Tyr	Ser	Asn	Ser	Thr	Arg	Glu	Val	Ala	Gln	Asp
	210					215					220				
Gly	Arg	Arg	Gly	Ala	Leu	Met	Leu	Ser	Val	Ser	Ile	Lys	His	Pro	Asp
225					230					235					240
Ser	Glu	Ala	Phe	Ile	Asp	Ala	Lys	Met	Thr	Glu	Gly	Lys	Val	Thr	Gly
				245					250					255	
Ala	Asn	Val	Ser	Val	Lys	Leu	Asp	Asp	Ala	Phe	Met	Ser	Ala	Ala	Val
			260					265					270		
Glu	Gly	Arg	Lys	Tyr	Thr	Gln	Gln	Tyr	Pro	Ile	Asp	Ser	Asp	His	Pro
		275					280					285			
Thr	Thr	Val	Lys	Glu	Ile	Glu	Ala	Ser	Asn	Leu	Trp	Lys	Lys	Ile	Val
		290				295					300				
His	Asn	Ala	Trp	Lys	Ser	Ala	Glu	Pro	Gly	Val	Leu	Phe	Trp	Asp	Thr
305					310					315					320
Ile	Ile	Arg	Glu	Ser	Val	Pro	Asp	Cys	Tyr	Ala	Asp	Leu	Gly	Tyr	Lys
				325					330					335	
Thr	Val	Ser	Thr	Asn	Pro	Cys	Gly	Glu	Ile	Pro	Leu	Cys	Pro	Tyr	Asp
			340				345						350		
Ser	Cys	Arg	Leu	Leu	Ala	Ile	Asn	Leu	Tyr	Ser	Tyr	Val	Val	Asn	Pro
		355				360						365			
Phe	Thr	Lys	Asp	Ala	Tyr	Phe	Asp	Phe	Asp	Leu	Phe	His	Lys	His	Val
	370					375					380				
Ala	Leu	Ala	Gln	Arg	Ile	Met	Asp	Asp	Ile	Ile	Asp	Leu	Glu	Leu	Glu
385					390					395					400
Lys	Ile	Glu	Arg	Ile	Ile	Glu	Lys	Ile	Asp	Gln	Asp	Pro	Glu	Asn	Glu
				405					410					415	

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Glu Val Lys His Thr Glu Arg Gly Leu Trp Glu Lys Ile Tyr Lys Lys
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 Ile Ile Lys Asn Val Asp Glu Asn Gly Asn Lys Arg Tyr Asp Phe Gln
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 Phe Glu Asn Lys Arg Gly Tyr Lys Met Thr Ile Glu Gly Leu Ser Glu
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 Lys Phe Asn Lys Glu Tyr Trp Asn Tyr Ala Lys Leu Ile Ser Gly Val
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 Leu Arg Trp Arg Met Pro Ile Glu Gln Val Ile Lys Leu Val Gly Ser
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 Leu Gln Leu Asp Ser Glu Asn Ile Asn Thr Trp Lys Asn Gly Val Glu
 835 840 845
 Arg Ala Leu Lys Lys Tyr Val Gln Asp Gly Thr Glu Ala Lys Gly Lys
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		20						25				30			
Lys	Asn	Asn	Pro	Glu	Gln	Ala	Val	Ala	Leu	Thr	Thr	Val	Asp	Gly	Ile
		35					40					45			
His	Trp	Ser	Asn	Glu	Ile	Ser	Ile	Gln	Leu	Pro	Ala	Glu	Gly	Val	Val
	50					55				60					
Glu	Tyr	Ser	Tyr	His	Ile	Tyr	Arg	Asp	Gly	Lys	Ala	Ile	Arg	Thr	Glu
65				70					75					80	
Trp	Asn	Ser	Phe	Pro	Arg	Arg	Ile	Tyr	Leu	Pro	Ala	Asp	Val	Lys	Lys
			85						90					95	
Ser	Leu	Arg	Ile	Asn	Asp	Cys	Trp	Lys	Asn	Leu	Pro	Glu	Gln	Gln	Tyr
		100						105					110		
Phe	Tyr	Ser	Ser	Ala	Phe	Thr	Glu	Ala	Leu	Leu	Ala	His	Arg	Glu	Arg
		115					120					125			
Ser	Ala	Ile	Pro	Lys	Ser	Tyr	Lys	Lys	Gly	Leu	Met	Ile	Lys	Ala	Tyr
	130					135				140					
Ala	Pro	Arg	Ile	Asn	Ser	Lys	Tyr	Cys	Leu	Ala	Ile	Cys	Gly	Asn	Gln
145				150					155					160	
Lys	Ala	Leu	Gly	Asn	Trp	Asp	Pro	Asp	Lys	Ala	Trp	Pro	Met	Ser	Asp
			165						170					175	
Ala	Asn	Phe	Pro	Glu	Trp	Gln	Ala	Glu	Leu	Asp	Ala	Ser	Lys	Leu	Glu
		180						185					190		
Phe	Pro	Leu	Glu	Tyr	Lys	Phe	Val	Leu	Tyr	Asn	Lys	Glu	Glu	Lys	Arg
	195						200					205			
Ala	Glu	Ala	Trp	Glu	Asn	Asn	Pro	Asn	Arg	Tyr	Leu	Ala	Ala	Pro	Glu
	210					215					220				
Ile	Lys	Ala	Asn	Glu	Thr	Leu	Val	Ile	Ala	Asp	Arg	Tyr	Ala	Tyr	Phe
225					230					235					240
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			245						250					255	
Leu	Lys	Ser	Glu	Lys	Ser	Phe	Gly	Val	Gly	Asp	Phe	Gly	Asp	Leu	Lys
		260					265					270			
Arg	Met	Val	Asp	Trp	Ala	Val	Ser	Thr	Asn	Gln	Lys	Val	Val	Gln	Ile
	275						280					285			
Leu	Pro	Ile	Asn	Asp	Thr	Thr	Met	Thr	His	Thr	Trp	Thr	Asp	Ser	Tyr
	290					295					300				
Pro	Tyr	Asn	Ser	Ile	Ser	Ile	Tyr	Ala	Phe	His	Pro	Met	Tyr	Ser	Asp
305					310					315					320
Leu	Lys	Gln	Met	Gly	Asn	Leu	Lys	Asp	Lys	Glu	Thr	Ala	Ala	Thr	Phe
			325						330					335	
Asn	Arg	Lys	Gln	Lys	Glu	Leu	Asn	Ala	Leu	Ser	Ala	Ile	Asp	Tyr	Glu
		340						345					350		
Ala	Val	Asn	Arg	Val	Lys	Trp	Glu	Tyr	Phe	His	Gln	Ile	Phe	Lys	Gln
	355						360					365			
Glu	Gly	Glu	Lys	Val	Leu	Ala	Ser	Lys	Ala	Phe	Arg	Ser	Phe	Phe	Glu
	370					375					380				
Ala	Asn	Lys	Asp	Trp	Leu	Gln	Pro	Tyr	Ala	Ala	Phe	Ser	Tyr	Leu	Arg
385					390					395					400
Asp	Leu	Tyr	His	Thr	Pro	Asn	Phe	Arg	Glu	Trp	Pro	Gln	Tyr	Ser	Glu

Gln Leu Met Lys Ala Glu Ser Leu Asn Glu Lys Ile Arg Glu Leu Val
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 Lys Gln Thr Gly Arg Asn Pro Glu Lys
 900 905

<210> 9075
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 9075
 Asn Gln Thr Ile Asp Thr Thr Arg Ile Ile Ile Ala Leu Ile Ile Leu
 1 5 10 15
 Phe Leu Pro Glu Asp Thr Ser Ile Ile Lys Leu Met Thr Thr Gln His
 20 25 30
 Tyr Ile Phe Leu Glu Asn Val Arg Phe Tyr Ser Tyr His Gly Val Ala
 35 40 45
 Pro Gln Glu Thr Ala Ile Gly Asn Glu Phe Ile Ile Asn Leu Arg Leu
 50 55 60
 Lys Thr Asp Phe Gly Lys Ala Thr Glu Thr Asp Glu Val Glu Asp Thr
 65 70 75 80
 Val Ser Tyr Ala Asp Ile Tyr Ala Ala Leu Lys Glu Glu Met Glu Leu
 85 90 95
 Pro Ser Lys Leu Leu Glu His Val Cys Gly Arg Ile Val Lys Arg Leu
 100 105 110
 Phe Arg Asp Phe Arg Lys Ile Arg Glu Ile Glu Ile Lys Leu Ala Lys
 115 120 125
 Arg Asn Pro Pro Met Gly Ala Asp Ile Asp Ser Ala Gly Val Glu Met
 130 135 140
 His Cys Thr Arg Asp
 145

<210> 9076
 <211> 719
 <212> PRT
 <213> B.fragilis

<400> 9076
 Glu Lys Gln Met Ile Val Cys Ile Ala Glu Lys Pro Ser Val Ala Arg
 1 5 10 15
 Asp Ile Ala Asp Ile Leu Gly Ala Arg Glu Arg Lys Glu Gly Tyr Ile
 20 25 30
 Glu Gly Asn Gly Tyr Gln Val Thr Trp Thr Phe Gly His Leu Cys Thr
 35 40 45
 Leu Lys Glu Pro His Glu Tyr Thr Pro Gly Trp Lys Ser Trp Ser Leu
 50 55 60
 Gly Ser Leu Pro Met Ile Pro Pro Arg Phe Gly Ile Lys Leu Ile Glu
 65 70 75 80
 Asn Pro Thr Tyr Glu Lys Gln Phe His Ile Ile Glu Gly Leu Met Gln
 85 90 95
 Lys Ala Asp Glu Ile Ile Asn Cys Gly Asp Ala Gly Gln Glu Gly Glu
 100 105 110
 Leu Ile Gln Arg Trp Val Met Gln Lys Ala Gly Ala Arg Cys Pro Val
 115 120 125
 Lys Arg Leu Trp Ile Ser Ser Leu Thr Glu Glu Ala Ile Lys Glu Gly
 130 135 140
 Phe Ala Lys Leu Lys Asp Gln Lys Asp Phe Gln Pro Leu Tyr Glu Ala
 145 150 155 160
 Gly Met Ser Arg Ala Ile Gly Asp Trp Leu Leu Gly Met Asn Ala Thr

Pro Lys Arg Arg Glu Arg Lys Ser Ala Thr Pro Lys Glu Lys Lys Gly
645 650 655
Lys Ser Glu Pro Ala Thr Val Asp Val Ser Ser Thr Gly Gln Ser Val
660 665 670
Arg Ala Asp Ala Leu Lys Glu Thr Asp Ser Leu Val Gly Lys Leu Cys
675 680 685
Pro Val Cys Gly Lys Gly Val Ile Ile Lys Gly Lys Thr Val Tyr Gly
690 695 700
Cys Ser Glu Trp Lys Asn Gly Cys Thr Tyr Arg Lys Ala Phe Glu
705 710 715

<210> 9077

<211> 385

<212> PRT

<213> B.fragilis

<400> 9077

Asn Ala Lys Ile Thr Gln Thr Ile Met Ala Gly Ile Tyr Ile His Val
1 5 10 15
Pro Phe Cys Lys Thr Arg Cys Ile Tyr Cys Asp Phe Tyr Ser Thr Thr
20 25 30
Arg Ser Glu Trp Lys Gly Arg Tyr Ile Glu Ala Leu Cys Lys Glu Leu
35 40 45
Glu Met Arg Tyr Thr Tyr Leu Lys Gly Lys Pro Ile Glu Thr Leu Tyr
50 55 60
Phe Gly Gly Gly Thr Pro Ser Gln Leu Asp Glu Lys Asp Phe Arg Lys
65 70 75 80
Val Phe Asp Thr Val Arg Arg Val Tyr Gly Met Glu Asn Cys His Glu
85 90 95
Ile Thr Leu Glu Ala Asn Pro Asp Asp Leu Cys Pro Glu Tyr Leu Gln
100 105 110
Met Leu Ser Glu Leu Pro Phe Asn Arg Ile Ser Met Gly Ile Gln Thr
115 120 125
Phe Asp Asp Thr Thr Leu Lys Leu Leu Lys Arg Arg His Asn Ala Ala
130 135 140
Gln Ala Ile Arg Ala Val Glu Leu Cys Arg Ala His Gly Phe Leu Asn
145 150 155 160
Ile Ser Ile Asp Leu Ile Tyr Gly Leu Pro Gly Glu Thr Thr Glu Arg
165 170 175
Trp Glu Lys Asp Leu Gln Gln Ala Ile Ala Leu Asp Val Glu His Ile
180 185 190
Ser Ala Tyr His Leu Ile Tyr Glu Glu Gly Thr Pro Ile Tyr Lys Met
195 200 205
Leu Gln Lys His Gln Val Glu Glu Val Asp Glu Asp Ser Ser Val Arg
210 215 220
Phe Phe Thr Leu Leu Ile Asp Arg Leu Arg Glu Ala Gly Tyr Glu His
225 230 235 240
Tyr Glu Ile Ser Asn Phe Cys Lys Pro Gly Met Tyr Ser Arg His Asn
245 250 255
Thr Ser Tyr Trp Gln Gly Val Ser Tyr Leu Gly Cys Gly Pro Ser Ala
260 265 270
His Ser Phe Asp Gly Gln Thr Arg Glu Trp Asn Cys Ser Ser Ile Glu
275 280 285
Lys Tyr Met Ser Gly Ile Glu Ser Gly Gln Arg Asp Phe Glu Arg Glu
290 295 300
Glu Arg Asp Leu Ala Thr Arg Tyr Asn Glu Phe Ile Ile Thr Ser Val
305 310 315 320
Arg Thr Gln Trp Gly Ile Ser Leu Glu Arg Leu Ser Asn Asp Tyr Gly
325 330 335

Thr Gln Leu Glu Gln Tyr Cys Leu Lys Met Ala Arg Pro Ser Leu Glu
 340 345 350
 Asn Gly Lys Leu Glu Ile Tyr Glu Gly Ala Leu Arg Leu Thr Arg Glu
 355 360 365
 Gly Ile Phe Ile Ser Asp Ser Ile Met Ser Asp Leu Leu Trp Val Glu
 370 375 380

Asn
 385

<210> 9078
 <211> 155
 <212> PRT
 <213> B.fragilis

<400> 9078
 His Asp Glu Ile Arg Arg Lys Ser Met Glu Ile Ile Leu Lys Glu Asp
 1 5 10 15
 Val Val Asn Leu Gly Tyr Lys Asn Asp Ile Val Thr Val Lys Ser Gly
 20 25 30
 Tyr Gly Arg Asn Tyr Leu Ile Pro Thr Gly Lys Ala Val Ile Ala Ser
 35 40 45
 Pro Ser Ala Lys Lys Met Leu Ala Glu Glu Leu Lys Gln Arg Ala His
 50 55 60
 Lys Leu Glu Lys Ile Lys Lys Asp Ala Glu Ala Leu Ala Ala Lys Leu
 65 70 75 80
 Glu Gly Val Ser Leu Thr Ile Ala Thr Lys Val Ser Ser Thr Gly Thr
 85 90 95
 Ile Phe Gly Ser Val Gly Asn Ile Gln Ile Ala Glu Glu Leu Ala Lys
 100 105 110
 Leu Gly His Glu Ile Asp Arg Lys Ile Ile Val Val Lys Asp Ala Val
 115 120 125
 Lys Glu Val Gly Ala Tyr Lys Ala Ile Val Lys Leu His Lys Glu Val
 130 135 140
 Ser Val Glu Ile Pro Phe Glu Val Val Ala Glu
 145 150 155

<210> 9079
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 9079
 Phe Ile Glu Met Lys Leu Pro Gly Lys Ile Ala Ile Met Gly Gly Gly
 1 5 10 15
 Ser Trp Ala Thr Ala Ile Ala Lys Met Cys Leu Ala Gln Glu Glu Ser
 20 25 30
 Ile Asn Trp Tyr Met Arg Arg Asp Asp Arg Ile Ala Asp Phe Lys Arg
 35 40 45
 Leu Gly His Asn Pro Ala Tyr Leu Thr Gly Val Lys Phe Asp Met Lys
 50 55 60
 Arg Ile Asn Phe Ser Ser Asn Ile Asn Asp Val Val Lys Glu Ser Asp
 65 70 75 80
 Thr Leu Ile Phe Val Thr Pro Ser Pro Tyr Leu Lys Ala His Leu Lys
 85 90 95
 Lys Leu Lys Thr Arg Ile Arg Asp Lys Phe Ile Ile Thr Ala Ile Lys
 100 105 110
 Gly Ile Val Pro Asp Asp Asn Leu Ile Val Ser Glu Tyr Phe Asn Lys
 115 120 125
 Glu Tyr Gly Val Pro Pro Glu Asn Ile Ala Val Leu Ala Gly Pro Cys

130		135		140
His Ala Glu Glu Val	Ala Leu Glu Arg	Leu Ser Tyr Leu Thr Ile	Ala	
145	150	155	160	
Cys Pro Asp Lys Asp	Lys Ala Arg Val	Phe Ala Arg Arg	Leu Gly Ser	
	165	170	175	
Ser Phe Ile Lys Thr	Ser Val Ser Asp	Asp Val Ile Gly	Ile Glu Tyr	
	180	185	190	
Ser Ser Val Leu Lys	Asn Val Tyr Ala	Ile Ala Ala Gly	Ile Cys Ser	
	195	200	205	
Gly Leu Lys Tyr Gly	Asp Asn Phe Gln	Ala Val Leu Ile	Ser Asn Ala	
	210	215	220	
Ile Gln Glu Met Asn	Arg Phe Leu Asn	Thr Val His Pro	Ile Asn Arg	
225	230	235	240	
Asn Val Asp Glu Ser	Val Tyr Leu Gly	Asp Leu Leu Val	Thr Gly Tyr	
	245	250	255	
Ser Asn Phe Ser Arg	Asn Arg Thr Phe	Gly Thr Met Ile	Gly Lys Gly	
	260	265	270	
Tyr Ser Val Lys Ser	Ala Gln Ile Glu	Met Glu Met Ile	Ala Glu Gly	
	275	280	285	
Tyr Tyr Gly Thr Lys	Cys Ile Lys Glu	Ile Asn Lys His	His His Val	
	290	295	300	
Asn Met Pro Ile Leu	Asp Ala Val Tyr	Asn Ile Leu Tyr	Glu Arg Ile	
305	310	315	320	
Ser Pro Met Ile Glu	Ile Lys Leu Leu	Thr Asp Ser Phe	Arg	
	325	330		

<210> 9080

<211> 128

<212> PRT

<213> B.fragilis

<400> 9080

Phe Ser Gly Ile Thr	Ile Lys Lys Val	Gly Ile Met Lys	Arg Leu Gly
1	5	10	15
Leu Thr Leu Val Ala	Ala Leu Cys Leu	Val Ala Thr Thr	Phe Ala Ala
	20	25	30
Gly Asn Gln Pro Thr	Val Ala Lys Trp	Glu Gly Asn Ile	Asn Val Asn
	35	40	45
Lys Leu Gly Lys Tyr	Leu Asn Leu Ser	Ser Val Gln Ala	Glu Glu Val
	50	55	60
Ala Asn Ile Cys Asn	Tyr Phe Asp Glu	Gln Met Gly Arg	Ala Thr Thr
65	70	75	80
Ala Lys Lys Asn Lys	Asp Thr Met Val	Arg Asn Ala Val	Tyr Gly Asn
	85	90	95
Leu Lys Leu Met Lys	Lys Lys Thr Leu	Thr Asp Ala Gln	Tyr Thr Lys Tyr
	100	105	110
Thr Thr Ile Leu Asn	Met Thr Leu Lys	Asn Lys Gly Ile	Glu Val Lys
	115	120	125

<210> 9081

<211> 261

<212> PRT

<213> B.fragilis

<400> 9081

Asp Arg Met Ile Ile	Leu Phe Ile Ser	Leu Gln Lys Lys	Asp Met Met
1	5	10	15
Asp Thr Val Lys Asn	Arg Arg Thr Ile	Arg Lys Tyr Gln	Gln Lys Asp
	20	25	30

Ile Thr Pro Asp Leu Leu Asn Asp Leu Leu Glu Thr Ser Phe Arg Ala
 35 40 45
 Ser Thr Met Gly Gly Met Gln Leu Tyr Ser Val Val Val Thr Arg Asp
 50 55 60
 Ala Glu Lys Lys Glu Ile Leu Ser Pro Ala His Phe Asn Gln Pro Met
 65 70 75 80
 Val Lys Glu Ala Pro Val Val Leu Thr Phe Cys Ala Asp Phe Arg Arg
 85 90 95
 Phe Cys Lys Tyr Cys Gln Glu Arg Asn Ala Glu Pro Gly Tyr Gly Asn
 100 105 110
 Leu Met Ser Phe Leu Asn Ala Ala Met Asp Thr Leu Leu Val Ala Gln
 115 120 125
 Thr Phe Cys Thr Leu Ala Glu Glu Ala Gly Leu Gly Ile Cys Tyr Leu
 130 135 140
 Gly Thr Thr Thr Tyr Asn Pro Gln Met Ile Ile Asp Ala Leu His Leu
 145 150 155 160
 Pro Glu Leu Val Phe Pro Ile Thr Thr Val Thr Val Gly Tyr Pro Ala
 165 170 175
 Glu Ser Pro Lys Gln Val Asp Arg Leu Pro Ile Glu Gly Ile Ile His
 180 185 190
 Glu Glu Ser Tyr His Asp Tyr Thr Ala Glu Asp Ile Asn Arg Leu Tyr
 195 200 205
 Ala Tyr Lys Glu Ser Leu Pro Glu Asn Lys Leu Phe Ile Glu Glu Asn
 210 215 220
 Gln Lys Glu Thr Leu Ala Gln Val Phe Thr Asp Val Arg Tyr Thr Lys
 225 230 235 240
 Lys Asp Asn Glu Phe Met Ser Glu Asn Leu Leu Lys Val Leu Arg Arg
 245 250 255
 Gln Gly Phe Met Asp
 260

<210> 9082

<211> 173

<212> PRT

<213> B.fragilis

<400> 9082

Ser Phe Phe Val Leu Arg Asp Arg Ile Cys Gln Arg Arg His Leu Ser
 1 5 10 15
 Leu Gln Ser Cys Leu Asn Asn Asn Phe Met Ile Glu Gln Phe Asn Phe
 20 25 30
 Asp Ile Arg Leu Ile Phe Ala Ile Leu Asn Gly Lys Val Ser Ala Ala
 35 40 45
 Ile Asn Arg Lys Leu Tyr Arg Asn Phe Arg Gln Asn Gly Leu Glu Ile
 50 55 60
 Ser Pro Glu Gln Trp Thr Val Leu Ile Phe Leu Trp Glu Lys Asp Gly
 65 70 75 80
 Val Thr Gln Gln Glu Leu Cys Asn Ala Thr Phe Lys Asp Lys Pro Ser
 85 90 95
 Met Thr Arg Leu Ile Asp Asn Met Glu Arg Gln His Leu Val Val Arg
 100 105 110
 Ile Ser Asp Lys Lys Asp Arg Arg Thr Asn Leu Ile His Leu Thr Arg
 115 120 125
 Thr Gly Lys Glu Leu Glu Glu Lys Ala Arg Ile Ile Ala Asn Arg Thr
 130 135 140
 Leu Lys Glu Ala Leu His Gly Ile Thr Val Glu Glu Leu Ser Val Ser
 145 150 155 160
 Gln Glu Val Leu Arg Lys Ile Phe Phe Asn Thr Lys Asp
 165 170

<210> 9083
 <211> 226
 <212> PRT
 <213> B.fragilis

<400> 9083

Asn	Thr	Phe	Val	Arg	Asp	Ile	Leu	Lys	Ile	Gln	Lys	Leu	Lys	Lys	Leu
1				5					10					15	
Tyr	Trp	Tyr	Phe	Phe	Ser	Leu	Leu	Ala	Phe	Gly	Tyr	Met	Phe	Gln	Ala
			20					25					30		
Cys	Asp	Asn	Ser	Lys	Thr	Tyr	Ala	Glu	Met	Leu	Asp	Glu	Glu	Lys	Asp
		35					40				45				
Ala	Val	Asn	Ala	Phe	Ile	Lys	Lys	His	Asn	Ile	Gln	Thr	Ile	Ser	Glu
	50					55					60				
Ser	Asp	Phe	Glu	Ala	Asn	Gly	Tyr	Lys	Thr	Asp	Thr	Thr	Lys	Asn	Glu
65					70					75					80
Tyr	Val	Ala	Phe	Ser	Asn	Gly	Val	Tyr	Met	Gln	Ile	Val	Asp	Lys	Gly
			85						90					95	
Ile	Val	Thr	Asp	Lys	Pro	Glu	Asn	Asp	Ser	Ile	Lys	Asn	Asn	Asn	Ile
			100					105					110		
Val	Ala	Val	Arg	Phe	Val	Glu	His	Asp	Ile	Lys	Ala	Asn	Asp	Thr	Thr
		115					120						125		
Cys	Phe	Asn	Val	Val	Leu	Pro	Gly	Phe	Glu	Asn	Tyr	Pro	Asn	Tyr	Tyr
	130					135					140				
Thr	Tyr	Pro	Asp	Val	Phe	Arg	Tyr	Val	Asp	Asn	Gly	Thr	Ser	Val	Ala
145					150					155					160
Gly	Val	Phe	Thr	Glu	Gly	Ser	Met	Tyr	Ala	Lys	Tyr	Gly	Thr	Thr	Asp
				165					170					175	
Val	Pro	Pro	Gly	Trp	Leu	Leu	Ala	Leu	Lys	Tyr	Val	Thr	Asn	Tyr	Ala
			180					185					190		
His	Val	Arg	Met	Ile	Val	Pro	Ser	Lys	Met	Gly	His	Gln	Ser	Ala	Asn
		195					200					205			
Gln	Tyr	Val	Asn	Pro	Tyr	Phe	Tyr	Asp	Ile	Arg	Lys	Phe	Gln	Lys	Ala
	210					215					220				
Leu	Asn														
225															

<210> 9084
 <211> 154
 <212> PRT
 <213> B.fragilis

<400> 9084

Arg	Val	His	Val	Pro	His	Glu	Gln	Gly	Pro	Leu	Thr	Val	Ser	Tyr	Ala
1				5					10					15	
Arg	Asp	Val	Arg	Val	Ile	Val	Tyr	Glu	Glu	Lys	Met	His	Arg	Val	Asp
		20						25				30			
Ser	Asn	Glu	Ile	Ser	Phe	Met	Leu	Ala	Glu	Arg	Asn	Ala	Phe	Ser	Glu
	35					40					45				
Ala	Phe	Lys	Asn	Ala	Gly	Pro	Lys	Ile	Leu	Glu	Pro	Ile	Tyr	Asp	Val
	50					55					60				
Glu	Val	Phe	Val	Pro	Ser	Asp	Lys	Met	Gly	Asp	Val	Met	Gly	Asp	Leu
65					70					75					80
Gln	Gly	Arg	Arg	Ala	Met	Ile	Met	Gly	Met	Ser	Ser	Glu	Asn	Gly	Tyr
				85					90					95	
Glu	Lys	Leu	Val	Ala	Lys	Val	Pro	Leu	Lys	Glu	Met	Ser	Ser	Tyr	Ser
			100					105					110		
Thr	Ala	Leu	Ser	Ser	Leu	Thr	Gly	Gly	Arg	Ala	Ser	Phe	Ile	Met	Lys

115	120	125
Phe Ala Ser Tyr Glu Leu Val Pro Ser Asp Val Gln Asp Lys Leu Ile		
130	135	140
Lys Asp Phe Glu Ser Lys Gln Thr Glu Glu		
145	150	

<210> 9085

<211> 527

<212> PRT

<213> B.fragilis

<400> 9085

Leu Gly Ser Val Asn Phe Val Ala Met Lys Lys Ser Thr Ile Trp Ile		
1	5	10
Leu Gly Ile Ile Met Gly Leu Ser Phe Leu Ser Leu Leu Tyr Leu Gln		
20	25	30
Val Ser Tyr Ile Glu Glu Met Val Lys Met Arg Lys Glu Gln Phe Asn		
35	40	45
Thr Ser Val Arg Asn Ala Leu Phe Gln Val Ser Lys Asp Val Glu Tyr		
50	55	60
Asp Glu Thr Gln Arg Trp Leu Leu Glu Asp Ile Thr Glu Ala Glu Arg		
65	70	75
Arg Ala Leu Ala Gln Ser Ser Ser Thr Thr Glu Gln Lys Asn Gly Leu		
85	90	95
Ile Gln Gln Ser Glu Arg Tyr Arg Phe Lys Ser Pro Asp Gly Thr Leu		
100	105	110
Tyr Ser Glu Phe Glu Leu Lys Met Ile Thr Thr Glu Pro Ser Lys Val		
115	120	125
Pro Lys Ala Met Ile Ser Glu Arg His Gly Arg Asn Thr Ile Pro Gln		
130	135	140
Thr Ser Arg Ser Leu Thr Asp Ala Ile Lys Asn Arg Tyr Met Tyr Gln		
145	150	155
Arg Phe Leu Leu Asp Asp Val Ala Leu Arg Met Ile Tyr Lys Ala Ser		
165	170	175
Asp Lys Ser Ile Gly Glu Arg Val Asn Phe Lys Lys Leu Asp Asn Tyr		
180	185	190
Leu Lys Ser Asn Phe Ile Asn Asn Gly Val Glu Leu Leu Tyr His Phe		
195	200	205
Ser Val Ile Asp Lys Asp Gly Arg Glu Val Tyr Arg Cys Ser Asp Tyr		
210	215	220
Glu Asp Gly Gly Ser Glu Asp Ser Tyr Thr Gln Pro Leu Phe Gln Asn		
225	230	235
Asp Pro Pro Ala Lys Met Ser Ile Val Lys Val His Phe Pro Gly Lys		
245	250	255
Lys Asp Tyr Ile Phe Asp Ser Val Ser Phe Met Ile Pro Ser Met Ile		
260	265	270
Phe Thr Ile Val Leu Leu Ile Thr Phe Ile Phe Thr Ile Tyr Ile Val		
275	280	285
Phe Arg Gln Lys Lys Leu Thr Glu Met Lys Asn Asp Phe Ile Asn Asn		
290	295	300
Met Thr His Glu Phe Lys Thr Pro Ile Ser Thr Ile Ser Leu Ala Ala		
305	310	315
Gln Met Leu Lys Asp Pro Ala Val Gly Lys Ser Pro Gln Met Phe Gln		
325	330	335
His Ile Ser Gly Val Ile Asn Asp Glu Thr Lys Arg Leu Arg Phe Gln		
340	345	350
Val Glu Lys Val Leu Gln Met Ser Met Phe Asp Arg Gln Lys Ala Thr		
355	360	365
Leu Lys Met Lys Glu Leu Asp Ala Asn Glu Leu Ile Thr Gly Val Ile		

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      370                      375                      380
Asn Thr Phe Ala Leu Lys Val Glu Arg Tyr Asn Gly Lys Ile Thr Ser
385                      390                      395                      400
Asn Leu Glu Ala Thr Asn Pro Val Ile Phe Ala Asp Glu Met His Ile
      405                      410                      415
Thr Asn Val Ile Phe Asn Leu Met Asp Asn Ala Val Lys Tyr Lys Lys
      420                      425                      430
Pro Glu Glu Asp Leu Val Leu Asn Val Arg Thr Trp Asn Glu Pro Gly
      435                      440                      445
Lys Leu Met Ile Ser Ile Gln Asp Asn Gly Ile Gly Ile Lys Lys Glu
      450                      455                      460
Asn Leu Lys Lys Val Phe Asp Lys Phe Tyr Arg Val His Thr Gly Asn
465                      470                      475                      480
Leu His Asp Val Lys Gly Phe Gly Leu Gly Leu Ala Tyr Val Lys Lys
      485                      490                      495
Ile Ile Gln Asp His Lys Gly Thr Ile Arg Ala Glu Ser Glu Leu Asn
      500                      505                      510
Val Gly Thr Lys Phe Ile Ile Ala Leu Pro Leu Leu Lys Asn Asp
      515                      520                      525

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<210> 9086

<211> 488

<212> PRT

<213> B.fragilis

<400> 9086

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Lys Phe Cys Leu Ile Asn Lys Cys Ile Thr Ala Ala Met Ser Glu Ser
1                      5                      10                      15
Ser His Val Gly Leu Trp Asn Arg Cys Leu Glu Ile Ile Arg Asp Asn
      20                      25                      30
Val Pro Glu Ser Thr Tyr Lys Thr Trp Phe Val Pro Ile Val Pro Leu
      35                      40                      45
Lys Tyr Glu Asp Lys Thr Leu Ile Val Gln Val Pro Ser Gln Phe Phe
      50                      55                      60
Tyr Glu Phe Leu Glu Asp Lys Phe Val Asp Leu Leu Arg Lys Thr Leu
65                      70                      75                      80
Tyr Lys Val Ile Gly Asp Gly Thr Lys Leu Met Tyr Asn Val Leu Val
      85                      90                      95
Asp Lys Ser Ser Gly Ala Thr Val Asn Gln Glu Ser Thr Thr Arg Ser
      100                      105                      110
Thr Ala Ile Pro Gln Ser Gly Leu Pro Arg Val Asp Glu Arg Lys Ala
      115                      120                      125
Pro Gly Leu Leu Arg Ala Pro Ala Val Gln Asp Leu Asp Pro His Leu
      130                      135                      140
Asn Pro Asn Tyr Asn Phe Glu Thr Phe Ile Glu Gly Tyr Ser Asn Lys
145                      150                      155                      160
Leu Ser Arg Ser Val Ala Glu Ala Val Ala Glu Asn Pro Ala Lys Thr
      165                      170                      175
Val Phe Asn Pro Leu Phe Leu His Gly Ala Ser Gly Val Gly Lys Thr
      180                      185                      190
His Leu Ala Asn Ala Ile Gly Thr Arg Ile Lys Glu Leu Tyr Pro Asp
      195                      200                      205
Lys Arg Val Leu Tyr Val Ser Ala His Leu Phe Gln Val Gln Tyr Thr
      210                      215                      220
Asp Ser Val Arg Asn Asn Thr Thr Asn Asp Phe Ile Asn Phe Tyr Gln
225                      230                      235                      240
Thr Ile Asp Val Leu Ile Ile Asp Asp Ile Gln Glu Phe Ala Gly Val
      245                      250                      255
Thr Lys Thr Gln Asn Thr Phe Phe His Ile Phe Asn His Leu His Gln

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260 265 270
 Asn Gly Lys Gln Leu Ile Leu Thr Ser Asp Arg Ala Pro Val Leu Leu
 275 280 285
 Gln Gly Met Glu Glu Arg Leu Thr Arg Phe Lys Trp Gly Met Val
 290 295 300
 Ala Glu Leu Glu Lys Pro Thr Val Glu Leu Arg Lys Asn Ile Leu Arg
 305 310 315 320
 Asn Lys Ile His Arg Asp Gly Leu Gln Phe Pro Ser Glu Val Ile Asp
 325 330 335
 Tyr Ile Ala Glu Asn Val Asn Glu Ser Val Arg Asp Leu Glu Gly Ile
 340 345 350
 Val Ile Ser Ile Met Ala His Ser Thr Ile Tyr Asn Lys Glu Ile Asp
 355 360 365
 Leu Asp Leu Ala Gln Arg Ile Val Arg Lys Val Val Arg Cys Glu Thr
 370 375 380
 Lys Ala Val Thr Ile Asp Asp Ile Ile Asn Val Val Cys Lys His Phe
 385 390 395 400
 Asp Leu Glu Ser Ser Ala Ile His Thr Lys Ser Arg Lys Arg Glu Val
 405 410 415
 Val Gln Ala Arg Gln Val Ala Met Tyr Leu Ala Lys Thr His Thr Asp
 420 425 430
 Phe Ser Thr Ser Lys Ile Gly Lys Phe Ile Gly Asn Lys Asp His Ala
 435 440 445
 Thr Val Leu His Ala Cys Lys Thr Val Lys Gly Gln Cys Glu Val Asp
 450 455 460
 Lys Gly Phe Arg Ser Asp Leu Glu Asn Ile Glu Thr Leu Leu Lys Lys
 465 470 475 480
 Arg Asn Val Ser Asn Gly Glu Arg
 485

<210> 9087

<211> 221

<212> PRT

<213> B.fragilis

<400> 9087

Pro Met Asn Val Gln Ile Glu Glu Ser Trp Lys Thr His Leu Glu Pro
 1 5 10 15
 Glu Phe Glu Lys Asp Tyr Phe Arg Thr Leu Thr Glu Phe Val Arg Ser
 20 25 30
 Glu Tyr Ser Gln Tyr Gln Ile Phe Pro Pro Gly Lys Leu Ile Phe Asn
 35 40 45
 Ala Phe Asn Leu Cys Pro Phe Asp Lys Val Lys Val Val Ile Ile Gly
 50 55 60
 Gln Asp Pro Tyr His Gly Pro Gly Gln Ala His Gly Leu Cys Phe Ser
 65 70 75 80
 Val Asn Asp Gly Val Ala Phe Pro Pro Ser Leu Val Asn Ile Phe Lys
 85 90 95
 Glu Ile Lys Glu Asp Ile Gly Thr Pro Ala Pro Ser Thr Gly Asn Leu
 100 105 110
 Thr Arg Trp Ala Glu Gln Gly Val Leu Leu Leu Asn Ala Thr Leu Thr
 115 120 125
 Val Arg Ala His Gln Ala Gly Ser His Gln Arg Arg Gly Trp Glu Glu
 130 135 140
 Phe Thr Asp Ala Ala Ile Arg Val Leu Ala Glu Glu Arg Glu Asn Leu
 145 150 155 160
 Val Phe Ile Leu Trp Gly Ser Tyr Ala Gln Lys Lys Gly Ala Phe Ile
 165 170 175
 Asp Arg Asn Lys His Leu Val Leu Ser Ser Ala His Pro Ser Pro Leu

	180		185		190
Ser	Ala	Tyr	Asn	Gly	Phe
	195		200		205
Glu	Tyr	Leu	Lys	Ala	His
	210		215		220

<210> 9088
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 9088
 Lys Asp Asp Val Met Glu Lys Leu Ile Arg Arg Ile Gly Leu Val Ala
 1 5 10 15
 His Asp Ala Met Lys Lys Asp Leu Ile Glu Trp Val Leu Trp Asn Ser
 20 25 30
 Glu Leu Leu Met Gly His Lys Phe Tyr Cys Thr Gly Thr Thr Gly Thr
 35 40 45
 Leu Ile Gln Glu Ala Leu Lys Glu Lys His Pro Asp Val Glu Trp Asp
 50 55 60
 Phe Thr Ile Leu Lys Ser Gly Pro Leu Gly Gly Asp Gln Gln Met Gly
 65 70 75 80
 Ser Arg Ile Val Asp Gly Glu Ile Asp Tyr Leu Phe Phe Phe Thr Asp
 85 90 95
 Pro Met Thr Leu Gln Pro His Asp Thr Asp Val Lys Ala Leu Thr Arg
 100 105 110
 Leu Ala Ser Val Glu Asn Ile Val Phe Cys Cys Asn Arg Ser Thr Ala
 115 120 125
 Asp His Ile Ile Ser Ser Pro Leu Phe Leu Asp Pro Asp Tyr Glu Arg
 130 135 140
 Thr His Pro Asp Tyr Ser Gly Tyr Thr Lys Arg Phe Glu Asn Lys Pro
 145 150 155 160
 Val Val Thr Glu Ala Val Glu Ser Val Lys Lys Arg Lys Arg Lys Lys
 165 170 175

<210> 9089
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9089
 Asn Tyr Lys Val Met Thr Glu Ser Glu Val Arg Lys Leu Leu Arg Arg
 1 5 10 15
 Met Lys Glu Leu Asp Ser Gln Thr Ala Phe Arg Ala Phe Tyr Asp Met
 20 25 30
 Thr Tyr Asp Arg Leu Tyr Arg Ile Ala Tyr Tyr Tyr Val Lys Arg Glu
 35 40 45
 Glu Trp Ser Gln Glu Ile Val Leu Asp Val Phe Leu Lys Leu Trp Glu
 50 55 60
 Gln Arg Ser Ser Leu Pro Glu Val Lys Ser Ile Glu Asp Tyr Cys Phe
 65 70 75 80
 Ile Leu Val Lys Asn Ala Ser Leu Asn Tyr Leu Glu Lys Glu Asn Arg
 85 90 95
 Arg Thr Thr Val Ser Thr Glu Thr Leu Pro Glu Pro Glu Ala Gln Ser
 100 105 110
 Asp Ser Pro Glu Glu Ser Met Ile Ser Glu Glu Leu Phe Ala Ile Tyr
 115 120 125
 Val Lys Ala Leu Asp Arg Leu Pro Glu Arg Cys Arg Glu Val Phe Ile
 130 135 140

Arg Ile Arg Glu Glu Lys Gln Ser Tyr Ala Gln Val Ala Glu Glu Leu
 145 150 155 160
 Gly Ile Ser Thr Lys Thr Val Asp Ala Gln Leu Gln Lys Ala Thr Ile
 165 170 175
 Arg Leu Lys Glu Ala Ile Ser Met Val Asn Asn Asp Arg
 180 185

<210> 9090
 <211> 179
 <212> PRT
 <213> B.fragilis

<400> 9090
 Asn Met Lys Val Leu Asp Leu Ile Asp Lys Tyr Tyr Pro Gln Asp Asn
 1 5 10 15
 Glu Leu Lys His Ile Leu Asn Val His Ser Arg Ser Val Ala Asp Lys
 20 25 30
 Ala Leu Trp Ile Ala Gly Lys His Pro Glu Leu Asn Leu Asp Thr Val
 35 40 45
 Phe Leu Glu Glu Ala Ala Met Leu His Asp Ile Gly Ile Phe Leu Thr
 50 55 60
 His Ala Pro Gly Ile Gln Cys Phe Gly Thr Glu Pro Tyr Ile Cys His
 65 70 75 80
 Gly Tyr Leu Gly Ala Gly Leu Val Arg Lys Glu Gly Phe Pro Arg His
 85 90 95
 Ala Leu Val Cys Glu Arg His Thr Gly Ala Gly Leu Ser Leu Lys Asp
 100 105 110
 Ile Met Asp Gln Lys Leu Pro Val Pro His Arg Glu Met Leu Pro Val
 115 120 125
 Ser Met Glu Glu Gln Val Ile Cys Phe Ala Asp Lys Phe Phe Ser Lys
 130 135 140
 Thr His Leu Asp Arg Glu Lys Thr Val Glu Gly Ala Arg Lys Ser Ile
 145 150 155 160
 Ala Lys Tyr Gly Asp Glu Gly Leu Gln Arg Phe Asn Asn Trp Cys Lys
 165 170 175
 Leu Phe Leu

<210> 9091
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 9091
 Asn Asp Gln Phe Asp Asn Ile Leu Ala Tyr Cys Ser Tyr Arg Tyr Arg
 1 5 10 15
 Tyr Tyr Ser Tyr Leu Cys Arg Gln Ile Thr Ile Asn Lys Pro Met Ser
 20 25 30
 Tyr Leu Ile Lys Pro Gln Asn Tyr Lys Pro Leu Leu Asp Leu Lys Gln
 35 40 45
 Thr Glu Leu Gly Ile Lys Gln Ile Lys Glu Phe Phe Gln Leu Asn Leu
 50 55 60
 Ser Ser Glu Leu Arg Leu Arg Arg Val Thr Ala Pro Leu Phe Val Leu
 65 70 75 80
 Lys Gly Met Gly Ile Asn Asp Asp Leu Asn Gly Ile Glu Arg Pro Val
 85 90 95
 Ser Phe Pro Ile Lys Asp Leu Gly Asp Ala Gln Ala Glu Val Val His
 100 105 110
 Ser Leu Ala Lys Trp Lys Arg Leu Thr Leu Ala Asp Tyr His Ile Glu

115	120	125
Pro Gly Tyr Gly Ile Tyr Thr	Asp Met Asn Ala Ile	Arg Ser Asp Glu
130	135	140
Glu Leu Gly Asn Leu His Ser	Leu Tyr Val Asp Gln	Trp Asp Trp Glu
145	150	155
Arg Val Ile Thr Ala Glu Asp	Arg Asn Ala Asp Phe	Leu Lys Glu Ile
165	170	175
Val Asn Arg Ile Tyr Ala Ala	Met Ile Arg Thr Glu Tyr	Met Val Tyr
180	185	190
Glu Met Tyr Pro Gln Ile Lys	Pro Cys Leu Pro Gln Lys	Leu His Phe
195	200	205
Ile His Ser Glu Glu Leu Arg	Gln Leu Tyr Pro Asp Met	Glu Pro Lys
210	215	220
Cys Arg Glu His Ala Ile Cys	Lys Lys Tyr Gly Ala Val	Phe Ile Ile
225	230	235
Gly Ile Gly Cys Lys Leu Ser	Asp Gly Lys Lys His Asp	Gly Arg Ala
245	250	255
Pro Asp Tyr Asp Asp Tyr Thr	Ser Lys Gly Leu Asn Asp	Leu Pro Gly
260	265	270
Leu Asn Gly Asp Leu Leu Leu	Trp Asp Asp Val Leu Gln	Arg Ser Ile
275	280	285
Glu Leu Ser Ser Met Gly Ile	Arg Val Asp Lys Glu Ala	Leu Leu Arg
290	295	300
Gln Val Lys Gln Glu Asn Gln	Glu Gln Arg Leu Glu Leu	Tyr Phe His
305	310	315
Lys Arg Leu Leu Asn Asp Thr	Leu Pro Leu Ser Ile Gly	Gly Gly Ile
325	330	335
Gly Gln Ser Arg Leu Cys Met	Phe Tyr Leu Arg Lys Ala	His Ile Gly
340	345	350
Glu Ile Gln Ala Ser Ile Trp	Pro Glu Glu Met Arg Arg	Glu Cys Thr
355	360	365
Ala Leu Asn Ile His Leu Ile		
370	375	

<210> 9092

<211> 211

<212> PRT

<213> B.fragilis

<400> 9092

Arg Thr Leu Ser Pro Phe Ala Asp Asp Thr Tyr Leu Cys Ile Ile Gln	
1	5 10 15
Thr Asp Ala Lys Ser Leu Met Glu Thr Phe Ile Glu Lys Phe Arg Asn	
20	25 30
Ser Tyr His Leu Ser Glu Asn Asp Thr Gln Thr Leu Leu Ser Tyr Met	
35	40 45
Glu Glu Ile Arg Phe Lys Lys Lys Glu Val Ile Val His Glu Gly Ser	
50	55 60
Lys Asn Gly Asn Leu Tyr Leu Ile Lys Gln Gly Ile Trp Arg Ala His	
65	70 75 80
Tyr Leu Lys Asp Gly Val Asp Thr Thr Ile Trp Phe Ala Gly Ala Gly	
85	90 95
Glu Ala Ala Phe Ser Val Trp Gly Tyr Val Glu Asn Thr Ala Ser His	
100	105 110
Ile Thr Ile Glu Val Met Cys Asp Ser Ile Ala Tyr Cys Ile Pro Gly	
115	120 125
Ser Thr Leu Asn Asn Leu Tyr Ala Ser Ser Leu Gly Leu Ala Asn Leu	
130	135 140
Gly Arg Gln Leu Met Glu Arg Gln Leu Leu Ser Leu Glu Asn Trp Leu	

145				150				155				160			
Ile	Ser	Ala	Gly	Ser	Pro	Lys	Ala	Lys	Glu	Arg	Tyr	Leu	Thr	Leu	Ile
				165					170					175	
Lys	Glu	His	Pro	Glu	Leu	Leu	Gln	Asn	Val	Pro	Leu	Lys	His	Ile	Ala
			180					185					190		
Ser	Tyr	Leu	Trp	Ile	Thr	Pro	Gln	Ser	Leu	Ser	Arg	Ile	Arg	Arg	Glu
		195					200					205			
Met	Lys	Met													
		210													

<210> 9093

<211> 519

<212> PRT

<213> B.fragilis

<400> 9093

Glu	Tyr	Phe	Pro	Ser	Ser	Val	Ile	Ile	Leu	Phe	Ser	Glu	Ile	Asn	Lys
1				5					10					15	
Arg	Arg	Thr	Met	Asn	Lys	Pro	Tyr	Phe	Ile	Ala	Phe	Leu	Leu	Ser	Leu
			20					25					30		
Ala	Leu	Trp	Thr	Val	Ile	Pro	Ser	Val	Phe	Ala	Gly	Asp	Val	Val	Leu
		35					40					45			
Lys	Val	Phe	Glu	Gly	Lys	Pro	Arg	Ile	Asn	Ser	Pro	His	Ile	Thr	Gly
	50				55						60				
Asn	Tyr	Pro	Ser	Thr	Pro	Phe	Ile	Phe	Tyr	Ile	Pro	Thr	Ser	Gly	Gln
65					70				75						80
Arg	Pro	Met	Gln	Trp	Ser	Ala	Glu	Lys	Leu	Pro	Glu	Gly	Leu	Glu	Leu
			85						90					95	
Asp	Ser	Lys	Thr	Gly	Ile	Ile	Ser	Gly	Val	Val	Thr	Ser	Lys	Gly	Asp
			100					105					110		
Tyr	Thr	Val	Thr	Leu	Lys	Ala	Glu	Asn	Ala	Leu	Gly	Val	Ser	Val	Lys
		115					120					125			
Gln	Leu	Val	Ile	Arg	Ile	Gly	Asp	Glu	Leu	Leu	Leu	Thr	Pro	Pro	Met
	130					135					140				
Gly	Trp	Asn	Ser	Trp	Asn	Thr	Phe	Gly	Gln	His	Leu	Thr	Glu	Glu	Leu
145					150				155						160
Val	Leu	Gln	Thr	Ala	Asp	Ala	Met	Ile	Thr	Asn	Gly	Met	Arg	Asp	Leu
				165					170					175	
Gly	Tyr	Ser	Tyr	Ile	Asn	Ile	Asp	Asp	Phe	Trp	Gln	Leu	Pro	Glu	Arg
			180				185						190		
Gly	Ala	Asp	Gly	His	Leu	Gln	Ile	Asp	Lys	Thr	Lys	Phe	Pro	Arg	Gly
		195					200					205			
Ile	Lys	Tyr	Val	Ala	Asp	Tyr	Leu	His	Glu	Arg	Gly	Phe	Lys	Leu	Gly
	210					215					220				
Ile	Tyr	Ser	Asp	Ala	Ala	Glu	Lys	Thr	Cys	Gly	Gly	Val	Cys	Gly	Ser
225					230					235					240
Tyr	Gly	Tyr	Glu	Glu	Thr	Asp	Ala	Lys	Asp	Phe	Ala	Ser	Trp	Gly	Val
			245						250					255	
Asp	Leu	Leu	Lys	Tyr	Asp	Tyr	Cys	Asn	Ala	Pro	Val	Asp	Arg	Val	Glu
			260					265					270		
Ala	Met	Glu	Arg	Tyr	Ala	Lys	Met	Gly	Arg	Ala	Leu	Arg	Ala	Thr	Asn
	275						280					285			
Arg	Ser	Ile	Val	Tyr	Ser	Val	Cys	Glu	Trp	Gly	Gln	Arg	Glu	Pro	Trp
	290					295					300				
Lys	Trp	Ala	Lys	Gln	Val	Gly	Gly	His	Leu	Trp	Arg	Val	Ser	Gly	Asp
305					310				315						320
Ile	Gly	Asp	Ile	Trp	Tyr	Arg	Asp	Gly	Asn	Arg	Val	Gly	Gly	Leu	His
			325						330					335	
Gly	Ile	Leu	Asn	Ile	Leu	Glu	Ile	Asn	Ala	Pro	Leu	Ser	Glu	Tyr	Ala

340	345	350
Ser Pro Ser Gly Trp Asn Asp	Pro Asp Met Leu Val	Val Gly Ile Asp
355	360	365
Gly Lys Ala Ser Met Ser Ile Gly	Tyr Glu Ser Glu Gly	Cys Thr Gln Glu
370	375	380
Gln Tyr Lys Ser His Phe Ser	Leu Trp Cys Met Met	Ala Ser Pro Leu
385	390	395
Leu Ser Gly Asn Asp Val Arg	Asn Met Asn Asp Ser	Thr Leu Lys Ile
405	410	415
Leu Leu Asp Pro Asp Leu Ile	Ala Ile Asn Gln Asp	Val Leu Gly Arg
420	425	430
Gln Ala Glu Arg Ser Ile Arg	Ser Asp His Tyr Asp	Ile Trp Val Lys
435	440	445
Pro Leu Ala Asp Gly Cys Lys	Ala Val Ala Cys Phe	Asn Arg Ala Ser
450	455	460
Ser Pro Gln Thr Val Ile Leu	Asn Glu Asn Thr Ile	Ala Asp Leu Ser
465	470	475
Phe Glu Gln Ile Tyr Cys Leu	Asp Ser His Leu Thr	Lys Ser Gly Ser
485	490	495
Asp Ser Lys Glu Leu Ile Val	Lys Leu Ala Pro Tyr	Gln Cys Lys Val
500	505	510
Tyr Ile Phe Gly Lys Thr Asp		
515		

<210> 9094

<211> 167

<212> PRT

<213> B.fragilis

<400> 9094

Asn Tyr Lys Pro Pro Thr His Met Lys Asp Leu Thr Ile Thr Ser Val	
1 5 10 15	
Ile Lys Val Tyr Glu Tyr Asp Glu Leu Asn Asp Thr Asp Arg Ala Leu	
20 25 30	
Leu Asp Asp Ala Ile Glu Ala Thr Arg Arg Ser Tyr Ala Pro Tyr Ser	
35 40 45	
His Phe Ser Val Gly Ala Ala Ala Leu Leu Ala Asn Gly Val Val Val	
50 55 60	
Thr Gly Thr Asn Gln Glu Asn Ala Ala Tyr Pro Ser Gly Leu Cys Ala	
65 70 75 80	
Glu Arg Thr Thr Leu Phe Tyr Ala Asn Ser Gln Tyr Pro Asp Gln Ala	
85 90 95	
Val Val Thr Leu Ala Ile Ala Ala Arg Thr Glu Lys Asp Phe Ile Asp	
100 105 110	
Thr Pro Ile Pro Pro Cys Gly Ala Cys Arg Gln Val Ile Leu Glu Thr	
115 120 125	
Glu Lys Arg Tyr Lys Gln Pro Ile Arg Ile Leu Leu Tyr Gly Lys Lys	
130 135 140	
Cys Ile Tyr Glu Val Gln Ser Ile Gly His Leu Leu Pro Leu Ser Phe	
145 150 155 160	
Asp Ala Ser Ala Met Glu Asp	
165	

<210> 9095

<211> 426

<212> PRT

<213> B.fragilis

<400> 9095

Lys Gln Arg Pro Met Met Ile Lys Gln Ile Phe Lys Met Ile Trp Asn
 1 5 10 15
 Gln Arg Arg Leu Asn Gly Trp Ile Trp Met Glu Leu Leu Val Val Phe
 20 25 30
 Val Ala Leu Trp Tyr Leu Val Asp Met Phe Val Val Gln Leu Tyr Ser
 35 40 45
 Tyr Thr Arg Pro Met Gly Tyr Asp Ile Thr Asn Cys Trp Lys Leu Ser
 50 55 60
 Phe Asp Val Tyr Pro Glu Asp Ala Asp Glu Tyr Val Asn Asp Thr Thr
 65 70 75 80
 Gln Thr Gln Thr Glu Gly Glu Ala Leu Ala Lys Ile Leu Glu Arg Leu
 85 90 95
 Arg Arg Ala Pro Glu Val Asp Asn Ala Cys Val Ala Phe Tyr Ser Ser
 100 105 110
 Pro Tyr Ser Gly Gly Asn Ser Trp Thr Gln Ile Met Pro Cys Thr Ala
 115 120 125
 Asp Ser Ser Lys Phe Lys Glu Gln Ser Tyr His Gln Tyr Ile Val Ser
 130 135 140
 Ala Glu Phe Tyr Asp Val Phe Arg Ile Lys Asn Arg Glu Gly Lys Pro
 145 150 155 160
 Leu Ser Glu Leu Leu Thr Gln Lys Gln Leu Ser Tyr Phe Ile Thr Pro
 165 170 175
 Ala Leu Glu Lys Asp Phe Phe Gly Ser Gln Ser Ala Val Gly Gln Lys
 180 185 190
 Val Arg Tyr Pro Gly Ser Thr Arg Glu Ile His Ile Ala Ala Val Thr
 195 200 205
 Ala Pro Val Arg Ile Thr Glu Phe Val Lys Pro Glu Pro Glu Leu Phe
 210 215 220
 Phe Thr Met Trp Pro Lys Glu Leu Glu Arg Gln Val Asn Ala Thr Gly
 225 230 235 240
 Ala Ser Asn Met Glu Val Thr Val Arg Met Lys Glu Glu Leu Thr Ser
 245 250 255
 Glu Gln Met Gly His Phe Leu Asn Arg Met Lys Asn Gln Leu Thr Glu
 260 265 270
 Asn Asn Leu Tyr Ile Thr Gly Met Glu Asp Met Lys Gln Gln Arg Ser
 275 280 285
 Asp Arg Leu Gln Tyr Glu Trp Arg Lys Ile Ser Ile Asn Leu Leu Leu
 290 295 300
 Ser Val Phe Ile Leu Leu Asn Val Leu Phe Gly Ile Thr Gly Thr Phe
 305 310 315 320
 Trp Leu Arg Ile Glu Gln Arg Arg Cys Glu Thr Gly Leu Arg Met Ala
 325 330 335
 Leu Gly Ser Thr Arg Arg Arg Val Gly Trp Phe Phe Thr Ala Glu Gly
 340 345 350
 Trp Leu Leu Leu Thr Thr Val Val Pro Leu Val Leu Val Val Ile Phe
 355 360 365
 Asn Met Val His Met Glu Ile Pro Asp Leu Tyr Asn Leu Ser Phe Thr
 370 375 380
 Trp Trp Arg Phe Ala Val Ser Phe Gly Gly Val Leu Leu Leu Met Gly
 385 390 395 400
 Leu Ile Ile Ala Leu Gly Ile Trp Leu Pro Ala Arg Arg Ala Met Lys
 405 410 415
 Leu Gln Pro Ala Glu Ala Leu His Tyr Glu
 420 425

<210> 9096

<211> 81

<212> PRT

<213> B.fragilis

<400> 9096

Arg	His	His	Thr	Gly	Cys	Arg	Thr	Gln	Asp	Leu	Ser	Tyr	Val	Phe	Lys
1				5				10						15	
Phe	Arg	Cys	Cys	Ser	Lys	Asn	Asn	Ile	Ser	Ser	Arg	Met	Ile	Asp	Pro
			20					25					30		
Tyr	Ser	Leu	Lys	Lys	Ala	Lys	Glu	Asp	Glu	Glu	Asp	Lys	Met	Leu	Lys
		35					40					45			
Glu	Val	Arg	Leu	Pro	Ile	Gly	Gln	Val	Gln	Thr	Asp	Ile	Pro	Leu	Thr
	50					55					60				
Cys	Leu	Leu	Phe	Lys	Glu	Tyr	Val	Pro	Arg	Asn	Asp	Gln	Leu	Lys	Asn
65					70					75					80
Arg															

<210> 9097

<211> 329

<212> PRT

<213> B.fragilis

<400> 9097

Leu	Val	Thr	Thr	Arg	Pro	Thr	Ser	Leu	Ser	Trp	Thr	Ser	Leu	Pro	Thr
1				5				10					15		
Ile	Trp	Ile	Tyr	Lys	Val	Ser	Lys	Ser	Ser	Gln	Leu	Pro	Phe	Gly	Thr
			20					25					30		
Ile	Arg	Ala	Val	Tyr	Cys	Leu	Tyr	His	Met	Met	Asn	Ile	Leu	Gln	Arg
		35					40					45			
Lys	Pro	Ala	Ser	Glu	Arg	Val	Ser	Phe	Tyr	Asn	Phe	Ala	Pro	Phe	Lys
	50					55				60					
Lys	Asn	Asn	Pro	Lys	Met	Ile	Asn	Thr	Glu	Thr	Asn	Tyr	Arg	Trp	Phe
65				70					75						80
Ile	Phe	Tyr	Gln	Asp	Gln	Leu	Leu	Leu	Glu	Lys	Asn	Asp	Asn	Ala	Phe
			85					90					95		
Ser	Ile	Pro	Thr	Gly	Lys	Asn	Ala	Pro	Val	Thr	Ile	Pro	Glu	Gly	Ile
		100					105						110		
Thr	Val	His	Thr	Ile	Thr	Thr	Ala	Thr	Gly	Met	Val	Cys	Lys	Ala	Phe
	115						120					125			
Tyr	Thr	Asp	Ser	Pro	Ile	Ala	Glu	Thr	Pro	Glu	Tyr	Val	Gln	Ile	Gly
	130					135					140				
Leu	Arg	Ala	Ser	Tyr	Asp	Tyr	Leu	Ser	Pro	Glu	His	Tyr	Gln	Ala	Ala
145				150						155					160
Gly	Lys	Val	His	Glu	Ile	Leu	Tyr	Trp	Asp	Arg	Ser	Asn	Arg	Phe	Cys
			165						170					175	
Pro	Thr	Cys	Gly	Thr	Pro	Leu	Val	Gln	Lys	Glu	Pro	Ile	Met	Lys	Lys
		180						185					190		
Cys	Pro	Asn	Cys	Gly	Arg	Glu	Ile	Tyr	Pro	Val	Ile	Ser	Thr	Ala	Ile
	195					200						205			
Leu	Val	Leu	Val	Arg	Lys	Glu	Asp	Ser	Leu	Leu	Leu	Val	His	Ala	Arg
	210				215						220				
Asn	Phe	Lys	Gly	Thr	Phe	Asn	Ser	Leu	Val	Ala	Gly	Phe	Leu	Glu	Thr
225				230						235					240
Gly	Glu	Thr	Leu	Glu	Glu	Cys	Val	Ala	Arg	Glu	Val	Lys	Glu	Glu	Thr
			245					250					255		
Gly	Leu	Asp	Val	Lys	Asn	Ile	Arg	Tyr	Phe	Gly	Ser	Gln	Pro	Trp	Pro
		260						265					270		
Tyr	Pro	Ser	Gly	Leu	Met	Val	Gly	Phe	Ile	Ala	Asp	Tyr	Ala	Gly	Gly
	275						280					285			
Asp	Ile	His	Leu	Gln	Asp	Asp	Glu	Leu	Ser	Ser	Gly	Asn	Phe	Tyr	Thr
	290					295					300				

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Arg Asp His Leu Pro Glu Leu Pro Arg Lys Leu Ser Leu Ala Arg Lys
 305 310 315 320
 Met Ile Asp Trp Trp Ile Ala Gln Gln
 325

<210> 9098
 <211> 213
 <212> PRT
 <213> B.fragilis

<400> 9098
 Ser Leu His Gln Lys Val Lys Pro Ile Lys Arg Asn Ser Met Lys Glu
 1 5 10 15
 Lys Phe Ile Thr Leu Leu Thr Val Ala Ser Gly Leu Lys Gly Phe Gly
 20 25 30
 Leu Lys Phe Ile Arg Val Ala Ile Leu Val Val Phe Val Trp Ile Gly
 35 40 45
 Gly Leu Lys Tyr Phe His Tyr Glu Ala Asp Gly Ile Val Pro Phe Val
 50 55 60
 Ala Asn Ser Pro Phe Met Ser Phe Phe Tyr Ala Lys Asp Ala Pro Glu
 65 70 75 80
 Tyr Lys Glu His Lys Asn Pro Glu Gly Ala Tyr Val Pro Ala Asn Arg
 85 90 95
 Glu Trp His Glu Ala Asn Arg Thr Tyr Thr Phe Ser Tyr Gly Leu Gly
 100 105 110
 Ala Leu Ile Met Ser Ile Gly Ile Leu Val Phe Leu Gly Ile Phe Phe
 115 120 125
 Pro Lys Val Ala Leu Val Gly Asp Thr Leu Ala Ile Ile Met Thr Leu
 130 135 140
 Gly Thr Leu Ser Phe Leu Val Thr Thr Pro Glu Val Trp Val Pro Asn
 145 150 155 160
 Leu Gly Ser Gly Glu Tyr Gly Phe Pro Leu Leu Ser Gly Ala Gly Arg
 165 170 175
 Leu Val Ile Lys Asp Ile Val Ile Leu Ala Ser Ala Val Thr Leu Leu
 180 185 190
 Ser Asp Ser Ser Gln Arg Val Leu Asn Ser Leu Lys Lys Ala Asp Trp
 195 200 205
 Glu Lys Arg Asn Lys
 210

<210> 9099
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 9099
 Arg Ile Ser His Gly Gly Leu Ile Met Ile Arg Thr Tyr Gln Thr Lys
 1 5 10 15
 Leu Lys Gly Met Leu Ala Leu Thr Thr Ser Tyr His Thr Glu Lys Ser
 20 25 30
 Leu Gln Lys Glu Lys Ser Leu Tyr Lys Phe Ile Trp Val Arg Lys Gly
 35 40 45
 Ser Ile Thr Leu Glu Ile Asp His Gln Glu Val Ile Leu Ala Glu Asn
 50 55 60
 Glu Val Ile Ser Leu Ser Asn Leu Gln His Leu Glu Phe Leu Ser Ile
 65 70 75 80
 Asp Gly Glu Tyr Leu Thr Val Leu Phe Asn Ser Asn Phe Tyr Cys Ile
 85 90 95
 Tyr Gly Asn Asp His Glu Val Ser Cys Ser Gly Phe Leu Phe Asn Gly

225 230 235 240
 Asp Gly Asn Tyr Ala Gly Met Phe Asn Asp Tyr Asp His Ser Leu Ala
 245 250 255
 Ser Ser Glu Ile Leu Ala Gln Trp Arg Ser Ala Glu Asn Thr Asn
 260 265 270
 Phe Ser Asp Thr Trp Met Gln Arg Leu Val Pro Asn Ile Asp Pro Ser
 275 280 285
 Lys Leu Ile Ala Asp Val Gln Ala Lys Tyr Pro Leu Val Glu Glu Met
 290 295 300
 Ala Gly Trp Pro Gln Arg Phe Pro Ser Val Asp Leu Val Asn Asp Tyr
 305 310 315 320
 Leu Val Val Asp Glu Asp Gly Lys Ala Lys Glu Trp Asp Gln Thr Ser
 325 330 335
 Tyr Tyr Lys Lys Phe Leu Val Asp Gly Gly Thr Val Glu Asp Ala Ile
 340 345 350
 Tyr Lys Asn Arg Asp Lys Arg Phe Lys Ala Ser Ile Val Tyr Asp Gly
 355 360 365
 Cys Ser Tyr Phe Ala Asn Arg Val Trp Leu Arg Glu Gly Gly Asn Leu
 370 375 380
 Tyr Tyr Thr Ser Lys Thr Thr Glu Phe Trp Gly Met Pro Val Ser Gly
 385 390 395 400
 Tyr Val Tyr Arg Lys Cys Val Tyr Glu Ala Lys Arg Leu Leu Asn Ser
 405 410 415
 Glu Lys Thr Asp Tyr His Tyr Thr Leu Leu Arg Leu Gly Arg Ser Tyr
 420 425 430
 Leu Asn Tyr Ala Glu Ile Lys Leu Arg Gln Gly Asp Lys Glu Thr Ala
 435 440 445
 Ile Asp Tyr Ile Asn Arg Thr Arg Val Thr His Gly Gly Phe Ala Gly
 450 455 460
 Ile Ala Lys Ile Leu Ile Thr Gly Arg Tyr Leu Glu Arg Val
 465 470 475

<210> 9101

<211> 467

<212> PRT

<213> B.fragilis

<400> 9101

Arg Tyr Ile Leu Lys Val Ile Arg Ile Met Lys Gln Tyr Asp Ala Ile
 1 5 10 15
 Ile Ile Gly Phe Gly Lys Gly Gly Lys Thr Leu Thr Ala Glu Leu Ala
 20 25 30
 Lys Arg Gly Trp Lys Val Ala Leu Ile Glu Arg Ser Ala Met Met Tyr
 35 40 45
 Gly Gly Thr Cys Pro Asn Ile Ala Cys Val Pro Thr Lys Arg Leu Ile
 50 55 60
 His Glu Ala Glu Lys Val Ser Trp Leu Tyr Pro Thr Asp Tyr Glu Lys
 65 70 75 80
 Gln Ala Glu Ala Tyr Lys Ala Ala Ile Ala Arg Lys Asn Glu Met Thr
 85 90 95
 Ala Ala Ser Arg Ala Asn Met Phe Asn Lys Leu Ser Ser Leu Pro Asn
 100 105 110
 Val Thr Ile Tyr Thr Gly Met Ala Ser Phe Val Ser Lys Asp Val Val
 115 120 125
 Lys Val Thr Leu Pro Asp Glu Val Ile Glu Leu Gln Gly Lys Lys Ile
 130 135 140
 Phe Ile Asn Thr Gly Ser Thr Ser Ile Ile Pro Ala Ile Asp Gly Leu
 145 150 155 160
 Lys Asp Ser Lys Arg Val Tyr Thr Ser Thr Ser Leu Met Glu Leu Asp


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      165      170      175
Val Leu Pro Arg His Leu Ile Ile Val Gly Gly Gly Tyr Ile Gly Leu
      180      185      190
Glu Phe Ala Ser Met Tyr Ala Ser Phe Gly Ser Lys Val Thr Val Leu
      195      200      205
Glu Gly Gly Asn Lys Phe Ile Ala Arg Glu Asp Arg Asp Ile Ala Asp
      210      215      220
Ala Val Lys Glu Thr Leu Glu Lys Lys Gly Ile Glu Ile Arg Leu Asn
      225      230      235      240
Ala Arg Ala Gln Ser Ile Gln Asp Thr Ala Asp Gly Val Thr Leu Thr
      245      250      255
Tyr Thr Asp Thr Ala Asp Gly Lys Pro Val Thr Ile Glu Gly Asp Ala
      260      265      270
Ile Leu Val Ala Thr Gly Arg Lys Pro Met Thr Glu Gly Leu Asn Leu
      275      280      285
Gln Ala Ala Gly Val Glu Val Asp Ser His Gly Ala Ile Val Val Asn
      290      295      300
Gly Tyr Leu His Thr Thr Ala Pro Asn Ile Trp Ala Met Gly Asp Val
      305      310      315      320
Lys Gly Gly Leu Gln Phe Thr Tyr Ile Ser Leu Asp Asp Tyr Arg Ile
      325      330      335
Ile Arg Asp Asp Leu Phe Gly Asn Lys Glu Arg Thr Ala Asp Asp Arg
      340      345      350
Asn Pro Val Ala Tyr Ser Val Phe Ile Asp Pro Pro Leu Ser His Val
      355      360      365
Gly Leu Thr Glu Glu Glu Ala Ile Lys Arg Gly Tyr Ser Phe Lys Val
      370      375      380
Ser Arg Leu Pro Ala Ser Ala Leu Pro Arg Ala Arg Thr Leu Gln Gln
      385      390      395      400
Thr Asp Gly Ile Leu Lys Ala Ile Val Asp Ser His Ser Gly Arg Ile
      405      410      415
Met Gly Cys Thr Leu Phe Cys Ala Glu Ser Ser Glu Val Ile Asn Val
      420      425      430
Val Asn Met Ala Met Lys Thr Gly Gln His Tyr Thr Phe Leu Arg Asp
      435      440      445
Phe Ile Phe Thr His Pro Ser Met Gly Glu Gly Leu Asn Asp Leu Phe
      450      455      460
Ser Ile Asp
      465

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<210> 9102

<211> 299

<212> PRT

<213> B.fragilis

<400> 9102

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Met Asn Ser Lys Leu Leu Arg Leu Ile Ala Ile Val Thr Val Leu Ala
1      5      10      15
Phe Ala Ala Gly Ala Gln Ala Gln Arg Arg Asn Ser Arg Tyr Val Asp
      20      25      30
Tyr Ile Asn Lys Tyr Ser Ala Leu Ala Val Gln Gln Met Lys Glu His
      35      40      45
Lys Ile Pro Ala Ser Ile Thr Leu Ala Gln Gly Leu Leu Glu Ser Gly
      50      55      60
Ala Gly Met Ser Thr Leu Ala Arg Lys Ser Asn Asn His Phe Gly Ile
      65      70      75      80
Lys Cys Gly Ser Asn Trp Asn Gly Arg Thr Val Arg His Asp Asp Asp
      85      90      95
Ala Arg Asn Glu Cys Phe Arg Ala Tyr Arg Asn Pro Arg Asp Ser Tyr

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210	215	220
Ile Ala Leu Cys Gly Glu Asp Gln Asp Val Ile Tyr Asp Arg Ile Tyr		
225	230	235
Ile Gly Tyr Lys Tyr Thr Phe Val Glu Pro Gly Gln Val Gly Cys Ala		240
	245	250
Leu Ser Cys Thr Pro Ala Val Tyr Met Ala Gln Asn Ala Ile Pro Ala		255
	260	265
Asp Met Lys Pro Ala Asp Leu Cys Gln Met Thr Ile Ser Asp Trp Glu		270
	275	280
Glu Lys Leu Gly Leu Glu Glu Leu Thr Ile Phe Glu		285
	290	295
		300

<210> 9104
 <211> 156
 <212> PRT
 <213> B.fragilis

<400> 9104
Ser Ile Thr Asn Met Lys Lys Leu Ile Asn Thr Val Leu Leu Leu Phe
1 5 10 15
Leu Ile Gly Ile Val Ser Ser Cys Leu Lys Ser Gly Leu Asp Asp Leu
20 25 30
Glu Ala Tyr Asn Glu Ala Glu Ile Thr Asn Leu Asn Phe Glu Tyr Arg
35 40 45
Trp Trp Asp Glu Ala Lys Asp Gln Met Ala Val Lys Thr Leu Asn Ile
50 55 60
Glu Lys Gln Ile Ser Gln Asp Asp Asn Leu Ile Thr Cys Lys Leu Thr
65 70 75 80
Val Pro Ala Ala Gly Gly Ser Phe Thr Asp Ala Val Arg Gln Asn Val
85 90 95
Ser Leu Ser Asn Leu Ile Ala Tyr Met Asp Leu Ser Thr Ala Ala Arg
100 105 110
Ile Thr Pro Leu Asn Gly Ala Pro Lys Leu Gly Asn Pro Gly Asp Phe
115 120 125
Ser Ala Lys Glu Phe Lys Tyr Gln Val Thr Ala Ala Asp Gly Thr Lys
130 135 140
Arg Glu Trp Thr Ile Lys Ile Thr Asp Phe Val Lys
145 150 155

<210> 9105
 <211> 430
 <212> PRT
 <213> B.fragilis

<400> 9105
Ala Val Cys Leu Leu Ile Cys Lys Ile Met Ile Thr Ile Tyr Leu Lys
1 5 10 15
Gln Ser Tyr Asn Leu Leu Lys Glu Asn Arg Phe Val Asn Gly Ile Ser
20 25 30
Ile Ala Gly Thr Ala Leu Ser Val Ala Ala Val Met Leu Ile Tyr Leu
35 40 45
Val Tyr Gln Val Asn Phe Ser Ala Tyr Ala Pro Glu Ser Asn Arg Tyr
50 55 60
Arg Ile Leu Phe Val Ser Ser Leu Gln Ala Cys Gly Ser Asp Gly His
65 70 75 80
Pro Ile Asn Asn Gly Gly Met Ser His Lys Val Val Arg Glu Cys Leu
85 90 95
Tyr Pro Leu Gln Thr Pro Glu Ala Val Thr Ala Phe Thr Ser Gly Asp
100 105 110

Leu Pro Val Asn Val His Gly Gln Gln Phe Tyr Asp Lys Tyr Ala Ile
 115 120 125
 Lys Phe Thr Asp Asp Gly Phe Trp Lys Val Phe Asp Phe Thr Phe Leu
 130 135 140
 Ala Gly Gly Pro Phe Thr His Thr Asp Trp Glu Ser Gly Ile Arg Lys
 145 150 155 160
 Ala Val Ile Ser Asp Lys Leu Ala Arg Arg Leu Phe Gly Thr Val Glu
 165 170 175
 Ala Val Gly Gln Thr Leu Arg Met Asn Tyr Ala Asp Tyr Arg Ile Cys
 180 185 190
 Gly Val Val Lys Glu Val Ser Arg Ala Ala Glu Ser Ser Tyr Gly Asp
 195 200 205
 Val Trp Ile Pro Tyr Thr Ala Asn Ala Ser Leu Leu Lys Asp Asn Ile
 210 215 220
 Ser Tyr Cys Glu Gly Thr Thr Gly Glu Phe Gln Ala Cys Ile Leu Ser
 225 230 235 240
 Arg Ser Arg Ser Asp Phe Glu Ala Ile Arg Arg Glu Met Leu Lys Leu
 245 250 255
 Gln Ser Thr Phe Asn Ala Ser Leu Thr Gly Thr Lys Leu Asp Tyr Met
 260 265 270
 His Ser Pro Phe Thr Gln Trp Gln Ala Val Leu Gly Thr Asn Gly Phe
 275 280 285
 Ser Glu Gly Thr Val Gly Glu Trp Leu Lys Ser Thr Gly Ala Val Ile
 290 295 300
 Leu Phe Leu Leu Leu Leu Pro Ala Leu Asn Ile Ile Gly Ile Thr Leu
 305 310 315 320
 Thr Gln Phe Arg Lys Arg Arg Ser Glu Ile Gly Val Arg Lys Ala Phe
 325 330 335
 Gly Ala Cys Ser Phe Ser Leu Val Glu Gln Val Val Ile Glu Asn Leu
 340 345 350
 Leu Thr Ser Cys Met Gly Gly Leu Ile Gly Leu Leu Leu Ser Phe Gly
 355 360 365
 Leu Leu Ser Leu Cys Lys Ser Leu Phe Phe Ser Gly Asp Val Ser Leu
 370 375 380
 Thr His Asp Met Leu Ile Gln Pro Leu Thr Phe Val Ala Ala Phe Phe
 385 390 395 400
 Phe Thr Leu Ile Leu Asn Leu Leu Ser Ala Ala Ile Pro Ala Trp Arg
 405 410 415
 Ala Ser Arg Met Pro Ile Thr Glu Ala Leu His Asp Met Glu
 420 425 430

<210> 9106

<211> 417

<212> PRT

<213> B.fragilis

<400> 9106

Leu Tyr Met Asp Arg Glu Ile Pro Lys Glu Val Arg Asn Lys Glu Arg
 1 5 10 15
 Asn Lys Lys Ile Ile Arg Phe Ser Ala Ile Gly Ile Val Gly Ile Ile
 20 25 30
 Gly Ile Ser Val Leu Ile Ser Leu Leu Arg Thr Gly Val Gln Lys Lys
 35 40 45
 Asp Leu Val Phe Ser Thr Val Asp Lys Gly Thr Ile Glu Val Ser Val
 50 55 60
 Ser Ala Ser Gly Lys Val Val Pro Ala Phe Glu Glu Ile Ile Asn Ser
 65 70 75 80
 Pro Ile Asn Thr Arg Ile Val Glu Val Tyr Arg Lys Gly Gly Asp Ser
 85 90 95

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Val Asp Val Gly Thr Pro Ile Leu Lys Leu Asp Leu Gln Ser Thr Glu
      100      105      110
Thr Asp Tyr Lys Lys Leu Leu Asp Glu Glu Glu Met Lys Arg Tyr Lys
      115      120      125
Leu Asp Gln Ala Lys Val Asn Ser Gln Thr Lys Leu Ser Asp Met Ala
      130      135      140
Met Gln Ile Lys Val Ser Glu Met Lys Leu Ala Arg Met Lys Val Glu
      145      150      155      160
Leu Arg Asn Glu Gln Tyr Leu Asp Ser Leu Gly Ala Gly Thr Thr Asp
      165      170      175
Lys Val Arg Gln Ala Glu Leu Ser Tyr Asn Thr Ser Arg Leu Glu Leu
      180      185      190
Glu Gln Leu Lys Gln Gln Tyr Thr Asn Glu Lys Gln Ile Ala Ala Ala
      195      200      205
Asp Leu Lys Val Leu Glu Leu Asp Leu Asn Met Phe Arg Lys Gly Leu
      210      215      220
Ala Glu Met Lys Arg Thr Leu Asp Asp Ala Gln Ile Arg Ser Pro Arg
      225      230      235      240
Lys Ala Ile Leu Thr Tyr Ile Asn Asn Gln Ile Gly Ala Gln Ile Pro
      245      250      255
Gln Gly Gly Gln Val Ala Ile Ile Ser Asp Leu Ser His Phe Lys Val
      260      265      270
Asp Gly Glu Ile Ala Asp Thr Tyr Gly Asp Arg Val Ala Ala Gly Gly
      275      280      285
Lys Ala Ile Val Lys Ile Gly Ser Glu Lys Leu Glu Gly Ile Val Ser
      290      295      300
Ser Val Thr Pro Leu Ser Lys Asn Gly Val Ile Ser Phe Ser Val Gln
      305      310      315      320
Leu Lys Glu Asp Asn Asn Lys Arg Leu Arg Ser Gly Leu Lys Thr Asp
      325      330      335
Val Tyr Val Met Asn Ala Val Lys Glu Asp Val Leu Arg Ile Ala Asn
      340      345      350
Ala Ser Tyr Tyr Val Gly Arg Gly Glu Tyr Asp Leu Phe Val Met Thr
      355      360      365
Ser Asp Asp Glu Ile Val Lys Arg Lys Ile Gln Leu Gly Asp Ser Asn
      370      375      380
Phe Glu Phe Val Glu Val Ser Gly Leu Asn Pro Gly Asp Lys Val
      385      390      395      400
Val Val Ser Asp Met Thr Asn Tyr Lys Asn Lys Asn Lys Leu Lys Val
      405      410      415
Lys

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<210> 9107

<211> 531

<212> PRT

<213> B.fragilis

<400> 9107

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Thr Ala Met Cys Ile Gln Val Gln Gln Ile Thr Tyr Ile His Pro Asp
1      5      10      15
Lys Glu Val Leu Phe Arg Asn Leu Ser Phe Thr Val Gly Arg Gly Arg
      20      25      30
Gln Leu Ala Leu Ile Gly Asn Asn Gly Cys Gly Lys Ser Thr Leu Leu
      35      40      45
Gln Ile Met Ala Gly Lys Leu Gln Pro Ser Ser Gly Asn Val Leu Arg
      50      55      60
Pro Asp Asp Leu Tyr Tyr Val Pro Gln His Phe Gly Gln Tyr Asp Glu
      65      70      75      80

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Met Ser Ile Ala Gln Ala Leu Gly Ile Asp Arg Lys Gln Lys Ala Leu
 85 90 95
 His Glu Ile Leu Asn Gly Asn Ala Ser Ile Asp His Phe Asn Ile Leu
 100 105 110
 Asp Asp Asp Trp Asn Ile Glu Glu Lys Ala Leu Ala Ala Leu Asn Gly
 115 120 125
 Trp Gly Leu Gly Asn Arg Ser Leu Ser Glu Ser Met His Thr Leu Ser
 130 135 140
 Gly Gly Glu Lys Thr Arg Val Phe Leu Ala Gly Leu Glu Leu Gln Glu
 145 150 155 160
 Pro Ser Ala Val Leu Met Asp Glu Pro Thr Asn His Leu Asp Asn Gln
 165 170 175
 Gly Arg Asn Arg Leu Tyr Glu Trp Val Lys Lys Cys Arg Ser Thr Leu
 180 185 190
 Ile Val Val Ser His Asp Arg Thr Leu Leu Asn Arg Phe Pro Glu Thr
 195 200 205
 Cys Glu Leu Ser Arg Asn Ala Leu Val Cys Tyr Gly Gly Asn Tyr Glu
 210 215 220
 Phe Tyr Lys Gln Gln Lys Glu Leu Gln Gln Asn Ala Leu Gln Gln Gln
 225 230 235 240
 Leu Asn Glu Lys Glu Lys Glu Leu Arg Gln Ile Arg Lys Leu Ala Arg
 245 250 255
 Glu Val Ala Glu Arg Lys Glu Lys Gln Asn Ile Arg Ser Glu Lys Ser
 260 265 270
 Val Pro Lys Lys Gly Ile Ser Arg Met Ala Val His Thr Leu Lys Asp
 275 280 285
 Arg Ala Glu Lys Ser Thr Thr Lys Leu Ala Asp Ile His Gln Asn Lys
 290 295 300
 Ser Glu Lys Leu Thr Ser Glu Arg Ser Leu Ile Arg Asn Arg Leu Ala
 305 310 315 320
 Glu Asn Thr Leu Leu Lys Thr Asp Phe His Ala Ser Ala Leu His Thr
 325 330 335
 Gly Lys Thr Leu Leu Ala Ala His Lys Ile Asn Phe Ser Tyr Gly Asn
 340 345 350
 Ser Pro Leu Trp Glu Val Pro Leu Cys Phe Gln Leu Lys Ser Gly Asp
 355 360 365
 Arg Ile Arg Ile Glu Gly Asp Asn Gly Ser Gly Lys Thr Thr Leu Leu
 370 375 380
 Lys Leu Val Thr Gly Asp Leu Leu Pro Thr Ser Gly Thr Leu Glu Arg
 385 390 395 400
 Ala Gly Phe Ser Tyr Val Tyr Leu Asn Gln Glu Tyr Ser Ile Ile Cys
 405 410 415
 Asn Gln Leu Thr Val Leu Gln Gln Ala Glu Ser Phe Asn Val Arg Ala
 420 425 430
 Leu Pro Glu His Glu Ile Lys Ile Arg Leu Asn Arg Phe Leu Phe Pro
 435 440 445
 Ala Thr Ser Trp Asp Gln Pro Cys Ile Gln Leu Ser Gly Gly Glu Lys
 450 455 460
 Met Arg Leu Ala Phe Cys Cys Leu Met Ile Ser Asn Asn Thr Pro Asp
 465 470 475 480
 Leu Phe Ile Leu Asp Glu Pro Thr Asn Asn Leu Asp Ile Gln Ser Ile
 485 490 495
 Glu Ile Ile Thr Ala Thr Val Arg Asn Tyr Thr Gly Ser Val Leu Leu
 500 505 510
 Val Ser His Asp Glu Tyr Phe Ala Lys Glu Thr Gly Ile Arg Lys Ser
 515 520 525
 Ile Phe Leu
 530

<210> 9108
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 9108

Leu	Met	Ala	Gly	Leu	Pro	Glu	Leu	Gln	Lys	Ser	Leu	Ser	Leu	Glu	Asp
1				5					10					15	
Thr	Trp	Lys	Glu	Tyr	Lys	Arg	Glu	Arg	Arg	Ile	Glu	Leu	Val	Ser	Glu
			20					25					30		
Gly	Asp	Arg	Tyr	Trp	Ser	Val	Leu	Arg	Trp	Gly	Lys	Ala	Asp	Gly	Leu
		35					40					45			
Glu	Val	Val	Pro	Glu	Leu	Ile	Val	Glu	Gln	Lys	Phe	Met	Lys	Ile	Ala
	50					55					60				
Pro	Asp	Gly	Lys	Ser	Phe	Glu	Ile	Leu	Pro	Leu	Pro	Ile	Tyr	Gln	Ser
65					70					75					80
Asp	Asn	Glu	Arg	Thr	Phe	Thr	Lys	Lys	His	Tyr	Leu	Phe	Pro	Val	Pro
				85					90					95	
Gln	Gly	Gln	Arg	Asp	Leu	Asn	Pro	Asn	Leu	Asp	Gln	Asn	Glu	Gly	Trp
			100					105					110		

<210> 9109
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9109

Gly	Leu	Phe	Ile	Val	Leu	Leu	Leu	Leu	Ile	Ser	Leu	Asn	Asn	Ile	Ile
1				5					10					15	
Thr	Asp	Glu	Gly	Lys	Tyr	Ser	Gln	Ile	Ser	Ser	Phe	Ile	Ile	Ser	Ile
			20					25					30		
Ser	Asn	Pro	Asn	Asn	Leu	Asn	Arg	Tyr	Ser	Tyr	Phe	Thr	Lys	Ser	Val
		35					40					45			
Ile	Phe	Ile	Val	His	Ser	Leu	Phe	Val	Pro	Ser	Ala	Ala	Val	Thr	
	50					55					60				

<210> 9110
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 9110

Ile	Asp	Gly	Phe	Phe	Ser	Pro	Leu	Val	Lys	Thr	Tyr	Thr	Asp	Val	Asn
1				5					10					15	
Gly	Asp	Gly	Lys	Ile	Asp	Gly	Glu	Asp	Gln	Val	Arg	Ile	Gly	Lys	Pro
			20					25					30		
Thr	Met	Pro	His	Phe	Thr	Tyr	Ala	Phe	Asp	Phe	Ser	Leu	Gly	Tyr	Glu
		35					40					45			
Gly	Phe	Thr	Leu	Ser	Gly	Leu	Leu	Tyr	Gly	Thr	Gly	Glu	Arg	Tyr	Met
	50					55					60				
Thr	Phe	Gly	Asn	Arg	Tyr	Gln	Ser	Gly	Glu	Gly	Lys	Tyr	Leu	Tyr	Tyr
65					70					75					80
Glu	Asn	Gln	Leu	Asn	Tyr	Trp	Arg	Pro	Asp	Asn	Thr	Gly	Ala	Asp	Phe
				85					90					95	
Pro	Arg	Ile	Ser	Ile	Ser	Ser	Gly	Val	Asn	Gly	Asn	Asn	Asn	Lys	Ala
			100					105					110		
Gly	Ser	Thr	Phe	Trp	Met	Arg	Asn	Ala	Ser	Tyr	Leu	Arg	Leu	Lys	Asp
		115					120					125			
Leu	Gln	Leu	Ser	Tyr	Asp	Phe	Lys	Tyr	Lys	Tyr	Leu	Lys	Lys	Cys	Asp

130		135		140											
Trp	Leu	Gln	Thr	Cys	Arg	Val	Asn	Leu	Ser	Gly	Ser	Asn	Leu	Phe	Thr
145				150						155					160
Ile	Ser	Gly	Val	Ser	Lys	Phe	Phe	Asp	Pro	Glu	Thr	Ser	Ser	Thr	Ser
				165						170					175
Gly	Asp	Gly	Tyr	Pro	Val	Gln	Arg	Val	Tyr	Ser	Ile	Gly	Val	Thr	Ile
			180					185					190		
Gly	Phe														

<210> 9111

<211> 160

<212> PRT

<213> B.fragilis

<400> 9111

Leu	Leu	Lys	Leu	His	Ile	Met	Ile	Lys	Leu	Tyr	Leu	Lys	Gln	Ser	Trp
1			5						10					15	
Met	Leu	Ile	Arg	Gln	Asn	Lys	Leu	Phe	Ser	Ser	Leu	Tyr	Val	Leu	Gly
			20					25					30		
Thr	Gly	Leu	Ala	Ile	Ala	Met	Thr	Met	Ile	Ile	Ala	Ile	Val	Tyr	Tyr
		35					40					45			
Ile	Lys	Ile	Ala	Pro	Ile	Tyr	Pro	Glu	Val	Asn	Arg	Ser	Leu	Thr	Met
	50				55					60					
Arg	Met	Lys	Gly	Val	Ser	Ala	Met	His	Val	Lys	Gly	Gly	Gly	Asn	Ser
65					70				75					80	
Tyr	Ser	Cys	Ser	Tyr	Glu	Met	Leu	Lys	Asp	Trp	Phe	Tyr	Pro	Leu	Gln
			85					90					95		
Ser	Ala	Glu	Leu	Val	Thr	Ala	Val	Asn	Glu	His	Phe	Leu	Thr	Arg	Lys
			100					105					110		
Gly	Ser	Tyr	Ile	Gln	Pro	Ala	Gly	Gly	Gly	Glu	Gln	Ile	Pro	Ala	Leu
		115					120					125			
Val	Lys	Tyr	Thr	Asp	Pro	Asn	Phe	Phe	Arg	Leu	Phe	Glu	Cys	Glu	Leu
	130					135				140					
Leu	Asp	Gly	Ser	Ser	Pro	Arg	Gly	Trp	Lys	Asp	Pro	Arg	Gly	Cys	Tyr
145				150						155					160

<210> 9112

<211> 155

<212> PRT

<213> B.fragilis

<400> 9112

Lys	Val	Leu	Leu	Lys	Lys	Lys	Cys	Thr	Ala	Ser	Ser	Asn	Pro	Ala	Val
1			5						10					15	
Lys	Thr	Ile	Trp	Met	Leu	Pro	Ile	Asp	Ala	Pro	Trp	Pro	Met	Gly	Gly
			20					25					30		
Glu	Ile	Asp	Ile	Met	Glu	Arg	Leu	Asn	His	Asp	Thr	Ile	Ala	Tyr	Gln
		35					40					45			
Thr	Ile	His	Thr	Asn	Tyr	Thr	Tyr	Asn	Leu	Gly	Ile	Lys	Asp	Asn	Pro
	50				55					60					
Leu	Ser	His	Ser	Val	Gly	Ala	Ile	Asn	Pro	Asp	Asp	Tyr	Asn	Val	Tyr
65					70				75					80	
Ser	Val	Glu	Met	Tyr	Pro	Asp	Ser	Ile	Ala	Phe	Tyr	Ile	Asn	Asp	Thr
			85					90					95		
His	Thr	Phe	Thr	Tyr	Pro	Arg	Ile	Glu	Thr	Asp	Lys	Glu	Gly	Gln	Phe
			100					105					110		
Pro	Phe	Asp	Gln	Pro	Phe	Tyr	Leu	Leu	Ile	Asp	Met	Gln	Leu	Gly	Gly
		115					120					125			


```

                245                250                255
Asn Val His Ile Arg Arg Asn Ile Ala Gly Leu Leu Asp Phe Asp Asn
                260                265                270
Leu Leu Gly Arg Leu Val Val Thr Leu Arg Asp His Arg Thr Asp Lys
                275                280                285
Arg His Arg Thr Leu Leu Thr Arg Gly Arg His Ser Gln Pro Val His
                290                295                300
Gln Leu Gln Phe Met Leu Cys Thr Val Gly Arg Gln Val Met Asp Gly
305                310                315                320
Leu Ser Leu Leu Tyr Arg Leu Val Gln Ile Ala His Asn Val Gly Arg
                325                330                335
Arg His Gly Asp Val His Ser His Pro Leu Thr Leu Phe Leu Gln Cys
                340                345                350
Gly Leu Ser Pro His Pro Tyr Asp Met Ile Asp Gly Gln Phe Ile Thr
                355                360                365
Glu Tyr Asn Phe Leu Ile Phe Ile Asn Val Asp Tyr Ser Arg Lys Pro
                370                375                380
Gly Lys Arg Lys Ala Glu Val Val Glu Lys Gly Arg Ile Leu Thr Ile
385                390                395                400
Ala Glu Arg Ile Val Leu Val Val Gln Ser Thr Leu Val Val Ser Gln
                405                410                415
Lys Gln Gln Tyr Ser Gly Ala
                420

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<210> 9115
 <211> 66
 <212> PRT
 <213> B.fragilis

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<400> 9115
Ala Leu Ser Ala Ser Asn Trp Gly Thr Trp Thr Ile Thr Phe Phe Ser
1                5                10                15
Val Met Ser Val Glu Val Val Leu Leu Pro Phe Val Pro Gln Glu Lys
                20                25                30
Ala Glu Asn Arg Met Lys Ala Asp Ser Met Asn Ile Glu Phe Leu Phe
                35                40                45
Ile Ile Met Leu Leu Glu Phe Lys Ala Ser Lys Leu Met Ile Phe Thr
                50                55                60
Val Gly
65

```

<210> 9116
 <211> 70
 <212> PRT
 <213> B.fragilis

```

<400> 9116
Tyr Lys Glu Ala Ser Lys Asn Gln Arg Gln Gly Glu Tyr Ile His Leu
1                5                10                15
Ile Ala Tyr Tyr Thr Phe Arg Arg His Ser Asp Thr Ile His Pro Asn
                20                25                30
Leu Leu Thr Arg Thr Lys Thr Gln Ile Ile Lys Gln Glu Glu Asn
                35                40                45
Ala Tyr Lys Thr His Ile Thr Cys Asn Lys Met Gln His Arg Pro Lys
                50                55                60
Ile Ser Asn Lys Tyr Ala
65                70

```

<210> 9117

<211> 262
 <212> PRT
 <213> B.fragilis

<400> 9117

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Met Lys Thr Ala Ile Lys Leu Ile Leu Ile Tyr Leu Gly Ile Gln Leu
1           5           10           15
Ile Cys Gly Gly Leu Ile Gly Ile Pro Phe Thr Ile Ile Ala Arg Met
           20           25           30
Asn Gly Gly Ser Val Asp Ala Thr Arg Val Ser Glu Leu Thr Leu Ala
           35           40           45
Pro Ser Met Leu Leu Ser Met Ala Val Met Phe Phe Tyr Leu Trp Lys
           50           55           60
Ala His Tyr Ile Pro Lys Asp Lys Thr Ser Trp Ser Phe Ile Ser Phe
65           70           75           80
Pro Phe Leu Ile Ile Thr Phe Leu Ile Gly Leu Ser Met Thr Val Leu
           85           90           95
Met Asp Met Leu Thr Ala Val Leu Ser Trp Val Pro Asp Ile Leu Glu
           100          105          110
Gln Gln Phe Asp Ala Leu Gln Ser Gly Trp Leu Gly Ile Val Ala Ile
           115          120          125
Thr Leu Leu Gly Pro Ile Leu Glu Glu Leu Leu Phe Arg Gly Gly Ala
           130          135          140
Thr Lys Ala Leu Leu Glu Arg Tyr Ser Pro Arg Lys Ala Ile Phe Leu
145          150          155          160
Ser Ala Leu Leu Phe Gly Val Phe His Leu Asn Pro Ala Gln Ile Val
           165          170          175
Ala Ala Phe Phe Gly Gly Leu Leu Leu Ala Trp Val Tyr Tyr Arg Thr
           180          185          190
Arg Ser Leu Ile Pro Cys Ile Leu Ile His Ile Val Asn Asn Ser Ile
           195          200          205
Ser Val Met Leu Ser Leu Thr Tyr Pro Asp Ala Asp Thr Ile Arg Asp
           210          215          220
Val Thr Gly Thr Thr Pro Tyr Tyr Leu Leu Ile Ala Val Ala Ala Met
225          230          235          240
Val Phe Val Gly Cys Phe Leu Arg Ile Lys Gln Val Thr Val Pro Gly
           245          250          255
Thr Trp Arg Lys Asp Glu
           260

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<210> 9118
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 9118

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Arg Asn His Gln His Gln Pro Gln Gln Pro Gln Ser Ala Gly Ala Ala
1           5           10           15
His Glu Pro Arg Leu His Gly Asp Gly Arg Gly Thr Tyr Glu Glu Gln
           20           25           30
Gly Gln Pro Ile Glu Arg Ile Glu Arg Gly His Asp Val Pro Gln Ala
           35           40           45
Glu Asp Gly Arg Arg Thr Arg Leu His Arg Arg Arg Glu Ala Thr Pro
           50           55           60
Glu Tyr Ile Asp Asp His His Ala Gly His His Arg Pro Ala Thr Pro
65           70           75           80
Leu Leu Pro Arg Arg Arg Arg Val Ile Ala Pro Pro Asp Asp Ser Glu
           85           90           95
Gly Arg Gly Gly Thr His Arg Ala Gly His Leu Asp His Leu Thr Arg

```

	100		105		110									
Gln	Gln	Gln	Ile	Arg	Ala	Asn	Glu	Leu	Arg	His	Leu	Ser	Pro	Glu
	115		120		125									
Val	Leu	Leu	Gln	Arg	Arg	Ile	His	His	Arg	Arg	Arg			
	130		135		140									

<210> 9119
 <211> 217
 <212> PRT
 <213> B.fragilis

<400> 9119
 Ile Ile Ser His Asn Met Lys Arg Arg Leu Asn Ile Leu Cys Leu Leu
 1 5 10 15
 Val Phe Leu Val Phe Cys Tyr Ser Val Phe Asn Met Gly Arg Asp Phe
 20 25 30
 Gly His Gly Phe Ser Glu Gly Met Lys Ile Ser His Ser Gly Asn Gln
 35 40 45
 Ser Val Glu Gln Ala Ile Asn Phe Arg Ile Ala Thr Leu Met Pro Lys
 50 55 60
 Asp Phe Ser Ser Phe Lys Asp Ser Val Tyr Asn Glu Lys Thr Gly Ser
 65 70 75 80
 Tyr Val Pro Val Ala Tyr Thr Gln Met Val Thr Asn Val Lys Val Asp
 85 90 95
 Arg Ser Thr Trp Met Met Val Ala Gln Val Ile Ser Gly Leu Leu Ala
 100 105 110
 Val Phe Ala Ile Ile Ala Ser Thr Val Leu Phe Ile Gln Leu Ile Val
 115 120 125
 Ala Ile Asn Lys Ser Asp Ile Phe Asn Trp Lys Asn Val Arg Arg Leu
 130 135 140
 Arg Trp Leu Gly Val Ala Leu Leu Leu Asn Phe Ile Ser Glu Ala Val
 145 150 155 160
 Pro Ala Leu Met Asn Asp Tyr Glu Leu Ser Ser Val Phe Ser Leu Ser
 165 170 175
 Gly Tyr Ser Met Glu Thr Ser Ile Asp Ser Val Met Leu Val Ile Leu
 180 185 190
 Gly Leu Val Ser Leu Ile Val Gly Glu Val Phe Ala Ile Gly Leu Lys
 195 200 205
 Met Lys Glu Glu Gln Asp Leu Thr Ile
 210 215

<210> 9120
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 9120
 Met Asn Leu Gln Phe Pro Pro Phe Leu His Glu Gly Asp Lys Val Ala
 1 5 10 15
 Ile Val Ser Pro Ser Ser Lys Ile Asp Ser Ile Phe Leu Lys Gly Ala
 20 25 30
 Lys Thr Arg Leu Ser Ser Trp Gly Leu Thr Pro Val Met Gly Asp His
 35 40 45
 Val Arg Ser Ser Trp Gly Ser Tyr Ala Gly Ala Thr His Gln Arg Leu
 50 55 60
 Lys Asp Phe Gln Val Ala Met Asp Asp Glu Glu Ile Lys Ala Ile Leu
 65 70 75 80
 Cys Ser Arg Gly Gly Tyr Gly Ala Val His Leu Leu Asp Lys Leu Asp
 85 90 95

```

Phe Thr Arg Phe Arg Asn His Pro Lys Trp Leu Ile Gly Phe Ser Asp
100 105 110
Ile Thr Ala Leu His Asn Leu Phe Gln Tyr Asn Gly Phe Ala Ser Leu
115 120 125
His Ala Pro Met Ala Arg His Leu Ala Val Thr Gly Glu Glu Asp Pro
130 135 140
Cys Ser Leu Tyr Leu Arg Asp Ile Leu Phe Gly Lys Leu Pro Gly Tyr
145 150 155 160
Lys Cys His Arg His Lys Leu Asn His Leu Gly Gln Ala Lys Gly Ile
165 170 175
Leu Arg Gly Gly Asn Met Ala Val Phe His Gly Leu Arg Gly Thr Pro
180 185 190
Tyr Asp Ile Pro Pro Glu Gly Thr Ile Leu Phe Ile Glu Asp Val Gly
195 200 205
Glu Arg Pro Tyr Ala Ile Glu Arg Met Met Tyr Asn Leu Lys Leu Gly
210 215 220
Gly Val Leu Glu Lys Leu Ser Gly Leu Ile Ile Gly Gln Phe Thr Glu
225 230 235 240
Tyr Lys Glu Asp Tyr Ser Leu Lys Lys Asp Leu Tyr Ser Thr Leu Asp
245 250 255
Ala Leu Val Lys Glu Tyr Asp Phe Pro Ile Cys Tyr Asp Phe Pro Val
260 265 270
Gly His Val Thr Glu Asn Leu Pro Leu Ile Asn Gly Ala Glu Val Glu
275 280 285
Phe Val Ser Gly Lys Lys Gly Val Glu Leu Leu Ile Asn Pro Pro Ile
290 295 300

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<210> 9121
<211> 64
<212> PRT
<213> B.fragilis

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<400> 9121
Phe Asn Pro His Ser Ser Phe Pro Arg Asn Asn Ser Thr Pro Glu Pro
1 5 10 15
Asn Val Phe Phe Ser Arg Ala Leu Arg Cys Val Tyr Val Ser Leu Leu
20 25 30
Asn Ile Met Val Tyr Ile Lys Val Met Met Ala Lys Ile Gly Thr Lys
35 40 45
Asp Glu Leu Thr Lys Glu Ile Lys Gln Ile Arg Phe Thr Ala Glu Gln
50 55 60

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<210> 9122
<211> 610
<212> PRT
<213> B.fragilis

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<400> 9122
Ser Gly Phe Lys His Ile Leu Ser Arg Tyr Phe Phe Arg Gly Glu Thr
1 5 10 15
Leu Ser Asp Gly Lys Leu Gln Gln His Phe Ser Phe Gly Ile Glu Tyr
20 25 30
Phe His Leu Lys Tyr Val Leu Leu Phe Asn His His Tyr Arg Cys
35 40 45
Thr Phe His Ala Ile Thr Ala Thr Asp Asn His Arg Glu Val Ile Ala
50 55 60
Lys Ala Ala Phe Gly Met Ile Gly Ile Phe Met Cys Met Arg Val Lys
65 70 75 80
Ala Asp Ile Glu Arg Cys Phe Leu Gln Lys Phe Thr Pro Lys Pro Gly

```

				85					90					95			
Thr	Gln	Ile	Leu	Val	Val	Val	Ser	Val	Lys	Arg	Asn	Val	Met	Asn	Gln		
			100					105					110				
Asn	Pro	Leu	Ser	Gly	Phe	Leu	Lys	Phe	Phe	Gly	Ser	Glu	Leu	Thr	Leu		
		115					120					125					
Gln	Lys	Ser	Tyr	Leu	Val	Ile	Thr	Gln	Leu	Arg	Lys	Val	Val	Glu	Ser		
	130					135					140						
Val	Val	Tyr	Pro	Met	Ile	Ile	Arg	Leu	Ile	Phe	Thr	Ala	Ile	Glu	His		
145				150						155					160		
Tyr	Asp	Thr	Gly	Ile	Ser	Pro	Val	Glu	Gly	Ala	Val	Ser	Leu	Ile	Ala		
			165						170					175			
Tyr	Ile	Ile	Glu	Gln	Ala	Val	Gln	Ala	Tyr	Arg	Ile	Gly	Ile	Pro	Asp		
			180					185					190				
Leu	Val	Ile	Thr	Ala	His	Lys	Glu	Asp	Arg	Tyr	Ala	Ile	Thr	Leu	His		
		195					200					205					
Ala	Phe	Gly	Gln	Phe	Ala	Asp	Lys	Gly	Cys	Cys	Leu	Ile	Val	Ile	Gly		
	210					215					220						
Gly	Val	Val	Tyr	Thr	Ile	Ala	Val	Glu	His	Tyr	Lys	Ile	Ile	Val	Asn		
225				230						235					240		
Pro	Leu	Tyr	Leu	Phe	Ala	Gln	Cys	Leu	Lys	Arg	Leu	Arg	Leu	Phe	Met		
			245							250				255			
Gln	Val	Val	Glu	His	His	Gly	Arg	Lys	Thr	Val	Ile	Thr	Gly	Cys	Gly		
			260					265					270				
Gln	Arg	Glu	Leu	Pro	Glu	Phe	Cys	Thr	Gly	Cys	Ile	Ala	Lys	His	Leu		
		275					280					285					
Phe	Val	Gly	Leu	Val	Lys	Gln	Asp	Leu	Leu	Arg	Thr	Gly	Thr	Ile	Ile		
	290					295					300						
Ile	Phe	Leu	Ser	Gly	Leu	Gln	Thr	Ile	Glu	Ala	Asn	Leu	Val	Lys	Ser		
305				310						315					320		
Ile	Ala	Thr	Asn	Asn	Leu	Thr	Ile	Gln	Lys	Gly	Thr	Cys	Ala	Leu	Gln		
			325						330					335			
Ile	Gly	Arg	Val	Arg	Ala	Val	Leu	His	Pro	Ala	Ile	Gly	Arg	His	Val		
			340					345					350				
Gly	Leu	Pro	His	His	Arg	Asp	Ser	Thr	Ser	Tyr	Gly	Ile	Leu	Lys	Ile		
		355					360					365					
Gly	Phe	Gly	Thr	Ala	Asn	Pro	Ile	Leu	Gly	Tyr	Arg	His	Pro	Tyr	Phe		
	370					375					380						
Tyr	His	Lys	Arg	Thr	Met	Ile	Gly	Arg	Gln	Arg	Leu	Ile	Asp	His	Arg		
385				390						395					400		
Gly	Arg	Val	Asp	Asn	Lys	Ser	Arg	Arg	Phe	Leu	Phe	Gln	Ser	Asn	Gln		
			405						410					415			
Val	Val	Glu	Arg	Leu	Leu	Arg	Phe	Gly	Ser	Arg	Ile	Ser	Glu	Leu	Leu		
		420						425					430				
Arg	Val	Gly	Lys	Tyr	Leu	Glu	Cys	Thr	Leu	Gln	Ile	Phe	Asp	Lys	Ala		
		435					440					445					

Ser His Ala Val Gln Phe Leu Asp Gly Asn Asp Val Arg Thr Gly Val
 565 570 575
 Val Asp His Ile Gly Tyr Thr Leu Ile Ala Tyr Thr Val His Ala
 580 585 590
 Ile Gly Val Thr Asp Val Val Gly His Gln Ala Gln His Ile Phe Ser
 595 600 605
 Leu Gly
 610

<210> 9123

<211> 646

<212> PRT

<213> B.fragilis

<400> 9123

Thr Met Arg Lys Leu Lys Asn Val Leu Arg Ala Ser Ser Cys Cys Ala
 1 5 10 15
 Phe Ser Ile Leu Met Cys Leu Pro Ala Ala Gly Gln Asn Ala Trp Ser
 20 25 30
 Glu Ala Asp Cys Val Thr Leu Leu Asp Ser Thr Ser Val Thr Val Gln
 35 40 45
 Pro Asn Gly Ser Gly Ser Phe Ala Val Tyr Lys Ser Phe Lys Val Gln
 50 55 60
 Thr Pro Lys Gly Ala Val Asn Asn His Val Ile Lys Tyr Asp Tyr Asp
 65 70 75 80
 Pro Leu Thr Ala Phe Ala Arg Phe Lys Gln Val Thr Val Gln Arg Ala
 85 90 95
 Asn Gly Glu Thr Met Gln Val Asp Val Thr Lys Thr Cys Asp Tyr Ala
 100 105 110
 Ala Pro Ala Arg Ala Ile Tyr Trp Gly Ala Arg Gln Ile Met Leu Glu
 115 120 125
 Leu Gly Arg Leu Glu Pro Gly Asp Val Val Ser Tyr Glu Ile Ser Lys
 130 135 140
 Lys Gly Phe Thr Tyr Ala Leu Leu Ala Gly Ala Glu Asp Asp Asp Ala
 145 150 155 160
 Arg Phe Ile Pro Pro Met Arg Gly Gln Phe Tyr Asp Ile Val Pro Phe
 165 170 175
 Trp Val Asn Glu Pro Thr Arg Arg Lys Val Tyr Val Val Ser Met Pro
 180 185 190
 Met Glu Lys Glu Leu Gln Phe Gln Phe Tyr Asn Gly Val Cys Thr Ser
 195 200 205
 Ser Met Arg Tyr Glu Asp Gly Arg Lys Val Tyr Thr Phe Ala Val Asp
 210 215 220
 Glu Val Leu Pro Phe Arg Lys Glu Pro Asn Met Val Asp Leu Phe Asp
 225 230 235 240
 Glu Ala Pro Lys Leu Met Met Ser Ser Thr Pro Lys Trp Glu Asp Lys
 245 250 255
 Ser Leu Trp Phe His Asp Leu Asn Glu Ala Tyr Gly Ser Phe Ala Ala
 260 265 270
 Leu Pro Glu Ala Gln Lys Lys Val Asp Glu Leu Ile Lys Gly Lys Lys
 275 280 285
 Thr Glu Met Glu Arg Ile Ala Val Leu Thr His Trp Val Ala Asp Asn
 290 295 300
 Ile Arg Tyr Ala Gly Ile Thr Met Gly Glu Gly Glu Phe Thr Leu
 305 310 315 320
 His Asn Thr Lys Met Asn Tyr Thr Asp Arg Cys Gly Val Cys Lys Asp
 325 330 335
 Ile Ala Gly Thr Leu Ile Ser Phe Leu Arg Met Ala Gly Phe Glu Ala
 340 345 350

```

Tyr Pro Ala Met Thr Met Ala Gly Ser Arg Ile Glu Ser Ile Pro Ala
    355                      360                      365
Asp His Phe Asn His Cys Val Ala Val Val Lys Leu Ala Asn Gly Thr
    370                      375                      380
Tyr Met Pro Leu Asp Pro Thr Trp Val Pro Phe Cys Arg Glu Leu Trp
385                      390                      395                      400
Ser Ser Ala Glu Gln Gln Gln Asn Tyr Leu Pro Gly Ile Pro Gly Gly
    405                      410                      415
Ser Asp Leu Cys Leu Thr Pro Val Ser Ala Pro Glu Asn His Tyr Val
    420                      425                      430
Arg Ile Thr Ala Asp Asn Lys Ile Asp Ala Lys Gly Thr Leu Lys Gly
    435                      440                      445
Ser Phe Thr Ile Thr Ala Glu Gly Gln Ser Asp Ser Ser Ile Arg Arg
    450                      455                      460
Ile Phe Thr Gln Gly Trp Gln Thr Glu Trp Gln Ser Thr Met Glu Ser
465                      470                      475                      480
Gln Leu Leu Asn Val Ser Pro Lys Ala Arg Met Leu Gly Val Asp Tyr
    485                      490                      495
Gly Lys Ala Pro Lys Asp Tyr Gln Ala Gly Pro Ile Arg Ile Thr Phe
    500                      505                      510
Arg Tyr Glu Ile Pro Asp Tyr Ala Leu Val Gly Asp Arg Glu Leu Leu
    515                      520                      525
Leu Lys Pro Met Val Met Asn Asn Leu Tyr Thr Ser Val Leu Ser Phe
    530                      535                      540
Leu Arg Ile Asp Thr Gly Leu Glu Thr Arg Gln Tyr Gly Phe Arg Asp
545                      550                      555                      560
Ala Cys Ser Arg Leu Val Glu Leu Asp Glu Thr Ile Ala Leu Pro Arg
    565                      570                      575
Gly Tyr Arg Leu Ala Gly Glu Pro Arg Ser Glu Gln Lys Ala Ala Pro
    580                      585                      590
Ala Ala Asp Phe Glu Gly Ser Leu Gln Gln Val Gly Asn Lys Leu Val
    595                      600                      605
Leu Lys Gln Lys Leu Ala Leu Lys Lys Arg Ile Tyr Arg Ala Ala Asp
    610                      615                      620
Trp Glu Gly Phe Arg Ala Ala Val Asn Ala Tyr Lys Ser Phe Ala Asp
625                      630                      635                      640
Tyr Leu Ile Val Lys Leu
    645

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<210> 9124

<211> 188

<212> PRT

<213> B.fragilis

<400> 9124

```

Ser Val Val Lys Leu Ile His Ser Ile Ser Leu Ser Ile Asn Leu Lys
1      5      10      15
Ser Arg Ile Asn Met Thr Pro Ile Val Ser Ile Ile Met Gly Ser Thr
    20      25      30
Ser Asp Leu Pro Val Met Glu Lys Ala Ala Gln Leu Leu Asn Asp Leu
    35      40      45
His Val Pro Phe Glu Met Asn Ala Leu Ser Ala His Arg Thr Pro Glu
    50      55      60
Ala Val Glu Glu Phe Ala Lys Asn Ala Arg Ser Arg Gly Ile Lys Val
    65      70      75      80
Ile Ile Ala Ala Ala Gly Met Ala Ala His Leu Pro Gly Val Ile Ala
    85      90      95
Ala Ser Thr Pro Leu Pro Val Ile Gly Val Pro Ile Lys Ser Ser Leu
    100     105     110

```


Asp Gly Met Asp Ala Leu Leu Ala Ile Val Gln Met Pro Pro Gly Ile
 115 120 125
 Pro Val Ala Thr Val Gly Ile Asn Gly Ala Leu Asn Ala Ala Ile Leu
 130 135 140
 Ala Val Gln Met Leu Ser Leu Glu Asp Lys Glu Leu Glu Ala Lys Phe
 145 150 155 160
 Ile Ala Tyr Lys Glu Gly Leu Lys Lys Lys Ile Val Lys Ala Asn Glu
 165 170 175
 Glu Leu Lys Glu Ile Lys Tyr Glu Phe Lys Thr Asn
 180 185

<210> 9125
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 9125
 Ser Tyr Lys Asn Met Ser Gly Leu Tyr Tyr Asn Leu Ala Leu Arg Asn
 1 5 10 15
 Ser Asp Leu Arg Asp Lys Asp Ser Glu Lys Leu Tyr Tyr Cys Val Leu
 20 25 30
 Lys Asn Arg Gly Val Leu Asp Gln Asp Thr Phe Val Asn Tyr Leu Ser
 35 40 45
 Gln Ile Thr Gly Ile Lys Glu Ala Ile Cys Leu Gly Val Leu Ser Lys
 50 55 60
 Leu Gly Ala Ala Val Ile Asn Tyr Leu Lys Asp Gly Gln Ser Val Asp
 65 70 75 80
 Ile Pro His Leu Gly Thr Phe Asn Leu Thr Ala Ser Ser Thr Gly Val
 85 90 95
 Lys Thr Leu Asp Glu Ala Lys Ala Ser Gln Ile Lys Ala Ile Asn Leu
 100 105 110
 Arg Phe Ser Ala Lys Glu Glu Thr Asp Leu Val Leu Ser Arg Cys Ala
 115 120 125
 Leu Thr Arg Ser Val Ser Leu Thr Asn Thr Asn Asp Val Ile Lys Glu
 130 135 140
 Lys Asp Pro Ser Gly Glu Ile Val Asp Asp Pro Thr Ala
 145 150 155

<210> 9126
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 9126
 Ala Phe Lys Asn Arg Ile Glu Met Lys Arg Lys Gly Ile Lys Asn Leu
 1 5 10 15
 Ile Phe Asp Phe Gly Gly Val Leu Ile Asn Leu Asp Arg Gln Arg Cys
 20 25 30
 Ile Glu Asn Phe Arg Lys Leu Gly Leu Glu Lys Val Asp Glu Leu Leu
 35 40 45
 Gly Met Tyr Ser Gln Gln Gly Ile Phe Met Gln His Glu Lys Gly Leu
 50 55 60
 Ile Ser Ser Ala Gln Phe Arg Asp Ser Ile Arg Gly Gln Ile Thr Gln
 65 70 75 80
 Glu Val Thr Asp Glu Gln Ile Asp Ala Ala Trp Asn Ser Phe Leu Val
 85 90 95
 Asp Ile Pro Arg Phe Lys Leu Asp Met Leu Leu Lys Leu Arg Glu Lys
 100 105 110
 Tyr Val Val Tyr Leu Leu Ser Asn Thr Asn Glu Ile His Trp Lys Trp

115	120	125
Ala Cys Glu His Ala Phe Pro Tyr Arg Gly Phe Arg Val Glu Asp Tyr		
130	135	140
Phe Glu Lys Met Tyr Leu Ser Tyr Glu Met Lys Met Val Lys Pro Ala		
145	150	155
Glu Glu Ile Phe Arg Gly Val Leu Asp Asp Ala Asn Leu Asp Pro Arg		
165	170	175
Glu Thr Phe Phe Ile Asp Asp Ser Glu Ala Asn Cys Gln Gly Ala Gln		
180	185	190
Ala Leu Gly Ile Ser Thr Tyr Thr Val Lys Pro Gly Glu Asp Trp Arg		
195	200	205
Pro Leu Phe Ala Glu Asn		
210		

<210> 9127

<211> 612

<212> PRT

<213> B.fragilis

<400> 9127

Gly Gly Thr Leu Met Arg Lys Leu Leu Leu Leu Phe Ser Ala Leu		
1	5	10
Phe Val Leu Ser Ala Gln Ala Glu Asp Val Leu Arg Leu Met Thr Tyr		15
20	25	30
Asn Val Arg Asn Ala Asn Gly Met Asp Gly Ile Cys Asn Tyr Gln Arg		
35	40	45
Val Ala Asn Val Ile Asn Asn Ala Arg Pro Asp Ile Val Ala Ile Gln		
50	55	60
Glu Leu Asp Ser Met Thr Ala Arg Ser Asn Arg Thr Asp Val Leu Lys		
65	70	75
Glu Leu Ala Glu Arg Thr Gln Leu His Pro Cys Phe Ala Pro Ala Ile		
85	90	95
Asp Tyr Asp Gly Gly Lys Tyr Gly Ile Gly Ile Leu Ser Lys Glu Thr		
100	105	110
Pro Leu Arg Val Gln Thr Phe Ala Leu Pro Gly Arg Glu Glu Ala Arg		
115	120	125
Thr Leu Leu Val Ala Glu Phe Pro Glu Tyr Val Phe Ala Cys Thr His		
130	135	140
Leu Ser Leu Thr Glu Glu Asp Arg Met Lys Ser Leu Glu Ile Leu Lys		
145	150	155
Ser Val Ala Ala Asn Thr Arg Lys Pro Phe Phe Leu Ala Gly Asp Phe		
165	170	175
Asn Ser Asp Ala Asp Ser Gly Phe Ile Lys Asp Leu Lys Ser Thr Phe		
180	185	190
Gln Ile Leu Ser Asn Pro Lys Gln Leu Thr Tyr Pro Ala Ser Glu Pro		
195	200	205
Lys Glu Thr Leu Asp Tyr Leu Ile Ala Leu Lys Gln Glu Thr Pro Thr		
210	215	220
Phe Val Val Asn Ser Ala Pro Val Ile Asp Glu Pro Leu Ala Ser Asp		
225	230	235
His Arg Pro Phe Val Val Glu Val Arg Met Ala Val Pro Glu Asn Arg		
245	250	255
Ile Cys Arg Thr Lys Pro Tyr Leu Gln Asn Pro Val Arg Gly Gly Ile		
260	265	270
Thr Val Met Trp Gln Thr Asn Val Pro Ala Tyr Cys Trp Val Glu Tyr		
275	280	285
Gly Thr Asp Pro Ser Asn Leu Lys Arg Ala Arg Thr Leu Leu Asp Gly		
290	295	300
Gln Val Val Cys Gly Asn Thr Leu His Lys Ile Arg Leu Asp Ser Leu		

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305          310          315          320
Gln Pro Gly Gln Lys Tyr Tyr Tyr Arg Thr Cys Ser Gln Glu Ile Leu
          325          330          335
Leu Tyr Gln Ala Tyr Lys Lys Val Phe Gly Asn Thr Ala Arg Thr Glu
          340          345          350
Leu Arg Glu Phe Thr Leu Pro Ala Ala Gly Asp Asp Ser Phe Thr Ala
          355          360          365
Val Val Phe Asn Asp Leu His Lys Gln Ser Lys Thr Phe Gln Ala Leu
          370          375          380
Cys Glu Gln Ile Lys Gly Ile Asp Tyr Asp Phe Val Val Phe Asn Gly
385          390          395          400
Asp Cys Val Asp Asp Pro Ala Asn His Asp Gln Ala Thr Ala Phe Ile
          405          410          415
Ser Glu Leu Thr Glu Gly Val Glu Gly Asp Arg Val Pro Val Phe Phe
          420          425          430
Met Arg Gly Asn His Glu Ile Arg Asn Ala Tyr Ser Val Gly Leu His
          435          440          445
Ser Leu Phe Asp Tyr Val Gly Asp Lys Thr Tyr Gly Ser Phe Asn Trp
          450          455          460
Gly Asp Thr Arg Ile Val Met Leu Asp Cys Gly Glu Asp Lys Pro Asp
465          470          475          480
Asp His Trp Val Tyr Tyr Gly Leu Asn Asp Phe Thr Lys Leu Arg Asn
          485          490          495
Asp Gln Val Gly Phe Leu Lys Arg Glu Leu Ala Ser Lys Glu Phe Lys
          500          505          510
Lys Ala Ala Lys Arg Ile Leu Ile His His Ile Pro Leu Tyr Gly Asn
          515          520          525
Asp Tyr Glu Asn Leu Cys Ser Gly Leu Trp Gly Lys Leu Leu Glu Lys
          530          535          540
Ala Pro Phe Asn Ile Ser Leu Asn Ala His Thr His Glu Tyr Ala Tyr
545          550          555          560
His Pro Lys Gly Ser Leu Gly Asn Asn Phe Pro Val Ile Ile Gly Gly
          565          570          575
Gly Tyr Ser Met Lys Ser Ala Thr Val Met Val Ile Glu Lys Lys Lys
          580          585          590
Asp Ile Leu Lys Val Lys Val Leu Asn Thr Lys Gly Glu Val Leu Leu
          595          600          605
Glu Leu Thr Val
          610

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<210> 9128

<211> 559

<212> PRT

<213> B.fragilis

<400> 9128

```

Arg Glu Met Lys Gln Met Leu Gln Ile Tyr Cys Lys Asn Asn Asn Ile
1          5          10          15
Ser Lys Glu Phe Pro Ile Gly Ser Ser Leu Leu Asp Ile Tyr Tyr Gly
          20          25          30
Phe Asn Leu Asn Phe Pro Tyr Gln Val Val Ser Ala Lys Val Asn Asn
          35          40          45
Arg Ser Glu Gly Leu Asn Phe Arg Val Tyr Asn Asn Lys Asp Val Glu
          50          55          60
Phe Leu Asp Val Arg Asp Ser Ser Gly Met Arg Thr Tyr Val Arg Ser
65          70          75          80
Leu Cys Phe Val Leu Tyr Lys Ala Val Ser Glu Leu Phe Pro Asn Gly
          85          90          95
Lys Leu Phe Val Glu His Pro Val Ser Lys Gly Tyr Phe Cys Asn Leu

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<211> 333
 <212> PRT
 <213> B.fragilis

<400> 9129

```

Asn Pro Val Lys Thr Gly Gly Arg Phe Leu Pro Arg Ile Lys Ile Asn
1      5      10      15
Arg Arg Asn Ser Met Gln Ile Ile Arg Asn Ile Pro Gly Val Leu Pro
      20      25      30
Glu Pro Cys Val Ala Thr Ile Gly Phe Phe Asp Gly Val His Met Gly
      35      40      45
His Arg Phe Leu Ile Glu Gln Val Arg Glu Leu Ala Ala Ala Arg Gly
      50      55      60
Leu Arg Ser Ala Leu Ile Thr Phe Pro Ile His Pro Arg Lys Val Met
      65      70      75      80
Asn Ala Asp Tyr Arg Pro Glu Leu Leu Thr Thr Ser Glu Glu Lys Leu
      85      90      95
Ala Leu Leu Glu Glu Thr Gly Val Asp Tyr Cys Phe Met Leu Asp Phe
      100     105     110
Thr Arg Glu Val Ser His Leu Thr Ala His Glu Phe Met Ser Asp Ile
      115     120     125
Leu Arg Asp Arg Tyr Arg Val Gln Ile Leu Val Ile Gly Tyr Asp His
      130     135     140
Arg Phe Gly His Asn Arg Ser Glu Gly Phe Glu Asp Tyr Cys Arg Tyr
      145     150     155     160
Gly Ser Glu Met Gly Ile Glu Val Ile Arg Ala Arg Ala Cys Val Cys
      165     170     175
Asp Asp Leu His Ile Ser Ser Ser Val Ile Arg Lys Met Leu His Gln
      180     185     190
Gly Glu Val Asp Arg Ala Ala Arg Cys Leu Gly Tyr Asp Tyr Phe Leu
      195     200     205
Asp Gly Thr Val Val Ser Gly Tyr Gln Val Gly Arg Lys Ile Gly Phe
      210     215     220
Pro Thr Ala Asn Leu Ser Val Asp Asp Pro Asp Lys Leu Val Pro Ala
      225     230     235     240
Asp Gly Val Tyr Ala Val His Val Thr Phe Asp Gly His Thr Tyr Asn
      245     250     255
Gly Met Leu Asn Ile Gly Thr Arg Pro Thr Ile Gly Asn Gly Pro Glu
      260     265     270
Arg Ser Ile Glu Val Asn Ile Leu His Phe His Ser Asp Ile Tyr Asp
      275     280     285
Lys Phe Ile Arg Leu Ser Phe Val Lys Tyr Leu Arg Pro Glu Leu Lys
      290     295     300
Phe Asp Gly Ile Glu Gly Leu Ile Ala Gln Leu His Gln Asp Ala Ala
      305     310     315     320
Asp Val Glu Ala Leu Leu Gly Lys Ile Gln Asn Val Asn
      325     330

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<210> 9130
 <211> 185
 <212> PRT
 <213> B.fragilis

<400> 9130

```

Ser Pro Gly Glu Asp Gln Met Phe Leu Asn Pro Val Asn Arg Glu Lys
1      5      10      15
Tyr Pro Ala Phe Val Leu Val Pro Gln Cys Pro Glu Lys Asp Tyr Trp
      20      25      30
Ala Tyr Thr Ser Arg Pro Ser Ser Phe Ile Pro Ser Glu Met Pro Val

```


260	265	270
Val Gly Leu Cys Thr Leu Val	Val Ile Leu Ile Ala Gly	Leu Ile Phe
275	280	285
Val Ala Ile Val Leu Leu Arg Phe	Ile Ala Gly Asn Arg Lys Leu Lys	
290	295	300
Lys Ser Val Gln Ile Ala Asn Glu His Asn Glu Leu Lys Thr Gln Phe		
305	310	315
Ile Gln Asn Ile Ser Ala Gln Met Glu Pro Thr Leu Asp Thr Leu Ala		
325	330	335
Ser Ser Ala Ala Glu Leu Ser Asp Lys Ala Pro Gln Gln Ala Gln Gln		
340	345	350
Met Gln Gly Gln Val Ala Ala Leu Lys Lys Phe Ser Asn Asp Ile Gln		
355	360	365
Glu Leu Ser Thr Leu Glu Asn Ser Leu Thr Glu Pro Tyr Glu Met Lys		
370	375	380
Glu Ile Asn Val Asn Thr Phe Cys Glu Ala Thr Met Asp Lys Val Lys		
385	390	395
Glu Phe Val Gln Pro Glu Val Ser Thr Val Val Asn Ala Ala Lys Leu		
405	410	415
Gln Ile Lys Thr Asn Pro Glu Gln Leu Glu Arg Ile Leu Ile His Leu		
420	425	430
Leu Lys Asn Ala Ala Glu Tyr Thr Glu Ser Gly Lys Ile Phe Leu Asp		
435	440	445
Phe Lys Lys Arg Gly Ala His Thr His Gln Phe Ile Ile Ser Asp Thr		
450	455	460
Gly Thr Gly Ile Pro Val Glu Lys Gln Glu Asn Leu Phe Lys Pro Phe		
465	470	475
Thr Glu Ile Lys Asp Leu Thr Glu Gly Asp Gly Leu Gly Leu Pro Ile		
485	490	495
Cys Ala Leu Ile Ala Thr Lys Met Asn Gly Ser Leu Thr Leu Asp Thr		
500	505	510
Ser Tyr Thr Lys Gly Ser Arg Phe Val Leu Glu Leu His Thr		
515	520	525

<210> 9132

<211> 562

<212> PRT

<213> B.fragilis

<400> 9132

Phe Asn Val Cys Ile Cys Met Thr Ala Lys Asn Asp Asp Tyr Phe His		
1	5	10
Leu Gly Leu Thr Asp Gln Glu Val Leu Gln Ser Arg Glu Lys Tyr Gly		
20	25	30
Ala Asn Leu Leu Thr Pro Pro Lys Arg Pro Ser Leu Leu Lys Leu Tyr		
35	40	45
Leu Glu Lys Phe Glu Asp Pro Val Val Arg Val Leu Leu Ile Ala Ala		
50	55	60
Val Phe Ser Leu Ile Ile Ser Val Ile Glu Asn Glu Tyr Ala Glu Thr		
65	70	75
Ile Gly Ile Ile Ala Ala Ile Leu Leu Ala Thr Gly Ile Gly Phe Tyr		
85	90	95
Phe Glu Tyr Asp Ala Asn Lys Lys Phe Asp Leu Leu Asn Ala Val Asn		
100	105	110
Glu Glu Thr Leu Val Lys Val Ile Arg Asn Gly Arg Ile Gln Glu Ile		
115	120	125
Pro Arg Lys Asp Val Val Val Gly Asp Ile Val Val Leu Glu Thr Gly		
130	135	140
Glu Glu Ile Pro Ala Asp Gly Glu Leu Ile Glu Ala Ile Ser Leu Gln		

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145          150          155          160
Val Asn Glu Ser Asn Leu Thr Gly Glu Pro Val Ile Asn Lys Thr Ile
          165          170          175
Ile Glu Ala Asp Phe Asp Glu Glu Ala Thr Tyr Ala Ser Asn Leu Val
          180          185          190
Met Arg Gly Thr Thr Val Val Asp Gly His Gly Ser Met Lys Val Leu
          195          200          205
Arg Val Gly Asp Ala Thr Glu Ile Gly Lys Val Ala Arg Gln Ser Thr
          210          215          220
Glu Gln Thr Thr Glu Pro Thr Pro Leu Asn Ile Gln Leu Thr Lys Leu
225          230          235          240
Ala Asn Leu Ile Gly Lys Ile Gly Phe Thr Val Ala Gly Leu Ala Phe
          245          250          255
Leu Ile Phe Phe Ile Lys Asp Val Val Leu Tyr Phe Asp Phe Gly Ala
          260          265          270
Leu Asn Gly Trp His Asp Trp Leu Pro Val Leu Glu Arg Thr Leu Lys
          275          280          285
Tyr Phe Met Met Ala Val Thr Leu Ile Val Val Ala Val Pro Glu Gly
290          295          300
Leu Pro Met Ser Val Thr Leu Ser Leu Ala Leu Asn Met Arg Arg Met
305          310          315          320
Leu Ala Thr Asn Asn Leu Val Arg Lys Met His Ala Cys Glu Thr Met
          325          330          335
Gly Ala Ile Thr Val Ile Cys Thr Asp Lys Thr Gly Thr Leu Thr Gln
          340          345          350
Asn Leu Met Gln Val His Glu Pro Asn Phe Tyr Gly Leu Lys Asp Gly
          355          360          365
Gly Lys Leu Thr Asp Asp Asp Ile Ser Arg Leu Ile Ala Glu Gly Ile
370          375          380
Ser Ala Asn Ser Thr Ala Phe Leu Glu Glu Thr Gly Lys Gly Glu Lys
385          390          395          400
Pro Lys Gly Val Gly Asn Pro Thr Glu Val Ala Leu Leu Leu Trp Leu
          405          410          415
Asn Ser Gln Lys Arg Asn Tyr Leu Glu Leu Arg Glu Gly Ala Arg Val
          420          425          430
Leu Asp Gln Leu Thr Phe Ser Thr Glu Arg Lys Phe Met Ala Thr Leu
          435          440          445
Val Lys Ser Pro Leu Ile Gly Lys Lys Val Leu Tyr Ile Lys Gly Ala
450          455          460
Pro Glu Ile Val Leu Gly Lys Cys Lys Glu Val Ile Leu Asp Gly Arg
465          470          475          480
Arg Val Asp Ser Val Glu Tyr Arg Ser Thr Val Glu Ala Gln Leu Leu
          485          490          495
Gly Tyr Gln Asn Met Ala Met Arg Thr Leu Gly Phe Ala Phe Arg Leu
500          505          510
Val Glu Asp Asn Glu Pro Asp Asp Cys Val Ala Leu Val Ser Glu Asn
515          520          525
Asn Leu Asn Phe Leu Gly Val Val Ala Ile Ser Arg Pro Ile Arg Ser
530          535          540
Asp Val Pro Ala Ala Val Ala Lys Cys His Arg Glu Val Leu Val Ser
545          550          555          560
Arg Leu

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<210> 9133

<211> 575

<212> PRT

<213> B.fragilis

<400> 9133

Thr 1	Met	Met	Trp	Gln 5	Ile	Val	Leu	Ser	Leu 10	Val	Cys	Val	Ala	Phe	Leu 15
Gly	Ala	Ile	Leu	Trp 20	Glu	Lys	Arg	Gln	Gly	Lys	Leu	Met	Gln	Ser	Ala
Ser	Asp	Arg	Lys	Leu 35	Glu	Asn	Val	Asn	Cys	Leu	Phe	Asp	Ala	Ile	Leu
Thr	His	Ile	His	Ala 50	Tyr	Val	Leu	Val	Ile	Asp	Ser	Asp	Phe	Lys	Val
Leu 65	Lys	Thr	Asn	Tyr 70	Tyr	Asp	Leu	Thr	His	Leu	Ser	Pro	Asp	Gly	Lys
Glu	Lys	Arg	Val	Gly 85	Asp	Leu	Leu	Gln	Cys	Arg	Asn	Ala	Leu	Ser	Ala
Lys	Gly	Gly	Cys	Gly 100	Thr	His	Ala	Phe	Cys	Gln	Glu	Cys	Pro	Val	Arg
Gly	Ala	Ile	Gly	Asn 115	Ala	Phe	Arg	Gln	Lys	Lys	Glu	Phe	Thr	Asp	Leu
Gln	Ser	Ser	Leu	Asn 130	Ile	Ala	Ile	Asp	Glu	His	Glu	Phe	Val	Lys	Cys
Asp 145	Val	Met	Ile	Ser 150	Gly	Val	Phe	Met	Thr	Leu	Asp	Ser	Glu	Glu	Arg
Met	Val	Leu	Thr	Val 165	His	Asp	Ile	Thr	Ser	Ile	Lys	Gln	Thr	Glu	Glu
Ala	Leu	Ala	Glu	Ala 180	Lys	Glu	Lys	Ala	Glu	Asn	Ala	Asp	Arg	Ser	Lys
Ser	Ala	Phe	Leu	Ala 195	Asn	Met	Ser	His	Glu	Ile	Arg	Thr	Pro	Leu	Asn
Ala	Ile	Val	Gly	Phe 210	Ser	Glu	Leu	Leu	Ala	Ala	Ala	Asn	Thr	Glu	Glu
Glu 225	Lys	Gln	Lys	Tyr 230	Leu	Glu	Ile	Leu	His	Thr	Asn	Ser	Glu	Leu	Leu
Leu	Gln	Leu	Val	Asn 245	Asp	Ile	Leu	Asp	Leu	Ser	Lys	Ile	Glu	Ala	Gly
Thr	Leu	Glu	Phe	Val 260	Tyr	Ser	Asp	Val	Asp	Ile	Asn	Leu	Leu	Leu	Asn
Asp	Leu	Glu	Gln	Leu 275	Phe	Arg	Met	Lys	Ile	Gly	Ser	Asn	Ser	Pro	Val
Gln	Ile	Ile	Thr	Glu 290	Ser	Gly	Leu	Pro	Ser	Cys	Met	Val	His	Thr	Asp
Arg 305	Asn	Arg	Ile	Ala 310	Gln	Val	Val	Ser	Asn	Phe	Val	Ser	Asn	Ala	Ile
Lys	Phe	Thr	Thr	Glu 325	Gly	Ser	Ile	Arg	Ile	Gly	Tyr	Gln	Ser	Ser	Glu
Asn	Gly	Leu	Arg	Phe 340	Tyr	Val	Ser	Asp	Thr	Gly	Ser	Gly	Ile	Ser	Ala
Asp	Lys	Leu	Glu	Gly 355	Val	Phe	Asp	Arg	Phe	Val	Arg	Leu	Gln	Ser	Asp
Lys	Asn	Gly	Asn	Gly 370	Leu	Gly	Leu	Ser	Ile	Cys	Lys	Thr	Ile	Val	Asn
Lys 385	Leu	Gly	Gly	Glu 390	Ile	Gly	Ala	Glu	Ser	Glu	Val	Gly	Lys	Gly	Ser
Thr	Phe	Trp	Phe	Thr 405	Leu	Pro	Glu	His	Ser	Asp	Ile	Lys	Pro	Lys	Val
Ile	Ile	Glu	Lys	Glu 420	Gln	Glu	Glu	Leu	Pro	Ser	Ala	Val	Arg	Val	Pro
Val	Ile	Asp	Ala	Gly 435	Ser	Asp	Lys	Lys	Leu	Ser	Ile	Leu	Val	Ala	Glu
Asp	Met	Glu	Asp	Asn 450	Tyr	Arg	Leu	Cys	Glu	Ala	Ile	Leu	Ala	Ser	Arg

Tyr Glu Leu His Trp Ala His Asn Gly Glu Glu Ala Ile Ser Leu Phe
 465 470 475 480
 Leu Lys Phe Gln Pro Asp Ile Ile Leu Met Asp Ile Arg Met Pro Glu
 485 490 495
 Val Asn Gly Tyr Glu Ala Thr Glu Ala Ile Arg Gln Met Ser Ala Thr
 500 505 510
 Val Pro Ile Ile Ala Leu Thr Ala Phe Ala Tyr Glu Glu Asp Arg Gln
 515 520 525
 Lys Ile Met His Ser Gly Phe Thr Asp Phe Pro Asp Glu Ala His Phe
 530 535 540
 Val Lys Ser Thr Val Gly Lys Thr Gly Ile Leu Lys Lys Asp Leu Arg
 545 550 555 560
 Asn Ile Leu Tyr Arg Ile Tyr Val Val Leu Leu Gln Leu Leu Ile
 565 570 575

<210> 9134

<211> 90

<212> PRT

<213> B.fragilis

<400> 9134

Ala Gly Ile Arg Trp Asn Gly Leu Gln Thr Ile Ser Gly Asp Pro Trp
 1 5 10 15
 Lys Glu Asp Val Ser Lys Leu Ala Phe Thr Thr Asp Tyr Thr Asn Val
 20 25 30
 Tyr Arg Trp Ile Leu Leu Ser Ile Asn Arg Leu Ser Ser Ser Cys Glu
 35 40 45
 Val Leu Tyr His Ser Val Val Ser Tyr Gly Ile Pro Pro Phe Cys Arg
 50 55 60
 Ser Arg Ser Val Glu Leu Leu Ser Cys Ala Ser Leu Pro Met Gln Leu
 65 70 75 80
 Cys Gly Glu Thr Gly Phe Arg Asp Ile Phe
 85 90

<210> 9135

<211> 515

<212> PRT

<213> B.fragilis

<400> 9135

Arg Lys Asn Arg Arg Glu Arg Gly Arg His Gly Gly Gly Val Pro Glu
 1 5 10 15
 Arg Tyr Ser Arg Pro Leu Pro Trp Arg Asp Gly Tyr Cys Ser Ala Val
 20 25 30
 Asn Leu Ile Cys Phe Ile Ser Phe Val Asn Ser Ser Phe Val Pro Ile
 35 40 45
 Phe Ala Ile Ile Thr Leu Ile Tyr Thr Ile Met Phe Ser Lys Glu Thr
 50 55 60
 Tyr Thr Gln Arg Arg Ala Leu Leu Lys Lys Thr Leu Gly Ser Gly Val
 65 70 75 80
 Leu Leu Phe Leu Gly Asn Asp Glu Cys Gly Leu Asn Tyr Glu Asp Asn
 85 90 95
 Thr Phe Arg Tyr Arg Gln Asp Ser Thr Phe Leu Tyr Tyr Phe Gly Leu
 100 105 110
 Ser Phe Ala Gly Leu Ser Ala Ile Asp Ile Asp Glu Asp Lys Glu
 115 120 125
 Ile Ile Phe Gly Asp Glu Leu Thr Ile Asp His Ile Val Trp Met Gly
 130 135 140
 Thr Gln Pro Thr Leu Lys Glu Lys Ser Glu Arg Val Gly Val Asp Ile

```

145          150          155          160
Thr Met Pro Ser Ala Asp Ile Val Ser Tyr Leu His Lys Ala Val Gln
          165          170          175
Lys Gly Gln Ala Ile His Tyr Leu Pro Pro Tyr Arg Ala Glu His Lys
          180          185          190
Leu Lys Leu Met Asp Trp Leu Gly Val Pro Ser Ala Arg Gln Glu Gly
          195          200          205
Ser Val Pro Phe Ile Arg Ala Val Ile Ala Gln Arg Asn Tyr Lys Ser
          210          215          220
Ser Glu Glu Ile Val Glu Ile Glu Lys Ala Cys Asp Ile Thr Ala Asp
225          230          235          240
Met His Ile Thr Ala Met Lys Ile Leu Arg Pro Gly Met Arg Glu Trp
          245          250          255
Glu Val Ser Ala Ala Met Glu Ala Val Ala His Ala Ala Gly Gly Asp
          260          265          270
Leu Ser Phe Ala Thr Ile Ala Thr Val Asn Gly Gln Thr Leu His Asn
          275          280          285
His Tyr His Gly Asn Ile Val Lys Pro Gly Asp Leu Phe Leu Ile Asp
          290          295          300
Ala Gly Ala Glu Thr Glu Met Gly Tyr Ala Gly Asp Met Ser Ser Thr
305          310          315          320
Val Pro Ala Asp Lys Lys Phe Thr Arg Arg Gln Arg Glu Val Tyr Glu
          325          330          335
Ile Gln Asn Ala Met His Leu Glu Ser Val Lys Ala Leu Arg Pro Gly
          340          345          350
Ile Pro Tyr Met Asp Val Tyr Asp Leu Ser Ala Arg Val Met Val Glu
          355          360          365
Gly Leu Lys Gly Leu Gly Leu Met Lys Gly Asn Ala Glu Asp Ala Val
          370          375          380
Arg Glu Gly Ala His Ala Leu Phe Tyr Pro His Gly Leu Gly His Met
385          390          395          400
Met Gly Leu Asp Val His Asp Met Glu Asn Leu Gly Glu Leu Trp Val
          405          410          415
Gly Tyr Asn Gly Gln Pro Lys Ser Thr Gln Phe Gly Arg Lys Ser Gln
          420          425          430
Arg Leu Ala Ile Pro Leu Glu Pro Gly Phe Val His Thr Val Glu Pro
          435          440          445
Gly Ile Tyr Phe Ile Pro Glu Leu Ile Asp Leu Trp Lys Gly Gln Lys
          450          455          460
Lys Phe Thr Asp Phe Ile Asn Tyr Asp Lys Val Glu Thr Tyr Lys Asp
465          470          475          480
Phe Gly Gly Ile Arg Asn Glu Glu Asp Tyr Leu Ile Thr Glu Thr Gly
          485          490          495
Ala Arg Arg Leu Gly Lys Lys Ile Pro Leu Thr Pro Asp Glu Val Glu
          500          505          510
Ala Leu Arg
          515

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<210> 9136

<211> 496

<212> PRT

<213> B.fragilis

<400> 9136

```

Ser Ile Lys Arg Met Ala Gln Gly Ser Arg Gln Ile Gln Ser Gln Ala
1          5          10          15
Gln Gln Gln Ile Gln Thr Leu Ser Pro Gln Gln Ile Leu Val Val Lys
          20          25          30
Leu Leu Glu Leu Pro Ala Val Glu Leu Glu Asp Arg Val His Ala Glu

```

35	40	45
Leu Leu Glu Asn Pro Ala	Leu Glu Glu Gly Lys Glu	Glu Ser Thr Ser
50	55	60
Asp Glu Thr Thr Pro Ala	Glu Thr Ser Glu Gly Glu	Thr Glu Gly Asp
65	70	75
Thr Asp Tyr Asp Ser Leu	Ser Asp Tyr Leu Thr Glu	Asp Asp Ile Pro
85	90	95
Asp Tyr Lys Leu Gln Glu	Asn Asn Arg Ser Lys Gly	Glu Gln Ala Glu
100	105	110
Glu Ile Pro Phe Ser Asp	Ala Thr Ser Phe Tyr Glu	Ile Leu Arg Glu
115	120	125
Gln Leu Gly Glu Arg Asn	Leu Thr Glu His Gln Arg	Glu Leu Ala Glu
130	135	140
Tyr Leu Ile Gly Ser Leu	Asp Asp Asp Gly Leu Leu	Arg Lys Ser Leu
145	150	155
Glu Ser Ile Gly Asp Glu	Leu Ala Ile Tyr Ala Gly	Ile Asn Ala Thr
165	170	175
Glu Glu Glu Leu Glu Glu	Ala Leu Arg Ile Val Gln	Asp Phe Asp Pro
180	185	190
Pro Gly Leu Gly Ala Arg	Ser Leu Gln Glu Cys Leu	Leu Ile Gln Ile
195	200	205
Arg Arg Lys Lys Gln Ser	His Cys Thr Asp Pro Leu	Leu Glu Thr Glu
210	215	220
Glu Glu Ile Ile Ser Glu	Cys Tyr Glu Glu Phe Thr	Arg Lys His Trp
225	230	235
Glu Lys Ile Ile Lys Lys	Leu Gly Leu Asp Glu Glu	His Phe Tyr Lys
245	250	255
Ala Leu Glu Glu Ile Thr	Lys Leu Asn Pro Arg Pro	Gly Ala Ser Leu
260	265	270
Gly Glu Ala Ile Gly Arg	Asn Leu Gln Gln Ile Val	Pro Asp Phe Ile
275	280	285
Val Asp Thr Tyr Asp Asp	Gly Thr Ile Asn Ile Ser	Leu Asn Asn Arg
290	295	300
Asn Leu Pro Glu Leu Arg	Met Ser Arg Asp Phe Thr	Glu Met Val Glu
305	310	315
Glu His Thr Lys Asn Lys	Ala Asn Gln Ser Lys Glu	Ser Lys Glu Ala
325	330	335
Met Met Phe Leu Lys Gln	Lys Met Asp Ala Ala Gln	Gly Phe Ile Asp
340	345	350
Ala Val Lys Gln Arg Gln	Asn Thr Leu Met Thr Thr	Met Gln Ala Ile
355	360	365
Ile Asp Leu Gln Arg Pro	Phe Phe Leu Glu Gly Asp	Glu Ser Leu Leu
370	375	380
Arg Pro Met Ile Leu Lys	Asp Val Ala Glu Arg Thr	Gly Leu Asp Ile
385	390	395
Ser Thr Ile Ser Arg Val	Ser Asn Ser Lys Tyr Val	Gln Thr Asn Tyr
405	410	415
Gly Ile Tyr Pro Leu Lys	Phe Phe Phe Ser Asp Gly	Tyr Thr Thr Glu
420	425	430
Asp Gly Glu Glu Met Ser	Val Arg Glu Ile Arg Lys	Ile Leu Lys Glu
435	440	445
Cys Ile Asp Ser Glu Asp	Lys Lys Lys Pro Leu Thr	Asp Asp Glu Leu
450	455	460
Ala Glu Ile Leu Lys Glu	Lys Gly Tyr Pro Ile Ala	Arg Arg Thr Val
465	470	475
Ala Lys Tyr Arg Gln Gln	Leu Asn Ile Pro Val Ala	Arg Leu Arg Lys
485	490	495

<211> 80
 <212> PRT
 <213> B.fragilis

<400> 9137

Lys	Ile	Asn	Arg	Ile	Met	Ala	Ile	Ile	Val	Asn	Leu	Asp	Ile	Met	Met
1				5					10					15	
Ala	Arg	Arg	Lys	Ile	Ser	Leu	Gly	Glu	Leu	Ala	Glu	Lys	Ile	Asp	Ile
			20					25					30		
Thr	Pro	Ala	Asn	Leu	Ser	Ile	Leu	Lys	Thr	Gly	Lys	Ala	Lys	Ala	Ile
		35					40					45			
Arg	Phe	Ser	Thr	Leu	Glu	Ala	Ile	Cys	Arg	Val	Leu	Asp	Cys	Gln	Pro
	50					55					60				
Gly	Asp	Ile	Leu	Glu	Tyr	Gln	Val	Asp	Glu	Glu	Asp	Gly	Gly	Thr	Ser
65					70					75					80

<210> 9138
 <211> 490
 <212> PRT
 <213> B.fragilis

<400> 9138

Lys	Lys	Leu	Ser	Thr	Ser	Leu	Lys	Gln	Thr	Lys	Lys	Met	Asp	Leu	Phe
1				5					10					15	
Asn	Tyr	Ser	Arg	Arg	Glu	Thr	Ser	Glu	Val	Asn	Ile	Gly	Ala	Val	Pro
			20					25					30		
Leu	Gly	Gly	Pro	Asn	Pro	Ile	Arg	Ile	Gln	Ser	Met	Thr	Asn	Thr	Pro
		35					40					45			
Thr	Gln	Asp	Thr	Glu	Ala	Cys	Val	Ala	Gln	Ala	Lys	Arg	Ile	Val	Asp
	50					55					60				
Ala	Gly	Gly	Glu	Tyr	Val	Arg	Leu	Thr	Thr	Gln	Gly	Val	Lys	Glu	Ala
65					70					75					80
Glu	Asn	Leu	Met	Asn	Ile	Asn	Ile	Gly	Leu	Arg	Ser	Thr	Gly	Tyr	Met
			85					90					95		
Val	Pro	Leu	Val	Ala	Asp	Val	His	Phe	Ser	Pro	Lys	Val	Ala	Asp	Val
			100					105					110		
Ala	Ala	Gln	Tyr	Ala	Glu	Lys	Val	Arg	Ile	Asn	Pro	Gly	Asn	Tyr	Val
		115					120					125			
Asp	Pro	Gly	Arg	Thr	Phe	Lys	Gln	Leu	Glu	Tyr	Thr	Asp	Glu	Glu	Tyr
	130					135					140				
Ala	Ala	Glu	Leu	Gln	Lys	Ile	Arg	Asp	Arg	Phe	Val	Pro	Phe	Leu	Asn
145					150					155					160
Ile	Cys	Lys	Glu	Asn	His	Thr	Ala	Val	Arg	Ile	Gly	Val	Asn	His	Gly
				165					170					175	
Ser	Leu	Ser	Asp	Arg	Ile	Met	Ser	Arg	Tyr	Gly	Asp	Thr	Pro	Glu	Gly
			180					185					190		
Met	Val	Glu	Ser	Cys	Met	Glu	Phe	Leu	Arg	Ile	Cys	Val	Asp	Glu	Lys
		195					200					205			
Phe	Thr	Asp	Val	Val	Ile	Ser	Ile	Lys	Ala	Ser	Asn	Thr	Val	Val	Met
	210					215					220				
Val	Lys	Thr	Val	Arg	Leu	Leu	Val	Ser	Val	Met	Glu	Gln	Glu	Gly	Met
225					230					235					240
Ser	Phe	Pro	Leu	His	Leu	Gly	Val	Thr	Glu	Ala	Gly	Asp	Gly	Glu	Asp
				245					250					255	
Gly	Arg	Ile	Lys	Ser	Ala	Leu	Gly	Ile	Gly	Ala	Leu	Leu	Ala	Asp	Gly
		260						265					270		
Leu	Gly	Asp	Thr	Ile	Arg	Val	Ser	Leu	Ser	Glu	Glu	Pro	Glu	Ala	Glu
		275					280					285			
Ile	Pro	Val	Ala	Arg	Lys	Leu	Val	Asp	Tyr	Ile	Thr	Ser	Arg	Arg	Asn

290	295	300
His Pro Tyr Ile Pro Gly Met Glu Ala Pro Asp Phe Asn Tyr Leu Ser		
305	310	315
Pro Val Arg Arg Lys Thr Arg Pro Val Arg Asn Ile Gly Gly Asp His		320
	325	330
Leu Pro Val Val Leu Ala Asp Arg Met Asp Gly Arg Met Glu Thr His		335
	340	345
Pro Gln Phe Thr Pro Asp Tyr Ile Tyr Ala Gly Arg Ala Leu Pro Glu		350
	355	360
Gln Thr Glu Pro Gly Val Gln Tyr Ile Leu Asp Ala Asp Val Trp Lys		365
	370	375
Gly Glu Pro Asp Thr Trp Pro Ala Phe Asn Tyr Ala Gln Leu Glu Leu		380
385	390	395
Met Val Thr Cys Val Ala Glu Leu Lys Phe Leu Phe Tyr Pro Leu His		400
	405	410
Gly Ala Tyr Arg Gly Ser Cys Arg Met Pro Glu Ala Thr Pro Arg Ser		415
	420	425
Ser Arg Cys Leu Thr Lys Gln Pro Pro Glu Pro Cys Arg Arg Thr Ser		430
	435	440
Cys Pro Gly Thr Ser Thr Asp Gly Gly Gly Ile Thr Glu Ser Gly Tyr		445
	450	455
Leu Leu Pro Thr Leu Cys Arg Arg Tyr Ser Arg Arg Leu Ala Gly Gln		460
465	470	475
Ser Arg Cys Gly Tyr Gly Ser Leu Asp Leu		480
	485	490

<210> 9139

<211> 224

<212> PRT

<213> B.fragilis

<400> 9139

Arg Ser Thr Arg Ser Ala Ser Pro Phe Pro Gly Gly Gln His Leu Glu		
1	5	10
Tyr Ala Leu Asn Asn His Lys Ala Lys Ala Ser Val Thr Glu Ser Glu		15
	20	25
Gly Met Lys Gln Val Ser Trp Thr Leu Lys Asn Leu Pro Ala Leu Ser		30
	35	40
Arg Glu Pro Gln Val Ser Val Ile Gly Gly Asp Leu Pro Leu Leu Thr		45
	50	55
Ala Thr Thr Glu Glu Lys Pro Leu Ser Phe Leu Thr Ser Gln Trp Gln		60
65	70	75
Pro Glu Gly Asp Ala Gly Ile Arg Ala Leu Ala Gly Lys Leu Thr Ala		80
	85	90
Gly Ala Lys Asp Asp Lys Glu Lys Val Thr Ala Ile Arg Asp Tyr Val		95
	100	105
Ile Asp Asn Leu Tyr Tyr Ser Ser Leu Pro Leu Ala Glu Ser Gly Tyr		110
	115	120
Arg Ile Arg Pro Ala Ala Glu Val Ile Arg Ser Ala Tyr Gly Thr Glu		125
	130	135
Ala Glu Lys Ala Asn Leu Met Ala Ala Leu Leu Lys Ala Ala Gly Leu		140
145	150	155
Lys Ala Gly Ile Gly Ala Val Cys Ala Pro Ser Glu Asn Thr Ala Ser		160
	165	170
Leu Gly Val Gly Ser Ile Arg Asp Thr Ile Cys Val Asp Gln Arg Arg		175
	180	185
Arg Gln Pro Thr Gly Ser Val Ser Glu Arg Gln Asn Ser Leu Ser Arg		190
	195	200
Phe Val Ala Glu Arg Leu Cys Leu Cys Ser Phe Ile Asp Ala Ala Val		205

210

215

220

<210> 9140

<211> 389

<212> PRT

<213> B.fragilis

<400> 9140

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Leu Ser Gly Gly Thr Cys Asp Arg Glu Pro Thr Thr Asn Gln Arg Cys
1      5      10      15
Gly Ser Gly Val Arg Ile Arg Lys Glu Arg Ser Gly Ile Val Asn Lys
20      25      30
Pro Ser Tyr Leu Thr His Pro Thr Val Lys Ile Ile Asn Phe Glu Ala
35      40      45
Leu Asn Ser Lys Ser Ile Ile Met Lys Arg Asn Ser Met Phe Ile Leu
50      55      60
Ser Ala Phe Ile Leu Phe Ser Ala Phe Ser Cys Gly Thr Asn Gly Ser
65      70      75      80
Lys Thr Thr Ser Thr Asp Ile Thr Glu Lys Lys Val Ile Val Gln Val
85      90      95
Pro Gln Phe Asp Ala Asp Ser Ala Tyr Lys Tyr Ile Gln Ala Gln Val
100     105     110
Asp Phe Gly Pro Arg Thr Pro Asn Ser Lys Gly His Val Ala Cys Gly
115     120     125
Asp Tyr Leu Ala Ala Lys Leu Ala Glu His Gly Ala Lys Val Ile Ser
130     135     140
Gln Asn Ala Glu Leu Pro Ala Tyr Asp Gly Thr Leu Leu Lys Ala Arg
145     150     155     160
Asn Ile Ile Gly Ser Phe Lys Pro Glu Ser Lys Lys Arg Ile Ala Leu
165     170     175
Phe Ala His Trp Asp Thr Arg Pro Trp Ala Asp Asn Asp Pro Asn Glu
180     185     190
Lys Asn His His Thr Pro Ile Leu Gly Ala Asn Asp Gly Ala Ser Gly
195     200     205
Val Gly Val Leu Leu Glu Ile Ala Arg Gln Ile Asn Gln Gln Gln Pro
210     215     220
Glu Leu Gly Ile Asp Ile Ile Phe Leu Asp Ala Glu Asp Tyr Gly Ala
225     230     235     240
Pro Gln Phe Tyr Thr Gly Glu His Arg Glu Asp Gln Trp Cys Leu Gly
245     250     255
Ala Gln Tyr Trp Ala Arg Thr Pro His Val Asp Gly Tyr Asn Ala Arg
260     265     270
Phe Gly Ile Leu Leu Asp Met Val Gly Gly Lys Asp Ala Thr Phe Phe
275     280     285
Lys Glu Val Tyr Ser Glu Lys Tyr Ala Lys Gly Ile Asn Lys Lys Val
290     295     300
Trp Lys Lys Ala Asn Asp Ala Gly Tyr Gly Arg Tyr Phe Ile Asn Glu
305     310     315     320
Val Gly Gly Gln Ile Thr Asp Asp His Leu Phe Ile Asn Arg Leu Ala
325     330     335
Gly Ile Pro Thr Ile Asp Ile Ile Pro Asn Asp Glu Asn Cys Glu Leu
340     345     350
Ser Ser Phe Gly Pro Thr Trp His Thr Val Asn Asp Asn Met Asp Ala
355     360     365
Ile Asp Arg Ser Thr Leu Lys Ala Val Gly Gln Thr Val Leu Glu Val
370     375     380
Ile Tyr Asn Glu Lys
385

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<210> 9141
 <211> 348
 <212> PRT
 <213> B.fragilis

<400> 9141

```

Met Pro Ser Gly Ser Phe Gly Ile Lys Ile Val Thr Gly Asp Thr Pro
1          5          10          15
Gly Thr Ala Thr Glu Ile Ala Arg Gln Ile Gly Leu Trp Lys Pro Glu
          20          25          30
Asp Thr Glu Arg Asn Arg Ile Thr Gly Val Ala Phe Ala Glu Leu Ser
          35          40          45
Asp Glu Glu Ala Leu Asp Arg Val Met Asp Leu Lys Ile Met Ser Arg
          50          55          60
Ala Arg Pro Thr Asp Lys Gln Arg Leu Val Gln Leu Leu Gln Gln Lys
          65          70          75          80
Gly Ala Val Val Ala Val Thr Gly Asp Gly Thr Asn Asp Ala Pro Ala
          85          90          95
Leu Asn His Ala Gln Val Gly Leu Ser Met Gly Thr Gly Thr Ser Val
          100          105          110
Ala Lys Glu Ala Ser Asp Ile Thr Leu Leu Asp Asp Ser Phe Asn Ser
          115          120          125
Ile Gly Thr Ala Val Met Trp Gly Arg Ser Leu Tyr Lys Asn Ile Gln
          130          135          140
Arg Phe Ile Val Phe Gln Leu Thr Ile Asn Phe Val Ala Leu Leu Ile
          145          150          155          160
Val Leu Leu Gly Ser Ile Val Gly Thr Glu Leu Pro Leu Thr Val Thr
          165          170          175
Gln Met Leu Trp Val Asn Leu Ile Met Asp Thr Phe Ala Ala Leu Ala
          180          185          190
Leu Ala Ser Ile Pro Pro Ser Glu Ser Val Met Asn Asp Lys Pro Arg
          195          200          205
Arg Ser Thr Asp Phe Ile Ile Ser Lys Ala Met Gln His Asn Ile Phe
          210          215          220
Gly Val Gly Thr Leu Phe Leu Val Val Leu Met Ala Met Ile Tyr Tyr
          225          230          235          240
Phe Thr Asn Ala Asp Gly Gly Met Thr Val Gln Arg Leu Thr Ile Phe
          245          250          255
Phe Thr Phe Phe Val Met Leu Gln Phe Trp Asn Leu Phe Asn Ala Arg
          260          265          270
Val Phe Gly Thr Thr Asp Ser Ala Phe Lys Gly Leu Thr Lys Ser Tyr
          275          280          285
Gly Met Glu Leu Ile Val Leu Ala Ile Leu Gly Gly Gln Phe Leu Ile
          290          295          300
Val Gln Phe Gly Gly Ala Val Phe Arg Thr Glu Pro Leu Asp Trp Gln
          305          310          315          320
Thr Trp Leu Ile Ile Ile Gly Ser Ser Ser Leu Val Leu Trp Ile Gly
          325          330          335
Glu Leu Ile Arg Leu Val Lys Arg Leu Thr Gln Lys
          340          345

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<210> 9142
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 9142

```

Leu Phe Ile Met Ser Ile Asn Glu Leu Gln Asp Glu Val Val Ala Glu
1          5          10          15

```


Phe Ser Asp Phe Asp Asp Trp Met Asp Arg Tyr Gln Leu Leu Ile Asp
 20 25 30
 Leu Gly Asn Glu Gln Glu Pro Leu Asp Glu Lys Tyr Lys Thr Glu Gln
 35 40 45
 Asn Leu Ile Glu Gly Cys Gln Ser Arg Val Trp Leu Gln Ala Asp Glu
 50 55 60
 Val Asp Gly Lys Ile Ile Phe Lys Ala Glu Ser Asp Ala Leu Ile Val
 65 70 75 80
 Lys Gly Ile Ile Ala Leu Leu Ile Lys Val Val Ser Gly His Thr Pro
 85 90 95
 Asp Glu Ile Leu Asn Ser Glu Leu Tyr Phe Ile Asp Arg Ile Gly Leu
 100 105 110
 Lys Asp His Leu Ser Pro Thr Arg Ser Asn Gly Leu Leu Ser Met Val
 115 120 125
 Lys Gln Met Arg Met Tyr Ala Leu Ala Phe Lys Ala Lys Glu Ala Lys
 130 135 140
 Gly
 145

<210> 9143
 <211> 130
 <212> PRT
 <213> B.fragilis

<400> 9143
 Lys Leu Ile Ile Met Asn Phe Pro Gln Asn Val Lys Tyr Thr Asn Glu
 1 5 10 15
 His Glu Trp Ile Arg Leu Glu Gly Asp Val Ala Tyr Val Gly Ile Thr
 20 25 30
 Asp Tyr Ala Gln Glu Gln Leu Gly Asp Ile Val Phe Val Asp Ile Pro
 35 40 45
 Thr Glu Gly Glu Thr Leu Glu Ala Gly Glu Val Phe Gly Thr Ile Glu
 50 55 60
 Val Val Lys Thr Ile Ser Asp Leu Phe Leu Pro Val Ala Gly Glu Val
 65 70 75 80
 Val Glu Gln Asn Pro Ala Leu Glu Glu Asn Pro Glu Leu Val Asn Lys
 85 90 95
 Asp Pro Tyr Gly Glu Gly Trp Leu Ile Lys Met Lys Pro Ala Asn Ala
 100 105 110
 Ala Asp Leu Asp Asn Leu Leu Asp Ala Glu Gly Tyr Lys Ala Val Val
 115 120 125
 Asn Ala
 130

<210> 9144
 <211> 180
 <212> PRT
 <213> B.fragilis

<400> 9144
 Ser Ser His Met Thr Lys Ile Tyr Thr Leu Leu Leu Cys Leu Phe
 1 5 10 15
 Ala Leu Thr Leu Pro Val Thr Ala Arg Glu Ala Glu Phe Lys Lys Ile
 20 25 30
 Lys Glu Ser Trp Thr Leu Gln Ala Asp Gly Thr Gln Val Tyr Arg Gln
 35 40 45
 Ser Lys Val Leu Thr Leu Tyr Thr His Thr Ala Met Asn Arg Thr Tyr
 50 55 60
 Gly Glu Ser Phe Ile Thr Tyr Asp Pro Arg Tyr Gln Thr Leu Gln Ile

```

65          70          75          80
His Glu Ser Tyr Thr Arg Gln Lys Asp Gly Asn Ile Val Lys Thr Pro
      85          90          95
Ala Asn Ala Leu Val Glu Val Leu Pro Ser Ala Ala Ala Asn Ala Pro
      100          105          110
Ala Phe Asn Ala Leu Arg Glu Met Val Val Val His Thr Gly Leu Glu
      115          120          125
Leu Gly Ala Thr Ile Tyr Leu Asp Tyr Ser Ile Thr Thr Lys Pro Gly
      130          135          140
Tyr Leu Pro Gly Ile Gln Ile Cys Arg Leu Leu Glu His Ser Ser Pro
      145          150          155          160
Val Lys Glu Tyr Glu Ile Ser Ile Thr Val Pro Arg Gly Ala Thr Ser
      165          170          175
Gly Ile Cys Pro
      180

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<210> 9145

<211> 235

<212> PRT

<213> B.fragilis

<400> 9145

```

Lys Ser Ile Ile Lys Glu Thr Asn Lys Met Ala Glu Glu Glu Lys Ile
1          5          10          15
Glu Gln His Ile Ile Ala Asp Arg Thr Leu Ile Arg Thr Ala Arg Ile
      20          25          30
Ile Ser Gly Ile Leu Thr Pro Phe Ser Ile Pro Phe Leu Ala Phe Leu
      35          40          45
Val Leu Phe Leu Phe Ser Tyr Leu Arg Ile Met Pro Leu Gln Tyr Lys
      50          55          60
Leu Ile Val Leu Gly Ile Val Tyr Cys Phe Thr Ile Leu Met Pro Thr
      65          70          75          80
Met Thr Ile Phe Leu Phe Arg Lys Val Asn Gly Phe Ala Arg Gln Asp
      85          90          95
Leu Ser Asp Arg Lys Lys Arg Tyr Val Pro Ile Leu Leu Thr Ile Ile
      100          105          110
Ser Tyr Val Phe Cys Leu Met Met Met His Lys Leu Asn Ile Pro Trp
      115          120          125
Tyr Met Thr Gly Ile Ile Leu Ala Ser Leu Val Val Leu Val Ile Cys
      130          135          140
Ile Ile Val Asn Leu Lys Trp Lys Leu Ser Glu His Met Ala Gly Met
      145          150          155          160
Gly Gly Ile Val Gly Gly Leu Val Ser Phe Ser Ala Leu Phe Ser Tyr
      165          170          175
Asn Pro Val Trp Trp Leu Cys Leu Phe Ile Leu Val Ala Gly Ile Leu
      180          185          190
Gly Ser Ala Arg Ile Ile Leu Gln His His Thr Leu Gly Glu Val Leu
      195          200          205
Ala Gly Phe Thr Val Gly Phe Val Cys Ser Leu Leu Val Leu His Pro
      210          215          220
Leu Ser Asn Val Leu Phe Arg Ile Phe Leu Phe
      225          230          235

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<210> 9146

<211> 230

<212> PRT

<213> B.fragilis

<400> 9146

```

Asn Ser Ser Phe Thr Leu Tyr Met Ala Leu Thr Gly Glu Val Val Ala
1          5          10          15
Cys Leu Lys Gln His Pro Glu Ala Val Val Ser Gln Ser Asn His
20          25          30
Pro Asn Arg Val Gly Glu His Arg Ala Leu Ala His Gln Leu Thr Val
35          40          45
Glu Gly Leu Gln Asn Pro Val Ile Phe Phe Gln His Tyr Ala Glu Asp
50          55          60
Thr Ala Glu Asp Leu Gln Val Lys Ala Gly Ala Asp Met Gly Ala Leu
65          70          75          80
Ile Phe Asp Gly Leu Cys Asp Gly Ile Tyr Leu Phe Asn Gln Gly Lys
85          90          95
Leu Ser His Ala Val Ile Asp Ala Thr Ala Phe Gly Ile Leu Gln Ala
100         105         110
Gly Arg Ile Arg Thr Ser Lys Thr Glu Tyr Ile Ser Cys Pro Gly Cys
115         120         125
Gly Arg Thr Leu Phe Asn Leu Gln Ser Thr Ile Ala Arg Val Lys Glu
130         135         140
Ala Thr Ser His Leu Lys Gly Leu Lys Ile Gly Ile Met Gly Cys Ile
145         150         155         160
Val Asn Gly Pro Gly Glu Met Ala Asp Ala Asp Tyr Gly Tyr Val Gly
165         170         175
Ala Gly Arg Gly Lys Ile Ser Leu Tyr Lys Gln Lys Glu Cys Ile Glu
180         185         190
Lys Asn Ile Pro Glu Glu Glu Ala Val Glu Lys Leu Ile Glu Leu Ile
195         200         205
Lys Ala Asn Gly Asp Tyr Glu Glu Lys Thr Ser Ser Leu Ser Ser Pro
210         215         220
Lys Glu Lys Glu Asp Lys
225         230

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<210> 9147

<211> 145

<212> PRT

<213> B.fragilis

<400> 9147

```

Val Asn Leu Ser Pro Val Thr Val Arg Lys Val Tyr Ala Leu Gln Pro
1          5          10          15
Asp Ala Ala Asn Ala Lys Asp Gly Tyr Val Val Phe Thr Leu Pro Val
20          25          30
Glu Arg Gly Ser Leu Ala Asp Ser Gln Tyr Val Arg Phe Asn Ser Lys
35          40          45
Arg Thr Ser Asn Leu Leu Leu Pro Gly Leu Ala Gly Glu Ser Phe Thr
50          55          60
Tyr Thr Ile Asp Thr Pro Ala Gly Met Glu Pro Val Thr Arg Pro Met
65          70          75          80
Glu Lys Lys Met Asp Asn Ala Val Gly Thr Leu Thr Ile Ser Ile Arg
85          90          95
Pro Glu Gly Ala Lys Thr Arg Val Ile Arg Ser Leu Lys Leu Lys Lys
100         105         110
Gln Met Ile Arg Pro Ala Asp Tyr Ala Ala Phe Arg Gln Leu Met Thr
115         120         125
Glu Tyr Gly Ala Val Asp Gly Leu Thr Leu Val Tyr Arg Lys Pro Leu
130         135         140
Pro
145

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<210> 9148

<211> 565
 <212> PRT
 <213> B.fragilis

<400> 9148

Thr	Glu	Tyr	Ser	Phe	Tyr	Asp	Phe	Leu	Lys	Leu	Ile	Gly	Ser	Leu	Gly
1				5					10					15	
Leu	Phe	Leu	Tyr	Gly	Met	Lys	Ile	Met	Ser	Glu	Gly	Leu	Gln	Lys	Val
			20					25					30		
Ala	Gly	Asp	Arg	Leu	Arg	Gly	Ile	Leu	Thr	Ala	Met	Thr	Thr	Asn	Arg
		35					40					45			
Val	Thr	Gly	Val	Leu	Thr	Gly	Val	Leu	Ile	Thr	Ala	Leu	Ile	Gln	Ser
	50					55					60				
Ser	Ser	Ala	Thr	Thr	Val	Met	Val	Val	Ser	Phe	Val	Asn	Ala	Gly	Leu
65					70					75				80	
Leu	Thr	Leu	Ala	Glu	Ser	Ile	Ser	Val	Ile	Met	Gly	Ala	Asn	Ile	Gly
				85					90					95	
Thr	Thr	Val	Thr	Ala	Trp	Ile	Ile	Ser	Ile	Phe	Gly	Phe	Lys	Val	Asp
			100					105					110		
Met	Ala	Ala	Phe	Ala	Leu	Pro	Leu	Leu	Ala	Ile	Ala	Leu	Pro	Leu	Ile
		115					120						125		
Phe	Ser	Gly	Lys	Ser	Asn	Arg	Lys	Ser	Ile	Gly	Glu	Phe	Ile	Phe	Gly
	130					135					140				
Phe	Ser	Phe	Leu	Phe	Met	Gly	Leu	Ser	Tyr	Leu	Lys	Ala	Asn	Ala	Pro
145					150					155					160
Asp	Leu	Asn	Ala	Asn	Pro	Glu	Met	Leu	Ala	Phe	Val	Gln	Asn	Tyr	Thr
				165					170					175	
Asp	Met	Gly	Phe	Phe	Ser	Val	Leu	Leu	Phe	Leu	Phe	Ile	Gly	Thr	Ile
			180					185					190		
Leu	Thr	Met	Ile	Val	Gln	Ala	Ser	Ala	Ala	Thr	Met	Ala	Ile	Thr	Leu
		195					200						205		
Ile	Met	Cys	Ala	Asn	Gly	Trp	Ile	Ser	Leu	Glu	Leu	Gly	Ala	Ala	Leu
	210				215							220			
Val	Leu	Gly	Glu	Asn	Ile	Gly	Thr	Thr	Ile	Thr	Ala	Asn	Leu	Ala	Ala
225					230						235				240
Leu	Thr	Ala	Asn	Ser	Gln	Ala	Lys	Arg	Ala	Ala	Leu	Ala	His	Phe	Val
			245						250					255	
Phe	Asn	Val	Phe	Gly	Val	Ile	Trp	Val	Leu	Ile	Ile	Phe	His	Pro	Phe
		260						265					270		
Met	Val	Phe	Val	Asn	Trp	Val	Val	Asp	Thr	Phe	Phe	His	Pro	Gly	Ser
		275					280						285		
Ala	Glu	Val	Ala	Ile	Ser	Tyr	Lys	Leu	Ser	Ala	Phe	His	Ser	Ile	Phe
		290				295					300				
Asn	Ile	Cys	Asn	Val	Cys	Leu	Leu	Ile	Trp	Gly	Val	Lys	Leu	Ile	Glu
305					310					315					320
Arg	Thr	Val	Cys	Ala	Ile	Ile	Arg	Pro	Lys	Glu	Glu	Asp	Glu	Glu	Pro
			325						330					335	
Arg	Leu	Arg	Phe	Ile	Thr	Gly	Gly	Met	Leu	Ser	Thr	Ala	Glu	Leu	Ser
			340					345					350		
Ile	Leu	Gln	Ala	Arg	Lys	Glu	Ile	His	Leu	Phe	Ser	Glu	Arg	Ile	His
		355					360					365			
Arg	Met	Phe	Gly	Met	Val	Gln	Asp	Leu	Leu	His	Thr	Glu	Lys	Asp	Asp
	370					375					380				
Asp	Phe	Asn	Lys	Leu	Phe	Ser	Arg	Ile	Glu	Lys	Tyr	Glu	Asn	Ile	Ser
385					390					395					400
Asp	Asn	Met	Glu	Leu	Glu	Ile	Ala	Asn	Tyr	Leu	Asn	Gln	Val	Ser	Glu
			405						410					415	
Gly	Arg	Leu	Ser	Ser	Glu	Ser	Lys	Leu	Gln	Ile	Arg	Ala	Met	Leu	Arg
			420					425					430		

Glu Val Thr Glu Ile Glu Ser Ile Gly Asp Ser Cys Tyr Asn Leu Ala
 435 440 445
 Arg Thr Ile Ser Arg Lys Arg Gln Thr Asn Gln Asp Phe Thr Glu Lys
 450 455 460
 Gln Tyr Glu His Ile His Phe Met Met Lys Leu Thr Asn Asp Ala Leu
 465 470 475 480
 Ser Gln Met Ile Val Val Val Glu Lys Pro Glu His Gln Ser Ile Asp
 485 490 495
 Val Asn Lys Ser Phe Asn Ile Glu Asn Glu Ile Asn Asn Tyr Arg Asn
 500 505 510
 Gln Leu Lys Asn Gln Asn Ile Leu Asp Val Asn Asn Lys Glu Tyr Asp
 515 520 525
 Tyr Gln Met Gly Val Tyr Tyr Met Asp Ile Ile Ala Glu Cys Glu Lys
 530 535 540
 Leu Gly Asp Tyr Val Val Asn Val Val Glu Ala Ser Ser Asp Val Lys
 545 550 555 560
 Glu Lys Lys Ala Ser
 565

<210> 9149

<211> 551

<212> PRT

<213> B.fragilis

<400> 9149

Met Ile Cys Ser Phe Phe Phe Ile Tyr Phe Cys Pro Leu Arg Ile Leu
 1 5 10 15
 Ile Ile Asn Leu Thr Ile Met Lys Arg Lys Ala Thr Leu Leu Phe Leu
 20 25 30
 Val Thr Phe Val Leu Leu Leu Gly Ala Val Ala Gln Glu Lys Leu Lys
 35 40 45
 Thr Val Ile Glu Pro Leu Gln Asn Glu Arg Trp Trp Gly Gly Phe Val
 50 55 60
 Ala Leu Gly Asn Gln Met Pro Phe Asn Asp His Leu Arg Met Gln Asp
 65 70 75 80
 Met Ser Arg Asn Asn Met Asn Asn Gln Val Val Pro Phe Met Leu Ser
 85 90 95
 Ser Glu Gly Arg Tyr Ile Trp Ala Glu Asn Pro Phe Cys Phe Glu Val
 100 105 110
 Lys Asp Gly Gln Leu Ile Ile Tyr Ser Asp Ser Glu Lys Ile Glu Pro
 115 120 125
 Val Lys Ala Gly Thr Thr Leu Lys Glu Ala Leu Leu Ala Ala Ser Ala
 130 135 140
 Lys His Phe Pro Pro Ser Gly Lys Ile Pro Glu Pro Thr Phe Phe Ser
 145 150 155 160
 Leu Pro Gln Tyr Asn Thr Trp Ile Glu Leu Met Tyr Asp Gln Asn Gln
 165 170 175
 Glu Asp Ile Met Asn Tyr Ala His Lys Ala Val Glu Asn Gly Phe Pro
 180 185 190
 Gln Gly Val Phe Met Val Asp Asp Asn Trp Gln Arg Tyr Tyr Gly Asn
 195 200 205
 Phe Asp Phe Lys Thr Glu Arg Phe Pro Asp Pro Lys Gly Met Thr Asp
 210 215 220
 Glu Leu His Arg Met Gly Phe Lys Val Met Leu Trp Val Ala Pro Tyr
 225 230 235 240
 Val Ser Pro Asp Ser Pro Glu Phe Arg Glu Leu Glu Ala Lys Gly Tyr
 245 250 255
 Leu Leu Lys Asp Lys Asn Gly Arg Thr Ala Ile Ile His Trp Trp Asn
 260 265 270

Gly Tyr Ser Ala Cys Tyr Asp Thr Thr Asn Pro Glu Ala Met Asn Tyr
 275 280 285
 Leu Lys Glu Gln Leu Lys Ala Asn Gln Glu Lys Tyr Gly Ile Asp Gly
 290 295 300
 Phe Lys Phe Asp Gly Gly Asp Val Ala Tyr Met Thr Gly Glu Tyr Thr
 305 310 315 320
 Phe His Asp Lys Asn Ala Asn Val Asn Thr Phe Met Glu Lys Trp Ala
 325 330 335
 Glu Ile Gly Leu Ser Phe Pro Tyr Asn Glu Leu Arg Ala Ser Trp Lys
 340 345 350
 Leu Gly Gly Gln Ala Leu Val Gln Arg Leu Gly Asp Lys Asp Tyr Ser
 355 360 365
 Trp Arg Ala Thr Gln Leu Leu Ile Pro Asp Met Thr Ala Ala Gly Leu
 370 375 380
 Leu Gly His Tyr Tyr Thr Cys Pro Asp Met Val Gly Gly Gly Gln Phe
 385 390 395 400
 Gly Ala Phe Leu Asn Val Lys Lys Phe Asp Glu Glu Leu Ile Val Arg
 405 410 415
 Ser Cys Gln Val His Ala Leu Met Pro Met Met Gln Phe Ser Val Ala
 420 425 430
 Pro Trp Arg Ile Leu Ser Lys Glu Asn Val Ala Ile Cys Ala Lys Tyr
 435 440 445
 Ala His Leu His Gln Gln Met Gly Asp Tyr Ile Leu Glu Leu Ala Lys
 450 455 460
 His Ala Ser Lys Thr Gly Glu Pro Ile Val Arg His Met Glu Tyr Gln
 465 470 475 480
 Tyr Pro His Gln Gly Phe Ile Asp Cys Lys Asp Gln Phe Met Leu Gly
 485 490 495
 Asp Lys Tyr Leu Val Ala Pro Met Leu Thr Ser Gly Thr Ser Arg Thr
 500 505 510
 Val Met Leu Pro Lys Gly Arg Trp Lys Asp Asp Arg Gly Lys Val Phe
 515 520 525
 Lys Gly Pro Arg Thr Met Thr Ile Asp Val Pro Leu Glu Arg Leu Pro
 530 535 540
 Tyr Phe Glu Lys Leu Thr Lys
 545 550

<210> 9150

<211> 108

<212> PRT

<213> B.fragilis

<400> 9150

Phe Val Pro Leu His Arg Phe Lys Arg Lys Ala Leu Leu Asn Arg Ser
 1 5 10 15
 Phe Gly Glu Val Ala Glu Trp Ser Ile Ala Ala Val Leu Lys Thr Val
 20 25 30
 Val Leu Arg Gly Thr Arg Gly Ser Asn Pro Cys Leu Ser Ala Ile Asn
 35 40 45
 Ala Glu Asn Gln Gln Ile Ile Lys Gln Thr Pro Asn Phe Ile Pro Lys
 50 55 60
 Asn Val Lys Leu Gly Val Phe Ile Leu Phe Lys Thr Asn His Ile Arg
 65 70 75 80
 Ser Glu Asn Asn Leu Ile Lys Asn Arg Thr Asn Glu Lys Asn Asn Gln
 85 90 95
 Phe Ile Phe Arg Lys Ile Ser Tyr Leu Cys Ser Lys
 100 105

<210> 9151

<211> 72
 <212> PRT
 <213> B.fragilis

<400> 9151

Ile	Thr	Ile	Ser	Lys	Lys	Asn	Ala	Glu	Ile	Cys	Asp	Ile	His	Glu	Lys
1				5					10					15	
Leu	Ser	Thr	His	Ile	Ala	Arg	His	Ser	Tyr	Ala	Thr	Ser	Ile	Ser	Leu
			20					25					30		
Thr	Asn	Gly	Val	Ser	Met	Glu	Asn	Leu	Ala	Lys	Ile	Leu	Gly	His	Thr
		35					40					45			
Asp	Thr	Ser	Ile	Thr	Arg	Thr	Leu	Cys	Thr	Gly	Ala	Gly	Pro	Lys	Tyr
	50					55					60				
Tyr	Gly	Arg	Tyr	Thr	Glu	Ser	Lys								
65					70										

<210> 9152
 <211> 464
 <212> PRT
 <213> B.fragilis

<400> 9152

Gly	Pro	Ala	Ser	Val	Phe	Leu	Lys	Lys	Phe	Ile	Asn	Asn	Ser	Asp	Ser
1				5					10					15	
Phe	Cys	Val	Ser	Pro	Tyr	Phe	Gly	Val	Ile	Cys	Gly	His	Glu	Thr	Ile
			20					25					30		
Gln	Thr	Tyr	Met	Glu	Phe	Leu	Val	Ile	Ile	Leu	Leu	Leu	Val	Leu	Asn
		35					40					45			
Gly	Ile	Phe	Ala	Met	Tyr	Glu	Ile	Ala	Leu	Val	Ser	Ser	Ser	Lys	Ala
	50					55					60				
Arg	Leu	Glu	Thr	Leu	Val	Ser	Lys	Gly	Asn	Lys	Ser	Ala	Arg	Gly	Val
65					70				75					80	
Leu	Lys	Gln	Leu	Glu	Glu	Pro	Glu	Lys	Phe	Leu	Ser	Thr	Ile	Gln	Ile
			85						90					95	
Gly	Ile	Thr	Leu	Ile	Gly	Ile	Val	Ser	Gly	Ala	Phe	Gly	Gly	Val	Ala
		100						105					110		
Ile	Ala	Asp	Asp	Val	Thr	Pro	Leu	Phe	Ala	Met	Ile	Pro	Gly	Ala	Glu
	115						120					125			
Val	Tyr	Ala	Lys	Asp	Leu	Ala	Met	Ile	Thr	Thr	Val	Ile	Val	Ile	Thr
	130					135					140				
Tyr	Leu	Ser	Leu	Ile	Ile	Gly	Glu	Leu	Val	Pro	Lys	Ser	Ile	Ala	Leu
145					150					155					160
Ser	Asn	Pro	Glu	Arg	Tyr	Ala	Thr	Leu	Leu	Ser	Pro	Val	Met	Ile	Leu
			165						170					175	
Leu	Thr	Lys	Ile	Ser	Phe	Pro	Phe	Val	Trp	Leu	Leu	Ser	Ile	Ser	Thr
		180						185					190		
Arg	Leu	Leu	Asn	Lys	Leu	Ile	Gly	Leu	Lys	Ser	Glu	Glu	Arg	Leu	Met
	195						200					205			
Thr	Gln	Glu	Glu	Leu	Lys	Met	Ile	Leu	His	Gln	Ser	Phe	Asp	Gln	Gly
	210					215					220				
Val	Ile	Asp	Lys	Glu	Lys	Thr	Glu	Met	Leu	Arg	Asp	Val	Phe	Arg	Phe
225					230					235					240
Ser	Asp	Lys	Arg	Ala	Asn	Glu	Leu	Met	Thr	His	Arg	Arg	Asp	Leu	Val
			245						250					255	
Val	Leu	His	Thr	Asp	Ser	Lys	Glu	Lys	Val	Leu	Gln	Ile	Ile	Asp	
		260					265					270			
Asn	Glu	His	Phe	Ser	Lys	Tyr	Leu	Ile	Asp	Asp	Asp	Thr	Asp	Glu	
	275					280					285				
Ile	Ala	Gly	Val	Val	Ser	Val	Lys	Asp	Ile	Ile	Leu	Met	Ile	Gly	Ser

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      290                      295                      300
Glu Gln Glu Phe Asn Leu Arg Glu Ile Ala Arg Pro Ala Leu Phe Ile
305                      310                      315                      320
Pro Glu Ser Leu Tyr Ala Lys Lys Val Leu Glu Leu Phe Lys Lys Asn
      325                      330                      335
Lys Asn Lys Phe Gly Val Val Val Asn Glu Tyr Gly Ser Thr Glu Gly
      340                      345                      350
Ile Ile Thr Leu His Asp Leu Thr Glu Ser Ile Phe Gly Asp Ile Leu
      355                      360                      365
Glu Glu Asp Asp Thr Glu Glu Glu Glu Ile Val Arg Arg Gln Asp Gly
      370                      375                      380
Ser Leu Leu Val Glu Ala Ser Met Asn Ile Gly Asp Phe Met Glu Glu
385                      390                      395                      400
Met Gly Ile Leu Ser Tyr Asp Asp Ile Glu Ser Glu Asp Phe Thr Thr
      405                      410                      415
Leu Gly Gly Leu Ala Met Phe Leu Ile Gly Arg Ile Pro Lys Ala Gly
      420                      425                      430
Asp Ile Phe Thr Tyr Lys Asn Leu Gln Phe Glu Val Val Asp Met Asp
      435                      440                      445
Arg Gly Arg Val Asp Lys Leu Leu Val Ile Lys Arg Glu Glu Glu Glu
      450                      455                      460

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<210> 9153
<211> 97
<212> PRT
<213> B.fragilis

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<400> 9153
Tyr Ser Gln Ser Met Arg Phe Tyr Phe Asn Asp Leu Phe Ser Ala Leu
1      5      10      15
Pro His Ile Gln His Asn Ser Leu Ser Arg His Asn Leu Tyr Phe Val
      20      25      30
Gln Gln Ile Pro Arg Val Asn Arg Pro Gln Glu Arg Gly Tyr Ser Gln
      35      40      45
Gly Lys Lys Ser Tyr Asp Asn Ile His Asn Lys Asn Val Tyr Val Asp
      50      55      60
Pro Leu Pro His Lys Tyr Ile His Tyr His Lys Pro His Ile Ser Lys
65      70      75      80
Thr Leu Tyr His His Leu His Tyr Val Pro Asn Asp Glu Arg Gln Thr
      85      90      95
Lys

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<210> 9154
<211> 469
<212> PRT
<213> B.fragilis

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<400> 9154
Asn Cys Lys Ser Leu Ile Ile Ile Tyr Tyr Leu Lys Arg Arg Val Asn
1      5      10      15
Leu Asn Leu Ser Glu Tyr Leu Leu Leu Phe Gln Ile Leu Gly Val Tyr
      20      25      30
Leu Gly Val Glu Phe Gln Thr His Pro Ile Met Asn Ile Lys Arg Asn
      35      40      45
Ile Ile Phe Ala Leu Glu Ser Arg Lys Lys Asn Gly Val Pro Ile Val
      50      55      60
Glu Asn Val Pro Ile Arg Met Arg Val Ile Tyr Ala Ser Gln Arg Ile
65      70      75      80

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Glu Phe Thr Thr Gly Tyr Arg Ile Asp Val Ala Lys Trp Asp Ala Asp
 85 90 95
 Lys Gln Arg Val Lys Asn Gly Cys Thr Asn Lys Leu Lys Gln Ser Ala
 100 105 110
 Ser Glu Ile Asn Ala Asp Leu Leu Lys Tyr Tyr Ala Glu Ile Gln Asn
 115 120 125
 Val Phe Lys Glu Phe Glu Val Gln Glu Thr Ile Pro Thr Thr Gln Gln
 130 135 140
 Leu Lys Asp Ala Phe Asn Leu Arg Met Lys Asp Thr Ser Glu Glu Gln
 145 150 155 160
 Gln Glu Glu Thr Gln Ile Ser Phe Trp Glu Val Phe Asp Glu Phe Val
 165 170 175
 Lys Glu Cys Gly Asn Gln Asn Asn Trp Thr Ala Ser Thr Tyr Glu Lys
 180 185 190
 Phe Ser Ala Val Lys Asn His Leu Lys Glu Phe Lys Glu Asp Val Thr
 195 200 205
 Phe Glu Tyr Phe Asn Glu Phe Gly Leu Asn Glu Tyr Val Asn Phe Leu
 210 215 220
 Arg Asp Lys Lys Asp Met Arg Asn Ser Thr Ile Gly Lys Gln Met Gly
 225 230 235 240
 Phe Leu Lys Trp Phe Leu Arg Trp Ser Phe Lys Lys Gly His His Gln
 245 250 255
 Asn Ile Ala Tyr Asp Thr Phe Lys Pro Lys Leu Lys Thr Thr Ser Lys
 260 265 270
 Lys Val Ile Phe Leu Thr Trp Asp Glu Leu Asn Arg Leu Lys Asp Tyr
 275 280 285
 Arg Ile Pro Lys Asp Lys Gln Tyr Leu Glu Arg Val Arg Asp Val Phe
 290 295 300
 Leu Phe Cys Cys Phe Thr Ser Leu Arg Tyr Ser Asp Val Arg Asn Leu
 305 310 315 320
 Lys Arg Ser Asp Val Lys Pro Asp His Ile Glu Val Thr Thr Val Lys
 325 330 335
 Thr Ala Asp Ser Leu Ile Ile Glu Leu Asn Asp His Ser Lys Thr Ile
 340 345 350
 Leu Glu Lys Tyr Lys Glu Val His Phe Glu Asn His Met Ala Leu Pro
 355 360 365
 Val Ile Ser Asn Gln Lys Met Asn Asp Tyr Leu Lys Glu Leu Gly Glu
 370 375 380
 Leu Ala Glu Ile Asn Glu Pro Val Arg Glu Thr Tyr Tyr Lys Gly Asn
 385 390 395 400
 Glu Arg Ile Asp Glu Val Thr Pro Lys Tyr Ala Leu Leu Thr Thr His
 405 410 415
 Ala Gly Arg Arg Thr Phe Ile Cys Asn Ala Leu Ala Leu Gly Ile Pro
 420 425 430
 Ala Gln Val Val Met Lys Trp Thr Gly His Ser Asp Tyr Lys Ala Met
 435 440 445
 Lys Pro Tyr Ile Asp Ile Ala Asp Asp Ile Lys Ala Asn Ala Met Asn
 450 455 460
 Lys Phe Asn Gln Leu
 465

<210> 9155

<211> 713

<212> PRT

<213> B.fragilis

<400> 9155

Leu Arg Lys Ser Arg Trp Gln Met Gln Arg Leu Phe Leu Leu Arg Leu
 1 5 10 15

Gln Ile Pro Pro Ile Cys Pro Ile Ile Met His Ile Trp Leu Ile Trp
 20 25 30
 Asn Ser Lys Pro Tyr Lys Arg Ile Val Thr Met Lys Gln Ile Leu His
 35 40 45
 Ile Leu Leu Ile Ala Leu Met Leu Met Gly Phe Tyr Ser Cys Val Pro
 50 55 60
 Lys Thr Glu Leu Ala Ser Pro Asp Gly His Ile Lys Val Ala Phe Thr
 65 70 75 80
 Ala Asp Thr Asp Gly Lys Met Met Tyr Arg Val Thr Val Asn Asp Thr
 85 90 95
 Leu Leu Leu Asp Asn Ser Pro Leu Gly Phe Glu Ala Lys Glu Gly Ile
 100 105 110
 Asp Leu Asn Arg Gly Phe Arg Val Val Asn Thr Val Phe Thr Asp Lys
 115 120 125
 Asp Glu Ile Trp Thr Gln Pro Trp Gly Glu Asn Lys Thr Asn Arg Asn
 130 135 140
 His Tyr Asn Glu Met Ala Val Leu Leu Lys Asn Ala Ala Asn Val Glu
 145 150 155 160
 Leu Thr Leu Arg Phe Arg Ala Phe Asp Asp Gly Val Ala Phe Arg Tyr
 165 170 175
 Glu Tyr Glu Val Pro Gly Val Asp Ser Leu Leu Ile Thr Asp Glu Leu
 180 185 190
 Thr Ala Phe His Phe His Glu Asp Gly Thr Ser Trp Ser Ile Pro Ala
 195 200 205
 Ser Phe Glu Thr Tyr Glu Leu Leu Tyr Ser Lys Gln Lys Ile Ser Glu
 210 215 220
 Val Glu Asn Ala Asn Thr Pro Phe Thr Phe Lys Thr Ser Gly Gly Val
 225 230 235 240
 Tyr Gly Ser Ile His Glu Ala Ala Leu Tyr Asp Phe Pro Glu Met Thr
 245 250 255
 Leu Lys Lys Asp Gly Glu Asn Thr Leu Lys Ser Glu Leu Ala Ser Trp
 260 265 270
 Pro Asp Gly Ile Lys Ala Arg Lys Glu Asn Arg Phe Thr Thr Ala Trp
 275 280 285
 Arg Thr Ile Gln Ile Ala Pro Gln Ala Val Gly Leu Ile Asn Ser Ser
 290 295 300
 Leu Ile Leu Asn Leu Asn Glu Pro Cys Lys Leu Asp Thr Thr Asp Trp
 305 310 315 320
 Ile Lys Pro Met Lys Tyr Val Gly Val Trp Trp Gly Met His Leu Gly
 325 330 335
 Val Glu Thr Trp Lys Met Asp Asp Arg His Gly Ala Thr Thr Ala Asn
 340 345 350
 Ala Lys Lys Tyr Ile Asp Phe Ala His Ala Asn Asn Ile Glu Gly Val
 355 360 365
 Leu Phe Glu Gly Trp Asn Glu Gly Trp Glu Ser Trp Gly Gly Met Gln
 370 375 380
 Ser Phe Asp Phe Thr Lys Pro Tyr Ala Asp Phe Asp Met Asp Glu Ile
 385 390 395 400
 Thr Arg Tyr Ala Arg Glu Lys Asn Val Gln Ile Ile Gly His His Glu
 405 410 415
 Thr Gly Gly Asn Ile Pro Asn Tyr Glu Arg Gln Met Glu Lys Ala Ile
 420 425 430
 Lys Trp Tyr Thr Asp Lys Gly Ile His Ile Leu Lys Thr Gly Tyr Ala
 435 440 445
 Gly Ala Phe Pro Asp Gly His Ser His His Gly Gln Tyr Gly Val Asn
 450 455 460
 His Tyr Gln Lys Val Val Glu Thr Ala Ala Arg Tyr Arg Met Thr Leu
 465 470 475 480
 Asp Ala His Glu Pro Ile Lys Asp Thr Gly Ile Arg Arg Thr Trp Pro

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<210> 9156
<211> 620
<212> PRT
<213> B.fragilis
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Leu	Lys	Met	Ser	Ile	Met	Asp	Asn	Lys	Gly	Phe	Tyr	Ile	Lys	Ala	Ile
1				5					10					15	
Leu	Ala	Thr	Gly	Thr	Lys	Val	Gln	Asp	Ser	Arg	Val	Asp	Phe	Asn	Lys
			20					25					30		
Gly	Cys	Asn	Leu	Ile	His	Gly	Gln	Ser	Asp	Thr	Gly	Lys	Ser	Val	Val
		35					40					45			
Phe	Ser	Ile	Ile	Gln	Tyr	Leu	Leu	Gly	Gln	Glu	Asp	Pro	Pro	Lys	Glu
	50					55					60				
Ala	Thr	Glu	Gly	Lys	Glu	Tyr	Asp	Thr	Phe	Tyr	Met	Gln	Ile	Cys	Met
65					70					75					80
Tyr	Phe	Asn	Asp	Glu	Asp	Val	Tyr	Thr	Ile	Gln	Arg	Lys	Leu	Thr	Asp
				85					90					95	
Lys	Thr	Lys	Val	Tyr	Val	Lys	His	Cys	Ser	Ile	Asp	Gln	Ile	His	Asp
			100					105					110		
Met	His	Ile	Lys	Gln	Glu	Ile	Tyr	Ser	Val	Lys	Ser	Ser	Glu	Lys	Pro
		115					120					125			
Ser	Ser	Tyr	Ser	Ser	Phe	Leu	Leu	Lys	Leu	Cys	Gly	Phe	Asp	Asn	Thr
	130					135					140				
Ile	Lys	Ile	Lys	Gln	Lys	Asp	Ser	Lys	Phe	Ser	Asn	Leu	Tyr	Tyr	Thr
145					150					155					160
Gln	Leu	Arg	His	Leu	Leu	Met	Leu	Gly	Glu	Gln	Arg	Ile	Val	Asp	Asp
				165					170					175	
Arg	Ser	Ile	Phe	Leu	Pro	Ser	Gly	Ile	Pro	Ser	Asp	Val	Thr	Lys	Glu

<213> B.fragilis

<400> 9157

His Pro Ser Ser Ile Arg Leu Leu Met Leu Gly Met Ser Ala Leu Gly
 1 5 10 15
 Thr Leu Tyr Ala Pro Gln Pro Ser Asn Ala Ile Asn Thr Thr Cys Phe
 20 25 30
 Ala Cys Arg Leu Ala Ala Gln Ala Thr Leu Gln Asn Pro Ile Ala Ser
 35 40 45
 Lys His Thr Lys Thr Asn Asn Phe Phe Met Val Phe Tyr Leu Tyr Leu
 50 55 60
 Ser Phe Val Phe Cys Val Ser Ser Ile Leu
 65 70

<210> 9158

<211> 169

<212> PRT

<213> B.fragilis

<400> 9158

Gln Leu Thr Phe Tyr Ile Asn Leu Lys His Leu Thr Met Lys Lys Val
 1 5 10 15
 Ile Met Leu Ala Ala Val Val Ala Ala Leu Val Ser Cys Gln Ser Lys
 20 25 30
 Gly Thr Lys Ala Glu Glu Ala Val Ala Asp Ser Leu Ala Val Ala Met
 35 40 45
 Glu Pro Thr Met Glu Glu Thr Gln Val Tyr Glu Gly Val Leu Pro Ala
 50 55 60
 Ala Asp Gly Pro Gly Ile Arg Tyr Val Leu Thr Leu Asn Thr Leu Ala
 65 70 75 80
 Asn Ala Thr Asp Thr Thr Tyr Thr Leu Asp Val Thr Tyr Leu Asp Ala
 85 90 95
 Glu Gly Lys Gly Lys Asp Lys Thr Phe Thr Ser Lys Gly Lys Pro Val
 100 105 110
 Lys Val Glu Lys Thr Val Lys Asp Lys Lys Lys Thr Ala Ile Lys Leu
 115 120 125
 Asn Pro Ser Asp Gly Ser Glu Pro Val Tyr Phe Val Ile Ala Asn Asp
 130 135 140
 Thr Thr Leu Thr Leu Ala Asp Asp Ser Leu Glu Val Ser Glu Ser Asp
 145 150 155 160
 Leu Asn Tyr Asn Ile Ile Arg Val Lys
 165

<210> 9159

<211> 391

<212> PRT

<213> B.fragilis

<400> 9159

Gln Leu Met Phe Asn Gln Thr Asn Leu Lys Phe Arg Glu Met Lys Lys
 1 5 10 15
 Ser Ile Phe Met Phe Ala Leu Ala Thr Leu Met Ser Ala Ser Val Phe
 20 25 30
 Ala Gln Asp Asn Asp Ala Lys Arg Leu Pro Gly Tyr Lys Thr Thr Phe
 35 40 45
 Glu Gly Asn Gly Phe Trp Asn Asn Trp Phe Met Ser Ala Asn Phe Gly
 50 55 60
 Ala Gln Ser Leu Phe Ala Glu Asn Ser Lys Asp Ala Lys Phe Arg Asn
 65 70 75 80

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Thr Ile Thr Phe Met Pro Thr Leu Ser Val Gly Lys Trp Phe Asn Pro
      85                      90                      95
Tyr Trp Gly Val Arg Leu Gln Gly Thr Gly Gly Ser Leu His Gly Phe
      100                      105                      110
Thr Ser Gly Ala Asn Ser Met Leu His Tyr Gln Tyr Gly Ala Val His
      115                      120                      125
Ala Asp Phe Met Phe Gly Leu Ile Asn Phe Phe Ala Pro Tyr Lys Glu
      130                      135                      140
Asn Arg Arg Phe Asp Ile Val Pro Phe Ala Gly Ile Gly Gly Ala Phe
      145                      150                      155                      160
Ile Arg Lys Gly Asp Gln Ser Phe Thr Ile Asn Ala Gly Ile Gln Ala
      165                      170                      175
Arg Tyr Arg Ile Ser Lys Arg Phe Asp Ile Asn Val Glu Tyr Gln Gly
      180                      185                      190
Ala Ile Leu Asp Asp Asp Met Val Val Arg Gly Gly Phe Pro Asn Asp
      195                      200                      205
Gly Ile Ser Gly Leu Thr Ala Gly Val Thr Phe Arg Phe Gly Lys Thr
      210                      215                      220
Gly Phe Lys Lys Gly Tyr Ser Ser Arg Gln Tyr Asn Ala Ile Lys Ser
      225                      230                      235                      240
Asn Tyr Ser Asp Leu Glu Ala Asn Tyr Ala Thr Leu Lys Lys Glu Asn
      245                      250                      255
Ala Ala Gln Gln Ala Glu Ile Ala Glu Leu Lys Ala Arg Lys Pro Glu
      260                      265                      270
Ile Val Lys Glu Glu Thr Ile Ile Asp Asn Ser Glu Ile Lys Ala Leu
      275                      280                      285
Pro Ser Thr Ile Thr Phe Pro Phe Asn Ser Ser Lys Ile Glu Leu Ser
      290                      295                      300
Gln Glu Val Ser Ile Phe Asn Ile Ala Glu Phe Leu Lys Ala Asn Pro
      305                      310                      315                      320
Glu Ile Arg Val Arg Leu Thr Gly Tyr Ala Asp Lys Arg Gly Ser Glu
      325                      330                      335
Gln Ala Asn Arg Ile Val Ser Glu Arg Arg Ala Asn Ala Val Thr Glu
      340                      345                      350
Val Phe Val Asn Lys Tyr Gly Ile Ala Lys Asp Arg Ile Thr Thr Glu
      355                      360                      365
Phe Lys Gly Thr Ser Thr Lys Phe Glu Asn Asp Asp Trp Asn Arg Ala
      370                      375                      380
Val Val Val Glu Leu Ile Lys
      385                      390

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<210> 9160

<211> 167

<212> PRT

<213> B.fragilis

<400> 9160

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Thr Pro Asp Pro Ser Ser Asp Ala Arg Ala Val Pro Ile Tyr Gln Thr
1      5      10      15
Thr Ser Tyr Val Phe Arg Asp Ser Ala His Ala Ala Arg Phe Gly
      20      25      30
Leu Gln Asp Pro Gly Asn Ile Tyr Gly Arg Leu Thr Asn Ser Thr Gln
      35      40      45
Gly Val Leu Glu Glu Arg Ile Ala Ala Leu Glu Gly Gly Val Gly Gly
      50      55      60
Leu Ala Val Ala Ser Gly Ala Ala Ala Val Thr Tyr Ala Ile Glu Asn
      65      70      75      80
Ile Thr Arg Ser Gly Asp His Ile Val Ala Ala Lys Thr Ile Tyr Gly
      85      90      95

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Gly Thr Tyr Asn Leu Leu Ala His Thr Leu Pro Ala Tyr Gly Val Thr
 100 105 110
 Thr Thr Phe Val Asp Pro Ser Asp Leu Phe Asn Phe Glu Arg Ala Ile
 115 120 125
 Arg Glu Asn Thr Lys Ala Ile Phe Ile Glu Thr Leu Gly Asn Pro Asn
 130 135 140
 Ser Asn Ile Ile Asp Met Asp Ala Val Ala Ala Ile Ala His Lys Tyr
 145 150 155 160
 Arg Ile Pro Ala Asp Cys Gly
 165

<210> 9161
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9161
 Ser Tyr Leu Pro Leu Leu Phe Ser Trp Ile Met Arg Leu Leu Leu Ser
 1 5 10 15
 Ile Cys His Ser Glu Arg Ile Gly Arg Asn Arg Ala Gly Tyr Tyr Asp
 20 25 30
 Val Ala Met Gly Lys Gln Lys Asn Pro Tyr Thr Gly Thr Tyr Phe Lys
 35 40 45
 Asp Ser Ser Leu Tyr Tyr Arg Gln Glu Gln Ser Ala
 50 55 60

<210> 9162
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9162
 Tyr Asn Ser Pro Gly Lys Thr Thr Asn Leu Tyr His Pro Phe Phe Ile
 1 5 10 15
 Lys Leu Tyr Gln Tyr Asn Thr Arg Lys Glu Ala Pro Lys Thr Phe Ile
 20 25 30
 Pro Asp Ala Ser Arg Pro Leu Ile Tyr Asn Leu Asn Thr Ser Ile Ala
 35 40 45
 Ser His Ile Asn Leu Ser Gln Thr Arg Tyr Asn Tyr Pro Glu Ser
 50 55 60
 Asp Ser Leu Phe
 65

<210> 9163
 <211> 332
 <212> PRT
 <213> B.fragilis

<400> 9163
 Ile Ile Lys Pro Met Lys Arg Ile Tyr Leu Leu Leu Ala Ile Leu Leu
 1 5 10 15
 Gly Ser Leu Gln Leu Ala Asn Ala Gln Gln Gln Thr Leu Gln Phe Asn
 20 25 30
 Lys Asp Gly Lys Phe Lys Ile Val Gln Phe Thr Asp Val His Tyr Ile
 35 40 45
 Tyr Asn Asp Pro Arg Ser Asp Val Ser Ile Glu Arg Ile Asn Gln Val
 50 55 60
 Leu Asp Met Glu Lys Pro Asp Leu Val Leu Phe Thr Gly Asp Val Ile
 65 70 75 80

Tyr Gly Lys Pro Ala Glu Glu Gly Met Arg Thr Val Leu Asn Leu Val
 85 90 95
 Ser Lys Arg Lys Ile Pro Phe Ala Val Thr Phe Gly Asn His Asp Asn
 100 105 110
 Glu Gln Gly Leu Ser Arg Glu Glu Leu Leu Lys Ile Ile Gln Ser Val
 115 120 125
 Pro Phe Asn Leu Thr Gln Thr Thr Pro Gly Ile Ser Gly Val Thr Asn
 130 135 140
 Phe Ile Leu Pro Val Lys Ala Ser Asp Gly Lys Arg Asn Ala Thr Val
 145 150 155 160
 Leu Tyr Cys Ile Asp Ser His Ser Tyr Ser Gln Ile Lys Gly Val Asn
 165 170 175
 Gly Tyr Asp Tyr Ile Lys Phe Asp Gln Ile Gln Trp Tyr Arg Glu Asn
 180 185 190
 Ser Lys Lys Phe Thr Glu Glu Asn Asn Gly Val Pro Val Ser Ser Tyr
 195 200 205
 Ala Phe Phe His Ile Ala Leu Pro Glu Tyr Asn Gln Ala Ala Ser Ser
 210 215 220
 Glu Ser Ala Ile Leu Tyr Gly Ile Arg Lys Glu Lys Ala Cys Ala Pro
 225 230 235 240
 Gln Leu Asn Ser Gly Leu Phe Ala Ala Met Lys Glu Met Gly Asp Val
 245 250 255
 Arg Gly Val Phe Val Gly His Asp His Asp Asp Tyr Ala Val Ser
 260 265 270
 Trp Lys Gly Ile Leu Leu Ala Tyr Gly Arg Tyr Thr Gly Gly Asn Thr
 275 280 285
 Val Tyr Asn His Leu Thr Asn Gly Ala Arg Val Ile Glu Leu Asp Glu
 290 295 300
 Asn Ala Asn Ser Phe Arg Thr Trp Ile Arg Leu Lys Glu Gly Val Val
 305 310 315 320
 Gln Gln Val Thr Tyr Pro Ala Asp Phe Ile Lys Glu
 325 330

<210> 9164

<211> 257

<212> PRT

<213> B.fragilis

<400> 9164

Leu Pro Leu Pro Ile Asn Ile Gly Phe Pro Leu Ile Val Asp Asn Thr
 1 5 10 15
 Phe Gly Thr Pro Tyr Leu Ile Arg Pro Ile Glu His Gly Ala Asp Ile
 20 25 30
 Val Val His Ser Ala Thr Lys Phe Ile Gly Gly His Gly Ser Ser Leu
 35 40 45
 Gly Gly Val Ile Val Asp Ser Gly Lys Phe Asp Trp Val Ala Ser Gly
 50 55 60
 Lys Phe Pro Gln Leu Thr Glu Pro Asp Ala Ser Tyr His Gly Val Arg
 65 70 75 80
 Phe Val Asp Ala Ala Gly Ala Ala Ala Tyr Ile Val Arg Ile Arg Ala
 85 90 95
 Val Leu Leu Arg Asp Thr Gly Ala Ala Ile Ser Pro Phe Asn Ala Phe
 100 105 110
 Ile Leu Leu Gln Gly Leu Glu Thr Leu Ser Leu Arg Val Glu Arg His
 115 120 125
 Val Ala Asn Ala Leu Lys Val Ile Asp Phe Leu Val Asn His Pro Lys
 130 135 140
 Val Ala Ala Val Asn His Pro Ser Leu Pro Gly His Pro Asp His Ala
 145 150 155 160


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Ile Tyr Gln Arg Tyr Phe Pro Gly Gly Ala Gly Ser Ile Phe Thr Phe
      165      170      175
Glu Val Lys Gly Thr Glu Glu Ala Gln Lys Phe Ile Asp Ser Leu
      180      185      190
Gln Ile Phe Ser Leu Leu Ala Asn Val Ala Asp Val Lys Ser Leu Val
      195      200      205
Ile His Pro Ala Thr Thr Thr His Ser Gln Leu Asn Ala Gln Glu Leu
      210      215      220
Glu Glu Gln Gly Ile Lys Pro Gly Thr Val Arg Leu Ser Ile Gly Thr
      225      230      235      240
Glu His Ile Glu Asp Ile Ile Asp Asp Leu Arg Gln Ala Leu Glu Lys
      245      250      255
Ile

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<210> 9165
<211> 64
<212> PRT
<213> B.fragilis

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<400> 9165
Arg Gln Tyr Thr Glu Lys Gln Thr Asn Gly Lys Val Ile Pro Gln Thr
1      5      10      15
Asn Cys Pro Asp Phe Ile His Lys His Ile Ile Phe Tyr Phe Thr Lys
      20      25      30
Leu Cys Ile Phe Thr Lys Ser Asp Asn Leu Lys Ile Asn Glu Glu Ile
      35      40      45
Phe Ala Thr Asn Lys Asn Tyr Leu Tyr Phe Cys Asp Arg Phe Ala Asn
      50      55      60

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<210> 9166
<211> 60
<212> PRT
<213> B.fragilis

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<400> 9166
Gly Pro Phe Thr Gln Asn Ser Pro Met Cys Asp Thr Ser Lys Thr Pro
1      5      10      15
Thr Leu Leu Gln Thr Val Arg Cys Ser Ser Met Ile Pro Glu Tyr Ser
      20      25      30
Ile Gly Met Leu Tyr Pro Ala Asn Ser Cys Ile Leu Ala Pro Ser Ala
      35      40      45
Ile Cys Phe Ser Val Asn Gly Val Val Phe Met Lys
      50      55      60

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<210> 9167
<211> 445
<212> PRT
<213> B.fragilis

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<400> 9167
Asn Phe Pro Thr Lys Ile Ala Asp Lys Asn Glu Arg Arg Asn His Phe
1      5      10      15
Tyr Ile Thr Leu His Arg Ile His Lys Val Tyr Arg Thr Gly Pro Met
      20      25      30
Lys Lys Asn Val Leu Phe Leu Leu Leu Gly Leu Leu Thr Thr Val
      35      40      45
Ser Ala Gln Pro Thr His Arg Ile Lys Gly Thr Val Ile Asp Lys Ala
      50      55      60

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Ser Arg Gln Pro Leu Glu Phe Ile Asn Val Leu Val Leu Gly Leu Gly
65          70          75          80
Arg Gly Gly Val Thr Asp Ala Glu Gly His Phe Asn Ile Gly Glu Val
      85          90          95
Pro Pro Gly Ile Tyr Arg Leu Gln Ala Ser Ala Val Gly Tyr Lys Thr
      100         105         110
Ile Leu Thr Pro Glu Tyr Ile Val Ser Thr Lys Asp Leu Thr Ile Gln
      115         120         125
Ile Glu Thr Glu Glu Asn Leu Thr Glu Leu Glu Gly Val Thr Val Thr
      130         135         140
Ala Ser Pro Phe Arg Arg Asp Pro Glu Ser Pro Val Gly Leu Arg Ile
145          150         155         160
Ile Gly Leu Gln Glu Ile Glu Lys Ser Pro Gly Ala Asn Arg Asp Ile
      165         170         175
Ser Arg Ile Val Gln Ser Tyr Pro Gly Val Ala Phe Ser Pro Ala Gly
      180         185         190
Tyr Arg Asn Asp Leu Ile Val Arg Gly Gly Ser Pro Ser Glu Asn Arg
      195         200         205
Phe Tyr Leu Asp Gly Val Glu Ile Pro Asn Ile Asn His Phe Ser Thr
      210         215         220
Gln Gly Ala Ser Gly Gly Pro Val Gly Ile Ile Asn Ala Asp Leu Ile
225          230         235         240
Arg Glu Val Asn Phe Tyr Thr Gly Ala Phe Pro Thr Asp Arg Gly Asn
      245         250         255
Ala Met Ser Ser Val Leu Asp Phe Lys Leu Arg Asp Gly Asp Met Glu
      260         265         270
Arg Asn Ser Leu Lys Ala Thr Leu Gly Ala Ser Glu Val Ser Leu Ala
      275         280         285
Ser Asn Gly His Ile Gly Lys Lys Thr Ser Tyr Leu Val Ser Val Arg
      290         295         300
Gln Ser Tyr Leu Gln Phe Leu Phe Asp Met Leu Gly Leu Pro Phe Leu
305          310         315         320
Pro Thr Phe Thr Asp Ala Gln Phe Lys Leu Lys Thr Arg Phe Asn Ala
      325         330         335
Asn Asn Glu Leu Thr Ile Leu Gly Leu Gly Gly Ile Asp Asn Met Lys
      340         345         350
Leu Asn Thr Lys Leu Asp Gly Glu Lys Ala Glu Tyr Ile Leu Ser Tyr
      355         360         365
Leu Pro Lys Ile Gln Gln Glu Thr Phe Thr Leu Gly Ala Val Tyr Arg
      370         375         380
His Tyr Ala Gly Ile His Val Gln Ser Val Val Val Ser His Ser Tyr
385          390         395         400
Leu Asn Asn Arg Asn Thr Lys Tyr Leu Asn Asn Asp Glu Ser Ser Ala
      405         410         415
Asp Asn Leu Ser Leu Lys Leu Arg Ser Val Glu Gln Glu Thr Lys Phe
      420         425         430
Arg Ile Glu Asn Thr Ser Thr Phe Gly Lys Leu Glu Asn
      435         440         445

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<210> 9168

<211> 234

<212> PRT

<213> B.fragilis

<400> 9168

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Lys Thr Leu Thr Arg Tyr Trp His Ile Ile Lys Lys Cys Asp Ile Cys
1          5          10          15
Gly Met Ile Gln Ile Glu Thr Ile Leu Asp Ile Leu Val Lys Gly Phe
      20          25          30

```

Val Ile Gly Ile Val Val Ser Ala Pro Leu Gly Pro Val Gly Val Leu
 35 40 45
 Cys Ile Gln Arg Thr Leu Asn Lys Gly Arg Trp Tyr Gly Phe Val Thr
 50 55 60
 Gly Leu Gly Ala Ser Leu Ser Asp Ile Ala Tyr Ala Leu Leu Thr Gly
 65 70 75 80
 Tyr Gly Met Ser Phe Val Phe Asp Tyr Ile Asn Lys Asn Ile Phe Tyr
 85 90 95
 Leu Gln Leu Leu Gly Ser Ile Met Leu Leu Ala Phe Gly Ile Tyr Thr
 100 105 110
 Phe Arg Ser Asn Pro Val Gln Ser Ile Arg Pro Val Ser Ala Asn Lys
 115 120 125
 Gly Ser Tyr Phe His Asn Phe Ile Thr Ala Phe Ala Val Thr Leu Ser
 130 135 140
 Asn Pro Leu Ile Ile Phe Leu Phe Ile Gly Leu Phe Ala Arg Phe Ala
 145 150 155 160
 Phe Val Gln Pro Gly Val Leu Val Phe Glu Glu Ile Thr Gly Tyr Leu
 165 170 175
 Ala Ile Ala Leu Gly Ala Leu Ala Trp Trp Phe Gly Ile Thr Phe Phe
 180 185 190
 Val Asn Lys Val Arg Thr Arg Phe Asn Leu Arg Gly Ile Trp Ile Leu
 195 200 205
 Asn Arg Val Ile Gly Ser Ile Val Met Ala Val Ser Val Phe Gly Leu
 210 215 220
 Ile Phe Thr Leu Leu Gly Glu Ser Ile Tyr
 225 230

<210> 9169

<211> 103

<212> PRT

<213> B.fragilis

<400> 9169

Lys Lys Gly Thr Ile Ser Leu Gln Lys Gln Pro Pro Leu Arg Asp Leu
 1 5 10 15
 Gly Tyr Lys Ile Phe Leu Leu Ser Ile Arg Leu Arg Ser Gln Tyr Tyr
 20 25 30
 Ile Val Ile Leu Thr Phe Ile Ile Glu Thr Phe Gly Lys Ser Glu Tyr
 35 40 45
 Arg Lys Asn Leu Ser Tyr Ile Ile Val Arg Thr Lys Ser Thr Gly Lys
 50 55 60
 Thr Val Leu Leu Gln Leu Cys Ile Arg Asn Asn Glu Met Asn Ile Lys
 65 70 75 80
 Met Phe Phe Lys Thr Leu His Tyr Phe Leu Lys Cys Gly Leu Phe Glu
 85 90 95
 Phe Gln Phe Ser Val Asn Pro
 100

<210> 9170

<211> 106

<212> PRT

<213> B.fragilis

<400> 9170

Ile Asp Trp Thr Met Thr Asn Leu Gln Glu Leu Leu Leu Lys Pro Val
 1 5 10 15
 Trp Gln Met Thr Gly Glu Glu Phe Ile Phe Leu Ser Lys Tyr Ala Ser
 20 25 30
 Asn Gln Thr Glu Ala Gln Pro Gln Pro Val Thr Asp Thr Glu Arg Lys

```

      35              40              45
Tyr Val Tyr Gly Ile Leu Gly Ile Ala Lys Leu Phe Gly Cys Ser Leu
  50              55              60
Pro Thr Ala Asn Arg Ile Lys Lys Ser Gly Lys Ile Asp Lys Ala Ile
  65              70              75              80
Thr Gln Ile Gly Arg Lys Ile Ile Val Asp Ala Glu Leu Ala Leu Glu
      85              90              95
Leu Ala Gly Lys Lys Thr Gly Gly Arg Lys
      100              105

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<210> 9171

<211> 442

<212> PRT

<213> B.fragilis

<400> 9171

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Ile Ile Phe Ala Thr Thr Ile Asn Ile Arg Met Glu Asn Asn Arg Glu
  1              5              10              15
Tyr His Ile Gly Arg Thr Asp Phe Asp Ala Phe Val His Ala Val Gly
      20              25              30
Ser Glu Ile Glu Gln Ala Gln Val Arg Leu Ile Ala Ala Asn Ala
      35              40              45
Gln Met Leu Phe His Tyr Trp Lys Met Gly Asn Tyr Ile Leu Tyr His
      50              55              60
Gln Asn Leu Gln Gly Trp Gly Ser Lys Ile Ile Lys Gln Leu Ala Lys
      65              70              75              80
Ala Ile Arg Phe Asn Tyr Pro Glu Lys Lys Gly Tyr Ser Glu Arg Asn
      85              90              95
Leu Thr Tyr Met Cys Gln Phe Ala Arg Ser Tyr Pro Leu Asn Val Leu
      100              105              110
Arg Ser Phe Ile Asp Thr Asp Thr Arg Leu Ser Val Pro Ser Ile Gln
      115              120              125
Asn Val Thr Asp Glu Val Leu Lys Leu Asn Asn Gly Gln Phe Thr Gln
      130              135              140
Glu Leu Thr Ala Gln Ile Gln Ser Ala Asp Cys Gln Ser Leu Glu Ile
      145              150              155              160
Thr Gln Glu Val Pro Ala Gln Ile Gln Asp Val Glu Lys Thr Val Ser
      165              170              175
Ala Ile Tyr Arg Met Glu Ile Arg Glu Ile Glu Lys Val Phe Leu Lys
      180              185              190
Ser Pro Val Ala Lys Ile Asn Trp Ala Ser Gln Met Val Ile Leu Asn
      195              200              205
Gly Ser Leu Pro Leu Gly Ile Gly Tyr Trp Tyr Met Lys Gln Ala Val
      210              215              220
Glu Met Gly Trp Ser Ser Asn Val Leu Lys Met Gln Ile Glu Asn Asn
      225              230              235              240
Leu Tyr Asn Arg Gln Ile Asn Asn Asn Lys Val Asn Asn Phe Thr Ala
      245              250              255
Thr Leu Pro Ala Pro Gln Ser Asp Leu Ala Asn Tyr Leu Leu Lys Asp
      260              265              270
Pro Tyr Ile Phe Asp Leu Ala Gly Ala Lys Glu Lys Ala Asp Glu Arg
      275              280              285
Asp Ile Glu Glu Gln Leu Val Lys His Val Thr Arg Tyr Leu Leu Glu
      290              295              300
Met Gly Asn Gly Phe Ala Phe Val Ala Arg Gln Lys His Phe Gln Ile
      305              310              315              320
Gly Asn Ser Asp Phe Phe Ala Asp Leu Ile Leu Tyr Ser Ile Pro Leu
      325              330              335
His Ala Tyr Ile Val Val Glu Leu Lys Ala Thr Pro Phe Lys Pro Glu

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340 345 350
 Tyr Ala Gly Gln Leu Asn Phe Tyr Ile Asn Val Val Asp Asp Lys Leu
 355 360 365
 Arg Gly Lys Asn Asp Asn Lys Thr Ile Gly Leu Leu Leu Cys Lys Gly
 370 375 380
 Lys Asp Glu Val Val Ala Gln Tyr Ala Leu Thr Gly Tyr Asp Gln Pro
 385 390 395 400
 Ile Gly Ile Ser Asp Tyr Gln Leu Ser Lys Ala Ile Pro Glu Asn Leu
 405 410 415
 Lys Ser Ala Leu Pro Ser Val Glu Glu Val Glu Glu Glu Leu Ala Ser
 420 425 430
 Phe Leu Asp Lys Asp Asn Asn Pro Gln Asn
 435 440

<210> 9172
 <211> 268
 <212> PRT
 <213> B.fragilis

<400> 9172
 Asp Asn Ser Ala Thr Tyr Thr Gly Leu Cys Leu Gly His Leu Pro Lys
 1 5 10 15
 Lys Val Phe Phe Leu Ser Glu Met Ser Gln Gln Phe Val Glu Asp Tyr
 20 25 30
 Met Phe Trp Leu Leu Thr Lys Lys Gly Cys Ser His Asn Thr Ser Thr
 35 40 45
 Lys Tyr Leu Lys Asn Phe Lys Lys Ile Ile Leu Leu Ser Leu Ala Lys
 50 55 60
 Gly Trp Leu Lys Lys Asp Pro Phe Ala Glu Tyr Lys Phe Thr Leu Glu
 65 70 75 80
 Ala Val Asp Arg Asp Phe Leu Glu Asp Ser Glu Ile Gln Lys Ile Leu
 85 90 95
 Ser Lys Glu Ile Ala Ile Ser Arg Leu Val Gln Val Arg Asp Thr Phe
 100 105 110
 Ile Phe Cys Cys Phe Thr Gly Leu Ala Phe Ser Asp Val Lys Gln Leu
 115 120 125
 Lys Gln Glu Asp Ile Val Glu Asp Ser Asn Gly Val Lys Trp Ile Arg
 130 135 140
 Lys Glu Arg Gln Lys Thr Lys Ile Ile Cys Asn Ile Pro Leu Arg Asp
 145 150 155 160
 Ile Pro Leu Gln Ile Leu Lys Lys Tyr Glu Asn Asn Pro Gln Cys Val
 165 170 175
 Ile Lys Gly Val Leu Leu Pro Ile Leu Cys Asn Gln Lys Met Asn Ala
 180 185 190
 Tyr Leu Lys Glu Leu Gly Asp Ile Cys Gly Val Asn Lys Thr Ile Thr
 195 200 205
 Met His Thr Ala Arg His Thr Phe Ala Thr Tyr Ala Leu Ala Asn Gly
 210 215 220
 Val Ser Met Glu Ser Val Ala Lys Met Leu Gly His Thr Asn Leu Gln
 225 230 235 240
 Met Thr Arg His Tyr Ala Arg Thr Leu Asp Arg Ile Val Val Lys Glu
 245 250 255
 Leu Phe Gln Ile Lys Asp Asn Phe Glu Met Ala Asn
 260 265

<210> 9173
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 9173

Ser Ala Asp Ala Ile Gln Phe Ala Gly Tyr Leu Asp Phe Glu Pro Gly
 1 5 10 15
 Asp Trp Gln Tyr Arg Asp Gly Ser Ile Arg Val Arg Thr His Ile His
 20 25 30
 Phe Ala Gly Arg Ile Tyr Leu Leu Ile Gly Glu Lys Thr Glu Asp Glu
 35 40 45
 Asn Ser Ala Thr Thr Gln Gly Glu Glu His Cys Arg Ile Pro Tyr Leu
 50 55 60
 Tyr Val Ala Asp Arg Gly Phe Asp Pro Cys Gln
 65 70 75

<210> 9174

<211> 331

<212> PRT

<213> B.fragilis

<400> 9174

Gly Leu Ser Ala Leu Pro Leu Phe Leu Cys Trp Leu Leu Ser Arg Pro
 1 5 10 15
 Glu Ala Ile Ile Gly Asn Ile Ser Ala Thr Ile Val Gly Lys Leu Ser
 20 25 30
 Lys Ser Arg Leu Arg Asn Ser Thr Leu Leu Leu Trp Lys Arg Lys Ile
 35 40 45
 Glu Lys Thr Asn Ser Lys Lys His Arg Leu Lys Met Lys Arg Arg Asn
 50 55 60
 Leu Phe Leu Ala Cys Leu Leu Leu Phe Val Leu Pro Leu Ser Ala Ala
 65 70 75 80
 Arg Val Asp Thr Leu Met Val Lys Ser Pro Ser Met Asn Lys Glu Val
 85 90 95
 Gln Val Leu Val Val Thr Pro Asp Val Ala Leu Gly Lys Asn Ala Ala
 100 105 110
 Ala Cys Pro Val Leu Tyr Leu Leu His Gly Tyr Gly Gly His Ala Lys
 115 120 125
 Thr Trp Ile Gln Ile Lys Pro Asn Leu Pro Glu Ile Ala Asp Glu Lys
 130 135 140
 Gly Ile Ile Phe Val Cys Pro Asp Gly Lys Asp Ser Trp Tyr Trp Asp
 145 150 155 160
 Ser Pro Lys Asn Pro Ala Tyr Arg Tyr Glu Thr Phe Val Ser Ser Glu
 165 170 175
 Leu Val Asn Tyr Ile Asp Arg Asn Tyr Lys Thr Ile Ala Asp Arg Lys
 180 185 190
 Gly Arg Ala Ile Thr Gly Leu Ser Met Gly Gly His Gly Ala Met Trp
 195 200 205
 Leu Gly Ile Arg His Lys Asp Val Phe Gly Ala Ala Gly Ser Thr Ser
 210 215 220
 Gly Gly Val Asp Ile Arg Pro Phe Pro Lys Asn Trp Ser Met Asn Lys
 225 230 235 240
 Gln Leu Gly Glu Leu Ala Ser Asn Lys Arg Ile Trp Asp Glu His Thr
 245 250 255
 Val Val Asn Gln Leu Asp Lys Ile Gln Asn Gly Asp Leu Ala Leu Ile
 260 265 270
 Ile Asp Cys Gly Glu Asp Asp Phe Phe Leu Asn Val Asn Lys Asp Phe
 275 280 285
 His Asp Arg Leu Leu Gly Arg Lys Ile Asp His Asp Phe Ile Thr Arg
 290 295 300
 Pro Gly Glu His Asn Gly Lys Tyr Trp Asn Asn Ser Ile Asp Tyr Gln
 305 310 315 320

Ile Leu Phe Phe Ser Lys Phe Phe Ala Gly Glu
 325 330

<210> 9175

<211> 62

<212> PRT

<213> B.fragilis

<400> 9175

Met Val Lys Ala Ile Pro Ile Ile Ile Lys Gly Arg Gly Ile Lys Asn
 1 5 10 15
 Lys Ala Ala Ile Ala Asn Glu Thr Ile Val Thr Val Ser Cys Leu Asp
 20 25 30
 Thr Arg Glu Val Asn Asn Ser Glu Tyr Gly Ser Glu Leu Val Ser Thr
 35 40 45
 Ser Leu Arg Ser Ala Ser Cys Pro Ile Thr Lys Ala Val Phe
 50 55 60

<210> 9176

<211> 431

<212> PRT

<213> B.fragilis

<400> 9176

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190
 Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
 195 200 205
 Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
 210 215 220
 Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
 225 230 235 240
 Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
 245 250 255
 Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
 260 265 270
 Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile

275	280	285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu		
290	295	300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg		
305	310	315
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe		
325	330	335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe		
340	345	350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn		
355	360	365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu		
370	375	380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val		
385	390	395
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr		
405	410	415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly		
420	425	430

<210> 9177

<211> 746

<212> PRT

<213> B.fragilis

<400> 9177

Leu Ile Asn Phe Met Glu Leu Asn Lys Thr Phe Lys Asp Gly Leu Trp	
1	15
Ser Lys Glu Ile Asn Val Arg Asp Phe Val Ser Asn Asn Ile Thr Pro	
20	30
Tyr Lys Gly Asp Ala Ser Phe Leu Gln Gly Pro Thr Glu Arg Thr Lys	
35	45
Ala Val Trp Asn His Cys Leu Lys Ala Leu Glu Glu Glu Arg Asn Asn	
50	60
Asn Gly Ile Arg Ala Leu Asp Tyr Thr Thr Val Ser Thr Ile Thr Ser	
65	80
His Pro Ala Gly Tyr Ile Asp Lys Glu Asn Glu Leu Ile Val Gly Leu	
85	95
Gln Thr Asp Gln Val Leu Lys Arg Ala Ile Lys Pro Phe Gly Gly Ile	
100	110
Asn Val Val Met Lys Ala Cys Arg Glu Asn Gly Val Glu Val Asp Asp	
115	125
Arg Val Lys Asp Ile Phe Thr His Tyr Arg Lys Thr His Asn Asp Gly	
130	140
Val Phe Asp Val Tyr Thr Glu Glu Ile Arg Ser Phe Arg Ser Leu Gly	
145	160
Phe Leu Thr Gly Leu Pro Asp Asn Tyr Ala Arg Gly Arg Ile Ile Gly	
165	175
Asp Tyr Arg Arg Leu Ala Leu Tyr Gly Leu Asp Arg Leu Ile Glu Ala	
180	190
Lys Lys Glu Asp Leu His Asn Leu Thr Gly Pro Met Thr Glu Ala Arg	
195	205
Ile Arg Leu Arg Glu Glu Val Ala Glu Gln Ile Lys Ala Leu Lys Glu	
210	220
Ile Lys Val Leu Gly Glu Tyr Tyr Gly Leu Asp Leu Ser Arg Pro Ala	
225	240
Tyr Thr Ala Gln Glu Ala Val Gln Trp Val Tyr Met Ala Tyr Leu Ala	
245	255
Ala Val Lys Glu Gln Asp Gly Ala Ala Met Ser Leu Gly Asn Val Ser	

	260		265		270										
Ser	Phe	Leu	Asp	Ile	Tyr	Leu	Glu	Tyr	Glu	Leu	Ser	Gln	Gly	Thr	Ile
	275						280					285			
Thr	Glu	Thr	Phe	Ala	Gln	Glu	Leu	Ile	Asp	Gln	Phe	Val	Ile	Lys	Leu
	290						295					300			
Arg	Met	Val	Arg	His	Leu	Arg	Met	Gln	Ser	Tyr	Asn	Asp	Ile	Phe	Ala
	305				310					315					320
Gly	Asp	Pro	Thr	Trp	Val	Thr	Glu	Ser	Ile	Gly	Gly	Arg	Phe	Asn	Asp
			325						330					335	
Gly	Arg	Thr	Lys	Val	Thr	Lys	Thr	Ser	Phe	Arg	Phe	Leu	Gln	Thr	Leu
			340					345					350		
Tyr	Asn	Leu	Gly	Pro	Ser	Pro	Glu	Pro	Asn	Met	Thr	Val	Leu	Trp	Ser
	355						360					365			
Pro	Glu	Leu	Pro	Glu	Gly	Phe	Lys	Ala	Phe	Cys	Ala	Gln	Val	Ser	Ile
	370				375						380				
Asp	Thr	Ser	Ser	Val	Gln	Tyr	Glu	Asn	Asp	Asp	Leu	Met	Arg	Glu	Val
	385				390				395						400
Arg	Gln	Ser	Asp	Asp	Tyr	Gly	Ile	Ala	Cys	Cys	Val	Ser	Tyr	Gln	Glu
			405						410					415	
Ile	Gly	Lys	Gln	Ile	Gln	Phe	Phe	Gly	Ala	Arg	Ala	Asn	Leu	Ala	Lys
			420					425						430	
Ala	Leu	Leu	Leu	Ala	Ile	Asn	Gly	Gly	Arg	Cys	Glu	Asn	Thr	Gly	Thr
			435				440					445			
Val	Met	Val	Lys	Asp	Ile	Pro	Val	Leu	Thr	Gly	Glu	Thr	Leu	Lys	Phe
	450					455					460				
Glu	Glu	Val	Met	Ala	Asn	Tyr	Lys	Lys	Val	Leu	Ile	Gln	Ile	Ala	Arg
	465				470					475					480
Val	Tyr	Asn	Glu	Ala	Met	Asn	Ile	Ile	His	Tyr	Met	His	Asp	Lys	Tyr
			485						490					495	
Tyr	Tyr	Glu	Lys	Ala	Gln	Met	Ala	Phe	Val	Asp	Thr	Asp	Pro	Arg	Ile
			500					505					510		
Asn	Leu	Ala	Tyr	Gly	Val	Ala	Gly	Leu	Ser	Ile	Ala	Ile	Asp	Ser	Leu
	515					520						525			
Ser	Ala	Ile	Lys	Tyr	Ala	His	Val	Lys	Ala	Arg	Arg	Asn	Asp	Ile	Gly
	530					535					540				
Leu	Thr	Glu	Gly	Phe	Asp	Ile	Glu	Gly	Ala	Phe	Pro	Cys	Phe	Gly	Asn
	545				550					555					560
Asp	Asp	Asp	Arg	Val	Asp	His	Leu	Gly	Val	Asp	Leu	Val	Tyr	Phe	Phe
			565						570					575	
Ser	Glu	Glu	Leu	Lys	Lys	Leu	Pro	Val	Tyr	Lys	Asn	Ala	Arg	Pro	Thr
			580					585					590		
Leu	Ser	Leu	Leu	Thr	Ile	Thr	Ser	Asn	Val	Met	Tyr	Gly	Lys	Lys	Thr
			595				600					605			
Gly	Ala	Thr	Pro	Asp	Gly	Arg	Ala	Lys	Gly	Ile	Ala	Phe	Ala	Pro	Gly
	610				615						620				
Ala	Asn	Pro	Met	His	Gly	Arg	Asp	Lys	Asn	Gly	Ala	Ile	Ala	Ser	Leu
	625				630					635					640
Ser	Ser	Val	Ala	Lys	Leu	Arg	Tyr	Arg	Asp	Ser	Gln	Asp	Gly	Ile	Ser
			645						650					655	
Asn	Thr	Phe	Ser	Ile	Val	Pro	Lys	Ser	Leu	Gly	Ala	Thr	Gln	Glu	Asp
			660					665					670		
Arg	Ile	Asp	Asn	Leu	Val	Thr	Met	Met	Asp	Gly	Tyr	Phe	Thr	Lys	Gly
	675						680					685			
Ala	His	His	Leu	Asn	Val	Asn	Val	Leu	Asn	Arg	Glu	Met	Leu	Gln	Asp
	690					695					700				
Ala	Met	Glu	His	Pro	Glu	Lys	Tyr	Pro	Gln	Leu	Thr	Ile	Arg	Val	Ser
	705				710					715					720
Gly	Tyr	Ala	Val	Asn	Phe	Val	Lys	Leu	Ser	Arg	Glu	His	Gln	Leu	Glu
			725						730					735	

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<210> 9178
<211> 1111
<212> PRT
<213> B.fragilis
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Lys	His	Phe	Leu	Ile	Lys	Lys	Lys	Asn	Lys	Met	Lys	Lys	Ser	Val	Lys
1				5				10						15	
His	Lys	Phe	Gln	Tyr	Leu	Leu	Phe	Phe	Leu	Leu	Ser	Met	Pro	Ala	Phe
			20					25					30		
Ile	Phe	Ala	Ser	Ala	Gln	Asp	Ile	Arg	Val	Asn	Ile	Asp	Phe	Thr	Lys
			35					40				45			
Ala	Ser	Leu	Gly	Ser	Val	Leu	Asn	Glu	Ile	Gly	Arg	Gln	Thr	Ser	Leu
			50				55				60				
Ser	Ile	Val	Tyr	Asn	Thr	Gly	Asp	Val	Asn	Pro	Thr	Gln	Pro	Val	Ser
65				70						75					80
Ile	Lys	Ala	Ser	Asn	Glu	Asn	Ile	Thr	Thr	Val	Met	Asn	Arg	Leu	Leu
				85					90					95	
Arg	Gly	Thr	Gly	Leu	Ser	Tyr	Ser	Ile	Met	Asn	Lys	His	Leu	Ile	Leu
			100					105					110		
Ser	Thr	Thr	Asp	Lys	Asn	His	Ser	Ile	Gln	Gln	Glu	Lys	Val	Thr	Val
			115				120					125			
Thr	Gly	Asn	Ile	Ser	Asp	Ala	Lys	Gly	Glu	Pro	Leu	Ile	Gly	Val	Ser
			130			135					140				
Ile	Leu	Val	Lys	Gly	Thr	Ser	Asn	Gly	Thr	Ile	Thr	Asp	Met	Asn	Gly
145				150						155					160
His	Phe	Ser	Leu	Pro	Val	Ala	Lys	Gly	Asp	Val	Ile	Glu	Ile	Ser	Tyr
				165					170					175	
Ile	Gly	Tyr	Ala	Pro	Gln	Ala	Ile	Thr	Val	Thr	Asp	Ser	Lys	Pro	Leu
			180					185					190		
Lys	Ile	Val	Met	Lys	Glu	Asp	Ala	Glu	Val	Leu	Asp	Glu	Val	Val	Val
			195				200				205				
Thr	Ala	Leu	Gly	Ile	Lys	Arg	Ala	Gln	Lys	Ala	Leu	Ser	Tyr	Asn	Val
			210			215					220				
Gln	Gln	Val	Gly	Gly	Asp	Ala	Ile	Asn	Thr	Val	Lys	Asp	Ala	Asn	Phe
225				230						235					240
Ile	Asn	Ser	Leu	Gln	Gly	Lys	Val	Ala	Gly	Val	Thr	Ile	Asn	Asn	Ser
				245					250					255	
Ala	Gly	Gly	Val	Gly	Ser	Ala	Ser	Arg	Val	Val	Met	Arg	Gly	Thr	Lys
			260					265					270		
Ser	Ile	Thr	Lys	Asp	Asn	Asn	Ala	Leu	Tyr	Val	Ile	Asp	Gly	Ile	Pro
			275				280					285			
Met	Phe	Asn	Val	Ser	Phe	Gly	Lys	Ser	Glu	Gly	Ser	Phe	Ala	Thr	Gln
			290			295					300				
Ser	Gly	Ser	Asp	Gly	Val	Ala	Asp	Leu	Asn	Pro	Asp	Asp	Ile	Glu	Ser
305				310						315					320
Ile	Asn	Met	Leu	Thr	Gly	Pro	Ser	Ala	Ala	Ala	Leu	Tyr	Gly	Asn	Ala
				325					330					335	
Ala	Ala	Asn	Gly	Val	Val	Leu	Ile								

Phe	Asn	Thr	Gly	Val	Asn	Val	Ile	Asn	Ala	Ile	Ser	Phe	Ser	Thr	Gly
				405					410						415
Thr	Lys	Lys	Asn	Gln	Thr	Tyr	Ala	Ser	Ala	Ser	Thr	Thr	Asn	Ala	Thr
			420					425					430		
Gly	Ile	Leu	Pro	Asn	Asn	Ser	Tyr	Ser	Arg	Tyr	Asn	Phe	Ser	Ile	Arg
		435					440					445			
Asn	Thr	Ala	Thr	Phe	Leu	Lys	Asp	Arg	Leu	Thr	Leu	Asp	Val	Gly	Ala
	450					455					460				
Ser	Tyr	Ile	Ile	Gln	Asn	Asp	Lys	Asn	Ile	Thr	Ala	Gln	Gly	Gln	Tyr
465					470					475					480
Phe	Asn	Pro	Leu	Pro	Ala	Leu	Tyr	Leu	Phe	Pro	Arg	Asn	Asp	Asn	Phe
			485						490					495	
Glu	Glu	Ile	Arg	Met	Phe	Glu	Arg	Tyr	Ser	Glu	Ser	Arg	Gly	Val	Asn
			500					505					510		
Val	Gln	Phe	Trp	Pro	Tyr	Gly	His	Gln	Gly	Leu	Ser	Leu	Gln	Asn	Pro
		515					520					525			
Tyr	Trp	Ile	Met	Lys	Arg	Met	Asn	Arg	Lys	Thr	Glu	Lys	Lys	Arg	Tyr
	530					535					540				
Met	Ile	Asn	Ala	Ser	Leu	Thr	Tyr	Lys	Leu	Thr	Asp	Trp	Leu	Asn	Val
545					550					555					560
Ala	Gly	Arg	Val	Lys	Val	Asp	Asn	Ser	Asp	Ile	Arg	Met	Thr	Gln	Glu
			565						570					575	
Arg	Tyr	Ala	Ser	Thr	Leu	Thr	Thr	Phe	Ala	Gly	Ala	Asn	Gly	Phe	Tyr
			580					585					590		
Ser	Asp	Gln	Asn	Arg	Thr	Asp	Arg	Asn	Thr	Tyr	Ala	Asp	Met	Met	Val
		595					600					605			
Asn	Ile	Asp	Lys	Arg	Ile	Gly	Asp	Phe	Ser	Leu	Asn	Ala	Asn	Ile	Gly
	610					615					620				
Ala	Ser	Ile	Lys	Asp	Leu	Val	Tyr	Glu	Gln	Met	Gly	Asn	Glu	Gly	Asp
625					630					635					640
Leu	Ala	Gly	Ile	Pro	Asn	Phe	Phe	Thr	Val	Arg	Asn	Ile	Asn	Tyr	Glu
			645						650					655	
Ser	Asn	Tyr	Lys	Pro	Lys	Gln	Phe	Gly	Tyr	His	Asp	Gln	Ser	Gln	Gly
			660					665					670		
Val	Phe	Ala	Asn	Ile	Glu	Leu	Gly	Trp	Arg	Ser	Met	Ala	Tyr	Leu	Thr
	675						680					685			
Leu	Thr	Gly	Arg	Asn	Asp	Trp	Glu	Ser	Gln	Leu	Ala	Phe	Thr	Lys	His
	690				695						700				
Ser	Ser	Phe	Phe	Tyr	Pro	Ser	Ile	Gly	Gly	Ser	Val	Val	Leu	Ser	Glu
705				710						715					720
Met	Phe	Arg	Leu	Pro	Glu	Phe	Ile	Ser	Tyr	Ala	Lys	Leu	Arg	Gly	Ser
			725						730					735	
Tyr	Ser	Ser	Val	Ala	Ser	Ser	Phe	Glu	Arg	Tyr	Leu	Ser	Asn	Pro	Gly
			740					745					750		
Phe	Glu	Phe													

865 870 875 880
 Pro Glu Leu Arg Met Ala Val Leu Gly Ala Asp Gly Tyr Gly Pro Arg
 885 890 895
 Val Ile Leu Arg Glu Gly Gly Thr Met Gly Asp Leu Tyr Val Asp Lys
 900 905 910
 Gly Leu Arg Thr Asp Gly Asn Gly Asn Ile Trp Val Asp Ser Gln Thr
 915 920 925
 Gly Lys Val Gly Val Gln Asp Tyr Ala Glu Pro Lys Lys Ile Gly Thr
 930 935 940
 Met Asn Pro Asp Phe Asn Met Gly Phe Ser Asn Thr Phe Ser Tyr Lys
 945 950 955 960
 Gly Ile Asn Leu Gly Val Val Leu Thr Ala Arg Val Gly Gly Leu Cys
 965 970 975
 Val Ser Asn Thr Gln Gly Ile Leu Asp Tyr Tyr Gly Val Ser Lys Ala
 980 985 990
 Thr Ala Asp Ala Arg Asp Ala Gly Gly Val Trp Ile Asn Asn Gly Phe
 995 1000 1005
 Val Asp Ala Lys Ser Tyr Tyr Gln Thr Ile Gly Gly Ser Thr Gly Gly
 1010 1015 1020
 Leu Gly Gln Tyr Tyr Thr Tyr Ser Ala Thr Asn Ile Arg Leu Ser Glu
 1025 1030 1035 1040
 Leu Asn Leu Ser Tyr Thr Leu Pro Arg Lys Trp Phe Asn Asn Lys Val
 1045 1050 1055
 Gly Ile Thr Ala Gly Ile Val Gly Lys Asn Leu Trp Met Ile Tyr Cys
 1060 1065 1070
 Lys Ala Pro Phe Asp Pro Glu Met Thr Pro Ser Thr Thr Ser Asn Phe
 1075 1080 1085
 Tyr Gln Gly Val Asp Tyr Phe Met Gln Pro Ser Thr Arg Asn Ile Gly
 1090 1095 1100
 Phe Asn Val Lys Phe Gln Phe
 1105 1110

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 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9179
 Met Lys Ser Tyr Arg Leu Pro Cys Phe Val Cys Pro Val Pro Asp Lys
 1 5 10 15
 Trp Gly Val Ala Phe Val Leu Ile Pro Phe Ser Ser Phe Ser Cys Gln
 20 25 30
 Lys Glu Lys Asn Ile Pro Trp Gly Val Thr Gly Ser Phe Ala Val Gln
 35 40 45
 Val Lys Arg Glu Glu Arg Arg Cys Arg Asn Arg Ala Phe Phe Pro Gln
 50 55 60
 Lys Ala Gly Phe
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<210> 9180
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 9180
 Ala Phe His Tyr Tyr Leu Leu Pro Ser Asn Gln Lys Val Asn Ala Tyr
 1 5 10 15
 Leu Lys Glu Ile Thr Asp Ile Cys Asp Ile His Lys Asn Leu Thr Phe
 20 25 30

Arg Val Ala Arg His Met Met Ala Thr Thr Ile Cys Leu Ala Asn Gly
 35 40 45
 Met Leu Ile Glu Ser Leu Ser Lys Val Leu Gly Trp Ser Asn Ile Lys
 50 55 60
 Thr Leu Asn Phe Met Leu Arg Leu Leu Met Lys Ser
 65 70 75

<210> 9181
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 9181
 Arg Ile Ile Leu Pro Gln Leu Asp Lys Leu Arg Glu Ser Leu Asn Glu
 1 5 10 15
 Val Ala Lys Ser Leu Arg Glu Ile Leu His Lys Ile Gln Val Ser Thr
 20 25 30
 Ala Ser Lys Val Tyr Ser Asp Cys Leu Leu Ser Val Arg Leu Gly Glu
 35 40 45
 Leu Ser Gly Thr Ser Phe Ser Asn Ala Lys Asn Met Ile Asn Ser Leu
 50 55 60
 Pro Ser Leu Arg Ile Val Leu Phe Thr Ile Pro Phe Ser Thr Lys
 65 70 75

<210> 9182
 <211> 130
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 <213> B.fragilis

<400> 9182
 Tyr Lys Thr Tyr Leu Ile Met Lys Arg Lys Leu Phe Phe Met Ser Cys
 1 5 10 15
 Ile Ala Phe Pro Leu Phe Tyr Ser Ala Cys Thr Leu Lys Val Glu Lys
 20 25 30
 Cys Pro Ala Ile Gln Glu Asn Ala Ile Pro His Ser Lys Thr Ser Arg
 35 40 45
 Glu Glu His Glu Ala Lys Ser Ile Thr Leu His Glu Lys Leu His Ala
 50 55 60
 Thr Phe Ser Val Ser Arg Ser Asp Lys Pro Ser Tyr Pro Asn Tyr Tyr
 65 70 75 80
 Gly Gly Ala Phe Ile Gly Asp Asn Gly Arg Leu Ile Val Leu Val Lys
 85 90 95
 Glu Asp Leu Ser Leu Lys Gly Gly Leu Glu Lys Thr Leu Lys Val Ile
 100 105 110
 Val Phe Ser Ser Ser Ser Leu Arg Leu Phe Leu Ser Arg Thr Ile Gly
 115 120 125
 Phe Gln
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 Val Pro Gly Tyr Cys Leu Arg Thr Met Ser Arg Cys Pro Ser Arg Phe
 1 5 10 15
 Glu Lys Ile Val Tyr Gly Phe Ala Asn Lys Arg Ser Arg His Met Ile
 20 25 30

Phe Asn Arg Glu Glu Gln His Leu Met Leu Glu Gly Ser Val Leu Ser
 35 40 45
 Lys Glu Asp Val Lys Arg Leu Val Ala Cys His Thr Glu Glu Ala Ser
 50 55 60
 Gly Phe Leu Tyr Glu Leu Tyr Arg Phe Leu Glu Glu Trp Phe Ser Asp
 65 70 75 80
 Ser Pro Tyr Leu Thr Val Lys Thr Ser Gly Ser Thr Gly Thr Pro Lys
 85 90 95
 Leu Leu Lys Val Arg Lys Glu Gln Met Met Gln Ser Ala Arg Leu Thr
 100 105 110
 Cys Glu Phe Leu Gly Leu Arg Gln Gly Asp Ser Val Leu Leu Cys Met
 115 120 125
 Pro Leu Gln Tyr Ile Ala Gly Lys Met Val Val Val Arg Ala Leu Val
 130 135 140
 Ala Gly Leu Asn Leu Val Ile Arg Thr Pro Ser Gly His Pro Met Ala
 145 150 155 160
 Asp Val Asp Ile Pro Leu Arg Phe Ala Ala Met Val Pro Leu Gln Val
 165 170 175
 Tyr Asn Thr Leu Gln Val Ser Ala Glu Lys Glu Arg Leu Cys Arg Thr
 180 185 190
 Asp Ile Leu Ile Ile Gly Gly Gly Ala Ile Asp Ala Gly Leu Glu Ala
 195 200 205
 Glu Ile Arg Gln Leu Pro Val Lys Val Tyr Ser Thr Tyr Gly Met Thr
 210 215 220
 Glu Thr Leu Ser His Ile Ala Leu Arg Gln Leu Asn Gly Pro Asp Ala
 225 230 235 240
 Ser Met Leu Tyr Arg Pro Phe Pro Ser Val Arg Leu Ser Leu Ser Ser
 245 250 255
 Glu His Thr Leu Val Ile Asp Ala Pro Leu Val Cys Asp Thr Thr Leu
 260 265 270
 Val Thr Asn Asp Val Ala Glu Ile Tyr Pro Asp Gly Ser Phe Ser Ile
 275 280 285
 Leu Gly Arg Lys Asp Asn Thr Ile Asn Thr Gly Gly Ile Lys Val Gln
 290 295 300
 Ala Glu Gln Ile Glu Glu Ile Leu Arg Pro Trp Met Arg Val Pro Phe
 305 310 315 320
 Ala Ile Thr Ser Val Pro Asp Ala Arg Leu Gly Glu Ala Val Val Leu
 325 330 335
 Leu Val Glu Lys Gly Ala Asp Ala Glu Leu Pro Glu Thr Lys Met Lys
 340 345 350
 Glu Leu Leu Ser Lys Tyr Gln Leu Pro Lys Met Ile Leu Ser Val Gly
 355 360 365
 Ala Ile Pro Leu Thr Glu Thr Gly Lys Ile Asn Arg Ala Ala Cys Arg
 370 375 380
 Gln Leu Ala Leu Thr Tyr Arg Thr Asp Arg
 385 390

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<211> 70

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Cys Phe Ser Leu Lys Ala Leu Gln Arg Tyr Glu Ser Phe Phe Asn Leu
 1 5 10 15
 Gln Ile Ile Pro Gln Lys Asn Ile Arg Lys Val Tyr Leu Glu Val Ile
 20 25 30
 Thr Ala Leu Trp Leu Leu Pro Ile Asn Arg Tyr Phe Tyr Ala Ile Gln
 35 40 45

His Lys Ile Gly Pro Phe Tyr Ile Pro Lys Pro Lys Lys Gly Cys Lys
 50 55 60
 Phe Ala Arg Ser Lys Gly
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<210> 9185

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<212> PRT

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Thr Val Leu Tyr Val Thr Val Tyr Asp Ile Gly Ile Lys Asp Leu Val
 1 5 10 15
 Lys Thr Met Asp Glu Thr Lys Leu Leu Asn Tyr Leu Lys Gly Glu Ser
 20 25 30
 Asp Ala Glu Glu Cys Leu Glu Val Glu Ala Trp Tyr His Ala Ser Ala
 35 40 45
 Glu His Lys Lys Gln Leu Asp Gln Leu Tyr Tyr Met Leu Phe Val Gly
 50 55 60
 Glu Arg Lys Val Ala Met Asp Gly Val Asp Thr Glu Asn Ser Leu Ser
 65 70 75 80
 Val Leu Lys Asp Arg Ile Lys His Lys Glu Ser Glu Lys Lys Ser Val
 85 90 95
 His Arg Ile Arg Val Ser Lys Trp Lys Arg Tyr Ala Met Pro Leu Ala
 100 105 110
 Ala Phe Leu Cys Gly Leu Leu Val Ser Val Gly Ala Leu Tyr Trp Ile
 115 120 125
 Ser Ser Gly Lys Ser Ala Gly Tyr Ile Phe Ala Thr Glu Ser Gly Gln
 130 135 140
 Arg Ala Gln Ala Val Leu Pro Asp Gly Thr Lys Val Trp Leu Asn Ala
 145 150 155 160
 Ser Thr Gln Ile Val Tyr Lys Pro Ser Phe Trp Lys Arg Glu Arg Gln
 165 170 175
 Val Asp Leu Ser Gly Glu Ala Tyr Phe Glu Val Ser Arg Asn Lys Thr
 180 185 190
 Lys Pro Phe Val Val Asn Ser Asn Asp Val Arg Thr Cys Val Leu Gly
 195 200 205
 Thr Lys Phe Asn Val Arg Ala Arg Pro Ser Glu Glu Lys Val Val Thr
 210 215 220
 Thr Leu Leu Lys Gly Ser Val Lys Val Gln Leu Pro Gly Gln Ser Glu
 225 230 235 240
 Glu Glu Gly Ile Leu Leu Lys Pro Gly Gln Met Leu Ser Val Asp Thr
 245 250 255
 Arg Thr Met Gln Pro Met Leu Thr Glu Ala Asn Arg Pro Gly Asp Val
 260 265 270
 Leu Leu Trp Ile Asn Gly Lys Leu Lys Phe Glu Gln Ala Thr Leu Gln
 275 280 285
 Glu Ile Val Gln Cys Leu Glu Lys His Phe Asp Val His Phe Ile Ile
 290 295 300
 Ser Asp Ala Gln Leu Gln Lys Asp Arg Phe Thr Cys Thr Phe Ser Thr
 305 310 315 320
 Asp Asp Asp Ile Arg Gln Ile Leu Ser Ile Leu Ala Leu Thr Lys Arg
 325 330 335
 Phe Asp Tyr Lys Cys Glu Asp Asn Asn Ile Ile Leu Thr Pro Lys Thr
 340 345 350
 Asn Arg

<210> 9186

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 <212> PRT
 <213> B.fragilis

<400> 9186

Phe	Met	Ile	Tyr	Pro	Gln	Asn	Phe	Glu	Gln	Lys	Ile	Gly	Phe	Asp	Gln	1	5	10	15
Ile	Arg	Gln	Leu	Leu	Lys	Asp	Lys	Cys	Leu	Ser	Thr	Leu	Gly	Glu	Glu	20	25	30	
Arg	Val	Asn	Glu	Met	Asn	Phe	Ser	Asp	His	Phe	Glu	Glu	Val	Asp	Glu	35	40	45	
Leu	Leu	Asn	Gln	Val	Ala	Glu	Phe	Val	Arg	Ile	Ile	Gln	Glu	Glu	Asp	50	55	60	
Asn	Phe	Pro	Asp	Gln	Phe	Phe	Phe	Asp	Val	Arg	Pro	Ser	Leu	Lys	Arg	65	70	75	80
Ile	Arg	Ile	Glu	Gly	Met	Tyr	Met	Asp	Glu	Gln	Glu	Leu	Phe	Asp	Leu	85	90	95	
Arg	Arg	Ser	Leu	Glu	Thr	Ile	Arg	Asp	Ile	Ile	Arg	Phe	Leu	Gln	Arg	100	105	110	
Asn	Asp	Glu	Glu	Glu	Ser	Asp	Cys	Pro	Tyr	Pro	Ser	Leu	Lys	Lys	Leu	115	120	125	
Ala	Gly	Asp	Ile	Thr	Val	Phe	Pro	Gln	Leu	Ile	Thr	Lys	Ile	Asp	Gly	130	135	140	
Ile	Leu	Asn	Lys	Tyr	Gly	Lys	Ile	Lys	Asp	Asn	Ala	Ser	Thr	Glu	Leu	145	150	155	160
Ser	Arg	Ile	Arg	Arg	Glu	Leu	Ala	Asn	Thr	Met	Gly	Ser	Ile	Ser	Arg	165	170	175	
Ser	Leu	Asn	Ser	Ile	Leu	Arg	Asn	Ala	Gln	Ser	Glu	Gly	Tyr	Val	Asp	180	185	190	
Lys	Asp	Val	Ala	Pro	Thr	Met	Arg	Asp	Gly	Arg	Leu	Val	Ile	Pro	Val	195	200	205	
Ala	Pro	Gly	Leu	Lys	Arg	Lys	Ile	Lys	Gly	Ile	Val	His	Asp	Glu	Ser	210	215	220	
Ala	Ser	Gly	Lys	Thr	Val	Phe	Ile	Glu	Pro	Ala	Glu	Val	Val	Glu	Ala	225	230	235	240
Asn	Asn	Arg	Ile	Arg	Glu	Leu	Glu	Gly	Asp	Glu	Arg	Arg	Glu	Ile	Ile	245	250	255	
Arg	Ile	Leu	Thr	Glu	Phe	Ser	Asn	Thr	Leu	Arg	Pro	Ser	Ile	Pro	Glu	260	265	270	
Ile	Leu	Gln	Ser	Tyr	Glu	Phe	Leu	Ala	Glu	Ile	Asp	Phe	Ile	Arg	Ala	275	280	285	
Lys	Ser	His	Phe	Ala	Ile	Gln	Thr	Asn	Ser	Ile	Lys	Pro	Ser	Leu	Glu	290	295	300	
Asn	Glu	Gln	Leu	Leu	Asp	Trp	Thr	Met	Ala	Val	His	Pro	Leu	Leu	Gln	305	310	315	320
Leu	Ser	Leu	Ala	Lys	His	Gly	Lys	Lys	Val	Val	Pro	Leu	Asp	Ile	Glu	325	330	335	
Leu	Asn	Leu	Lys	Arg	Arg	Ile	Leu	Ile	Ile	Ser	Gly	Pro	Asn	Ala	Gly	340	345	350	
Gly	Lys	Ser	Val	Cys	Leu	Lys	Thr	Val	Gly	Leu	Leu	Gln	Tyr	Met	Leu	355	360	365	
Gln	Cys	Gly	Met	Leu	Val	Pro	Met	His	Glu	Arg	Ser	His	Val	Gly	Leu	370	375	380	
Phe	Gly	Ser	Ile	Phe	Ile	Asp	Ile	Gly	Asp	Glu	Gln	Ser	Ile	Glu	Asp	385	390	395	400
Asp	Leu	Ser	Thr	Tyr	Ser	Ser	His	Leu	Thr	Asn	Met	Lys	Ile	Met	Met	405	410	415	
Lys	Asn	Cys	Asn	Glu	Arg	Ser	Leu	Ile	Leu	Ile	Asp	Glu	Phe	Gly	Gly	420	425	430	

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Gly Thr Glu Pro Gln Ile Gly Gly Ala Ile Ala Glu Ala Val Leu Lys
 435 440 445
 Arg Phe Asn Ile Lys Gly Thr Phe Gly Val Ile Thr Thr His Tyr Gln
 450 455 460
 Asn Leu Lys His Phe Ala Glu Asp His Glu Gly Val Val Asn Gly Ala
 465 470 475 480
 Met Leu Tyr Asp Arg His Leu Met Gln Ala Leu Phe Gln Leu Gln Ile
 485 490 495
 Gly Asn Pro Gly Ser Ser Phe Ala Val Glu Ile Ala Arg Lys Ile Gly
 500 505 510
 Leu Pro Glu Asp Val Ile Ala Asp Ala Ser Glu Ile Val Gly Ser Glu
 515 520 525
 Tyr Ile Asn Ala Asp Lys Tyr Leu Gln Asp Ile Val Arg Asp Lys Arg
 530 535 540
 Tyr Trp Glu Gly Lys Arg Gln Thr Ile Arg Gln Arg Glu Lys His Met
 545 550 555 560
 Glu Glu Thr Ile Ala Arg Tyr Gln Ala Glu Met Glu Glu Leu Gln Lys
 565 570 575
 Ser Arg Lys Glu Ile Ile Arg Gln Ala Lys Glu Glu Ala Glu Arg Leu
 580 585 590
 Leu Gln Glu Ser Asn Ala Arg Ile Glu Asn Thr Ile Arg Thr Ile Lys
 595 600 605
 Glu Ala Gln Ala Glu Lys Glu Lys Thr Arg Leu Val Arg Gln Glu Leu
 610 615 620
 Ala Asp Phe Arg Glu Ser Ile Asp Asn Leu Thr Ser Lys Glu Gln Glu
 625 630 635 640
 Asp Lys Ile Ala Arg Lys Met Glu Lys Leu Lys Glu Lys Gln Asn Arg
 645 650 655
 Lys Lys Glu Lys Lys Gln Asn Gly Thr Lys Glu Gln Pro Ala Val Gln
 660 665 670
 Gln Thr Pro Lys Ala Thr Pro Ile Thr Glu Gly Cys Pro Val Arg Ile
 675 680 685
 Lys Gly Gln Ser Ser Val Gly Glu Val Leu Glu Ile Asn Gly Lys Asn
 690 695 700
 Ala Val Val Ala Phe Gly Ser Ile Lys Thr Thr Val Lys Thr Glu Arg
 705 710 715 720
 Leu Glu Arg Ser Asn Ala Val Pro Gln Lys Gln Glu Ser Ala Lys Ser
 725 730 735
 Ser Phe Val Ser Asn Gln Thr Gln Asp Ser Met Tyr Glu Lys Lys Leu
 740 745 750
 Asn Phe Lys Gln Asp Ile Asp Val Arg Gly Met Arg Gly Asp Glu Ala
 755 760 765
 Leu Gln Ala Val Thr Tyr Phe Val Asp Asp Ala Ile Leu Val Gly Met
 770 775 780
 Ser Arg Val Arg Ile Leu His Gly Thr Gly Thr Gly Ile Leu Arg Thr
 785 790 795 800
 Leu Ile Arg Gln Tyr Leu Gln Thr Ile Pro Gly Val Arg His Phe Ala
 805 810 815
 Asp Glu His Ile Gln Leu Gly Gly Ala Gly Ile Thr Val Val Asp Leu
 820 825 830
 Ala

<210> 9187

<211> 512

<212> PRT

<213> B.fragilis

<400> 9187

Ser Cys Pro Tyr Phe Thr Ser Phe Ser Gly Gly Thr Phe Glu Lys Val
 1 5 10 15
 Ile Ser Arg Arg Asn Leu Cys Gln His Glu Ser Phe Leu Tyr Phe Cys
 20 25 30
 Ala Ile Phe Leu Lys Thr Thr Ser Lys Lys Asn His Met Gly Gly Phe
 35 40 45
 Phe Gly Thr Val Ser Lys Thr Ser Cys Val Thr Asp Leu Phe Tyr Gly
 50 55 60
 Thr Asp Tyr Asn Ser His Leu Gly Thr Lys Arg Gly Gly Leu Ala Thr
 65 70 75 80
 Tyr Ser Glu Glu Gln Gly Phe Ile Arg Ser Ile His Asn Leu Gln Ser
 85 90 95
 Ser Tyr Phe Arg Thr Lys Phe Glu Glu Glu Leu Asp Lys Phe Lys Gly
 100 105 110
 Asn Ala Gly Ile Gly Ile Ile Ser Asp Thr Asp Ala Gln Pro Ile Ile
 115 120 125
 Ile Asn Ser His Leu Gly Arg Phe Ala Ile Val Thr Val Ala Lys Val
 130 135 140
 Thr Asn Leu Lys Glu Leu Glu Glu Glu Leu Ser Gln Asn Met His
 145 150 155 160
 Phe Ala Glu Leu Ser Ser Gly Ser Thr Asn Gln Thr Glu Leu Ile Ala
 165 170 175
 Leu Leu Ile Ile Gln Gly Lys Asn Phe Val Glu Gly Ile Glu Asn Val
 180 185 190
 Tyr Asn His Ile Lys Gly Ser Cys Ser Met Leu Leu Leu Thr Glu Asp
 195 200 205
 Gly Val Ile Ala Ala Arg Asp Lys Trp Gly Arg Thr Pro Ile Val Ile
 210 215 220
 Gly Lys Lys Glu Gly Ala Tyr Ala Ala Thr Ser Glu Ser Asn Ser Phe
 225 230 235 240
 Pro Asn Leu Asp Phe Glu Ile Glu Arg Tyr Leu Gly Pro Gly Glu Ile
 245 250 255
 Val Arg Met His Ala Asp Arg Leu Glu Gln Leu Arg Lys Pro Asp Asp
 260 265 270
 Lys Met Gln Ile Cys Ser Phe Leu Trp Val Tyr Tyr Gly Phe Pro Asn
 275 280 285
 Ser Cys Tyr Glu Gly Arg Asn Val Glu Glu Val Arg Phe Thr Ser Gly
 290 295 300
 Leu Lys Met Gly Glu Gln Asp Asp Cys Asp Ala Asp Cys Val Cys Gly
 305 310 315 320
 Ile Pro Asp Ser Gly Ile Gly Gln Ala Leu Gly Tyr Ala Glu Gly Lys
 325 330 335
 Gly Ile Pro Tyr His Arg Ala Ile Thr Lys Tyr Thr Pro Thr Trp Pro
 340 345 350
 Arg Ser Phe Thr Pro Ser Lys Gln Glu Leu Arg Ser Leu Val Ala Lys
 355 360 365
 Met Lys Leu Ile Pro Asn Arg Ala Met Leu Gln Asp Lys Arg Ile Ile
 370 375 380
 Phe Cys Asp Asp Ser Ile Val Arg Gly Thr Gln Leu His Asp Asn Val
 385 390 395 400
 Lys Ile Leu Phe Asp Tyr Gly Ala Lys Glu Val His Met Arg Ile Gly
 405 410 415
 Cys Pro Pro Leu Ile Tyr Gly Cys Pro Phe Ile Gly Phe Thr Ala Ser
 420 425 430
 Lys Ser Asp Met Glu Leu Ile Thr Arg Gln Ile Ile Lys Glu Leu Glu
 435 440 445
 Gly Asp Glu Asn Lys Asn Leu Asp Lys Tyr Ala Thr Thr Gly Ser Pro
 450 455 460
 Glu Tyr Glu Lys Met Val Gly Ile Ile Ala Lys Arg Phe Gly Leu Ser

465		470		475		480									
Ser	Leu	Lys	Phe	Asn	Thr	Ile	Glu	Thr	Leu	Ile	Glu	Ala	Ile	Gly	Leu
			485					490						495	
Pro	Lys	Cys	Lys	Val	Cys	Thr	His	Cys	Phe	Asp	Gly	Ser	Ser	Cys	Phe
			500					505						510	

<210> 9188

<211> 526

<212> PRT

<213> B.fragilis

<400> 9188

Ile	Ile	His	Leu	Lys	Ser	Ile	Phe	Asp	Ile	Met	Leu	Asp	Ser	Ala	Ile
1				5					10					15	
Lys	Glu	Gln	Leu	Arg	Thr	Ile	Phe	Ala	Ala	Leu	Glu	Ala	Asn	Tyr	Thr
			20					25					30		
Phe	Asp	Ile	Thr	Val	Ser	Pro	Gln	His	Glu	Ser	Arg	Thr	Glu	Leu	Leu
		35					40					45			
Glu	Leu	Leu	Asn	Asp	Val	Ala	Ser	Cys	Ser	Glu	Lys	Leu	Ser	Cys	Arg
	50					55					60				
Ile	Asn	Glu	Gly	Lys	Gly	Leu	Glu	Phe	Thr	Leu	Leu	Lys	Gly	Glu	His
65				70						75					80
Arg	Thr	Gly	Ile	Thr	Phe	Arg	Ala	Val	Pro	Asn	Gly	His	Glu	Phe	Ser
			85						90					95	
Ser	Leu	Leu	Leu	Ala	Ile	Leu	Asn	Thr	Asp	Gly	Lys	Gly	Lys	Asn	Phe
			100					105						110	
Pro	Asp	Glu	Gly	Ile	Cys	Asn	Arg	Val	Lys	Ser	Leu	Lys	Gly	Pro	Val
		115					120						125		
Arg	Leu	Thr	Thr	Tyr	Val	Ser	Leu	Thr	Cys	Thr	Asn	Cys	Pro	Asp	Val
	130						135					140			
Val	Gln	Ala	Leu	Asn	Ala	Met	Thr	Thr	Leu	Asn	Gly	Gln	Ile	Gln	His
145					150					155					160
Gln	Thr	Val	Asp	Gly	Ala	Ile	Asn	Gln	Ala	Glu	Val	Glu	Ala	Leu	Lys
			165						170					175	
Ile	Gln	Gly	Val	Pro	Ser	Val	Phe	Ala	Asp	Gly	Lys	Leu	Ile	His	Val
		180					185						190		
Gly	Arg	Gly	Asp	Phe	Gly	Glu	Leu	Ala	Lys	Leu	Glu	Glu	Gln	Tyr	
	195						200					205			
Gly	Thr	Glu	Thr	Asn	Ser	Ala	Glu	Thr	Ser	Ile	Lys	Lys	Tyr	Asp	Val
	210					215					220				
Ile	Val	Ala	Gly	Gly	Gly	Pro	Ala	Gly	Ser	Ala	Ala	Ala	Ile	Tyr	Ser
225					230					235					240
Ala	Arg	Lys	Gly	Leu	Asn	Val	Ala	Val	Ile	Ala	Glu	Arg	Ile	Gly	Gly
			245						250					255	
Gln	Val	Lys	Glu	Thr	Val	Gly	Ile	Glu	Asn	Leu	Ile	Ser	Val	Pro	Ser
			260					265					270		
Thr	Thr	Gly	Ser	Gln	Leu	Ala	Asp	Asn	Leu	Lys	Thr	His	Met	Ser	Gln
		275					280					285			
Tyr	Pro	Ile	Asp	Leu	Leu	Glu	His	Arg	Gln	Ile	Glu	Lys	Ile	Glu	Leu
	290					295					300				
Asp	Gly	Lys	Asp	Lys	Val	Leu	Thr	Ala	Lys	Gly	Gly	Glu	Arg	Phe	Ser
305					310					315					320
Ala	Pro	Ala	Val	Ile	Val	Ala	Thr	Gly	Ala	Ser	Trp	Arg	Lys	Leu	Asn
			325						330					335	
Val	Pro	Gly	Glu	Ala	Glu	Tyr	Ile	Gly	Arg	Gly	Val	Ala	Phe	Cys	Pro
		340						345					350		
His	Cys	Asp	Gly	Pro	Phe	Tyr	Lys	Gly	Lys	Gln	Val	Ala	Val	Val	Gly
		355					360					365			
Gly	Gly	Asn	Ser	Gly	Ile	Glu	Ala	Ala	Ile	Asp	Leu	Ala	Gly	Ile	Cys

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      370              375              380
Ser Lys Val Thr Val Leu Glu Phe Met Asp Glu Leu Lys Ala Asp Gln
385              390              395              400
Val Leu Gln Glu Lys Leu Lys Ser Leu Pro Asn Val Glu Val Leu Val
      405              410              415
His Ser Gln Thr Thr Glu Val Val Gly Asn Gly Asp Lys Val Thr Gly
      420              425              430
Ile Arg Val Lys Asp Arg Lys Thr Glu Glu Glu Arg Val Ile Ser Leu
      435              440              445
Asp Gly Ile Phe Val Gln Ile Gly Leu Val Ala Asn Ser Gly Ile Phe
      450              455              460
Arg Asp Val Val Glu Val Asn Arg Pro Gly Glu Ile Val Ile Asp Ala
465              470              475              480
His Cys Arg Thr Asn Val Pro Gly Ile Tyr Ala Ala Gly Asp Val Ser
      485              490              495
Thr Val Pro Tyr Lys Gln Ile Ile Ile Ala Met Gly Glu Gly Ala Lys
      500              505              510
Ala Ala Leu Ala Ala Phe Glu Asp Arg Met Arg Gly Glu Ile
      515              520              525

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<210> 9189

<211> 282

<212> PRT

<213> B.fragilis

<400> 9189

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Ile Leu Asn Leu Glu Thr Thr Ile Leu Leu Thr Ile Lys Thr His Lys
1              5              10              15
Met Lys Lys Arg Ile Val Phe Ile Ala Ala Leu Leu Cys Gly Met Cys
      20              25              30
Phe Thr Thr Ala Ser Ala Gln Phe Lys Ile Gly Gly Lys Lys Ile Asn
      35              40              45
Val Gly Lys Val Val Gln Ala Gly Ser Asp Ala Ala Lys Ala Ile Thr
      50              55              60
Leu Ser Asp Ser Asp Ile Ala Ala Met Ser Lys Glu Tyr Met Gln Trp
65              70              75              80
Met Asp Thr His Asn Pro Leu Thr Ala Ala Asp Ser Glu Tyr Gly Lys
      85              90              95
Arg Leu Glu Lys Leu Thr Gly His Ile Lys Glu Val Asp Gly Leu Lys
      100              105              110
Val Asn Phe Gly Val Tyr Glu Val Val Asp Val Asn Ala Phe Ala Cys
      115              120              125
Gly Asp Gly Ser Val Arg Ile Cys Ala Gly Leu Met Asp Ile Met Thr
      130              135              140
Asp Asp Glu Val Met Ala Val Val Gly His Glu Ile Gly His Val Ile
145              150              155              160
His Thr Asp Ser Lys Asp Ala Met Lys Ser Ala Tyr Leu Arg Ser Ala
      165              170              175
Val Lys Asn Ala Ala Gly Ala Ala Ser Ser Thr Val Ser Lys Leu Thr
      180              185              190
Asp Ser Glu Leu Gly Ala Met Ala Glu Ala Leu Ala Gly Ala Gln Tyr
      195              200              205
Ser Gln Lys Gln Glu Ser Glu Ala Asp Asp Tyr Gly Phe Glu Phe Ser
      210              215              220
Ile Lys His Asn Ile Asp Pro Tyr Ala Met Tyr Asn Ala Leu Asn Lys
225              230              235              240
Leu Leu Glu Leu Ser Ala Glu Ala Pro Lys Glu Ser Lys Phe Gln Lys
      245              250              255
Met Phe Ser Ser His Pro Asp Thr Ala Lys Arg Val Ala Arg Ala Lys

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260 265 270
 Glu Lys Ala Asp Asn Tyr Thr Lys Asn Lys
 275 280

<210> 9190
 <211> 874
 <212> PRT
 <213> B.fragilis

<400> 9190
 Asp Arg Thr His Asn Gly Lys Thr Asn Leu Pro Ser Asn Pro Arg Tyr
 1 5 10 15
 Glu Met Lys Thr Pro Lys Ile Leu Lys Val His Leu Leu Leu Tyr Leu
 20 25 30
 Phe Cys Leu Ser Val Ser Ala Gln Thr Thr Asp Ser Ile Val Gln Lys
 35 40 45
 Leu Ser Gln Tyr Ala Tyr Leu Ile Asp Asn Phe Ser Lys Tyr Ile Pro
 50 55 60
 Gln Glu Lys Val Tyr Met Gln Phe Asp Asn Thr Ser Tyr Tyr Gln Gly
 65 70 75 80
 Asp Asn Ile Trp Phe Lys Cys Phe Leu Val Thr Ser Asp Leu His Pro
 85 90 95
 Ala Thr Asp Leu Ser Lys Thr Leu Tyr Val Glu Leu Leu Asn Pro Gly
 100 105 110
 Gly Glu Val Ile Asp Lys Arg Thr Leu Lys Ile Glu Asn Gly Gln Cys
 115 120 125
 His Gly Asp Phe Thr Leu Gly Gln Leu Pro Phe Tyr Ser Gly Phe Tyr
 130 135 140
 Glu Ile Arg Ala Tyr Thr Lys Tyr Met Leu Asn Phe Gly Gly Asp Ile
 145 150 155 160
 Ile Phe Ser Arg Leu Leu Pro Val Phe Asp Lys Pro Lys Ala Glu Gly
 165 170 175
 Asp Phe Thr Glu Lys Glu Met Arg Lys Tyr Ala Thr Gly Asn Tyr Pro
 180 185 190
 Leu Glu Arg Pro Lys Pro Thr Lys Ser Lys Lys Val Asn Leu Lys Phe
 195 200 205
 Phe Pro Glu Gly Gly Asn Leu Val Arg Gly Ile Glu Ser Glu Val Ala
 210 215 220
 Phe Glu Ala Thr Asp Thr Tyr Gly Asn Pro Ile Thr Leu Thr Gly Ile
 225 230 235 240
 Val Ile Asn Glu Glu Lys Gln Glu Thr Ala Arg Phe Asn Val Thr His
 245 250 255
 Asp Gly Arg Gly Ile Phe Asn Tyr Thr Pro Thr Gly Glu Lys Gln Lys
 260 265 270
 Ala Ile Val Glu Phe Asn Gly Lys Lys His Gln Phe Asn Met Pro Glu
 275 280 285
 Ala Leu Pro Glu Gly Tyr Thr Leu His Ala Asp Asn Leu Ser Tyr Thr
 290 295 300
 Asp Ser Ile Glu Ile Ala Val Gln Lys Asn Ser Asn Thr Pro Ser Asp
 305 310 315 320
 Val Leu Gly Leu Ala Val Ile Ser Gly Gly Lys Leu Tyr Lys Phe Cys
 325 330 335
 Leu Ile Asp Val Glu Gly Asn Glu Thr Ile Arg Phe Lys Ile Asp Lys
 340 345 350
 Ser Lys Leu Val Pro Gly Val Ser Arg Ile Ala Leu Phe Asn Ser Asn
 355 360 365
 Gly Glu Val Leu Ser Asp Arg Leu Ile Phe Thr Tyr Pro Lys Glu Gln
 370 375 380
 Leu Ser Val Gln Val Gln Ala Asp Lys Glu Thr Tyr Asp Pro Tyr Glu

385 390 395 400
 Leu Val Asn Leu Glu Phe Thr Leu Thr Gly Lys Glu Lys Ile Pro Val
 405 410 415
 Gln Thr Pro Phe Ala Leu Ser Val Arg Asp Gly Met Asn Glu Val Glu
 420 425 430
 Ser Gly His Asn Met Leu Thr Asp Leu Leu Leu Met Ser Glu Ile Lys
 435 440 445
 Gly Tyr Val Asn Asn Pro Gln Tyr Tyr Phe Glu Ser Arg Asp Asp Thr
 450 455 460
 Arg Arg Lys Ala Ile Asp Leu Leu Leu Arg Val Gln Gly Trp Arg Arg
 465 470 475 480
 Tyr Ser Trp Lys Gln Met Thr Gly Ile Glu Ser Leu Asp Leu Lys Tyr
 485 490 495
 Gly Pro Glu Gln Gly Ile Glu Thr Arg Gly Gln Val Val Ser Phe Val
 500 505 510
 Arg Gln Leu Pro Lys Pro Asn Val Glu Val Ser Cys Phe Leu Lys Lys
 515 520 525
 Arg Gly Glu Asn Glu Glu Asn Ser Ser Phe Ile Glu Ala Ile Thr Thr
 530 535 540
 Asp Ser Leu Gly His Phe Ser Leu Ile Ser Asp Ile Tyr Gly Lys Trp
 545 550 555 560
 Asp Leu Ile Leu Ala Val Thr Val Asn Arg Lys Lys Lys Asp Tyr Arg
 565 570 575
 Ile Leu Leu Asp Arg Leu Phe Ser Pro Ala Pro Arg Lys Tyr His Tyr
 580 585 590
 Ala Asp Met Gln Val Ser Ile Ala Asn Ala Glu Lys Glu Lys Glu Leu
 595 600 605
 Met Pro Glu Val Glu Thr Thr Pro Leu Pro Glu Glu Asp Ile Glu Ala
 610 615 620
 Phe Phe Ala Ala Tyr Ala Asp Ser Leu Ala Lys Ala Asp Asn His Glu
 625 630 635 640
 Lys Asn Tyr Arg Leu Lys Glu Val Thr Ile Lys Ala Lys Lys Arg Thr
 645 650 655
 Lys Glu Lys Glu Ile Tyr Glu Ser Arg Ser Lys Ser Ile Ala Tyr Tyr
 660 665 670
 Asp Val His Ser Glu Leu Asp Asp Ile Lys Asp Ser Gly Lys Phe Ile
 675 680 685
 Gly Asp Asp Ile His Glu Leu Met Met Asn Met Asn Lys Asn Phe Ser
 690 695 700
 Pro Val Ser Gly Arg Asn Tyr Leu Tyr Tyr Lys Ser Lys Met Pro Leu
 705 710 715 720
 Phe Val Ile Asn Tyr Glu Arg Thr Arg His Thr Glu Met Asp Tyr Asn
 725 730 735
 Lys Tyr Lys Tyr Ile Arg Leu Glu Ala Ile Lys Ser Ile Tyr Ile Thr
 740 745 750
 Glu Asn Leu Ser Thr Ile Cys Gln Tyr Ala Asp Pro Arg Leu Thr Pro
 755 760 765
 Phe Asp Val Ser Asp Leu Tyr Ser Cys Ala Val Leu Ile Glu Thr Tyr
 770 775 780
 Pro Glu Gly Lys Ile Pro Thr Glu Ala Gly Lys Gly Val Arg Lys Thr
 785 790 795 800
 Trp Leu Asp Gly Tyr Ser Gln Val Lys Glu Phe Tyr His Pro Asn Tyr
 805 810 815
 Ser Val Leu Pro Pro Val Pro Asp Tyr Arg Arg Thr Leu Tyr Trp Asn
 820 825 830
 Pro Ser Val Thr Pro Asn Lys Glu Gly Lys Ala His Ile Arg Phe Tyr
 835 840 845
 Asn Asn Ser Arg Cys Arg Lys Leu Lys Ile Ser Ala Glu Thr Ile Thr
 850 855 860

Leu Gln Glu Arg Gly Ile Asn Ile Ala Met Ala Lys Arg Glu Cys Ser
 130 135 140
 Glu Ala His Phe Thr His Asn Gly Lys Arg Tyr Phe Ala Ile Ala Phe
 145 150 155 160
 Pro Asn Val Ser Gly Tyr Glu Ile Arg Asn Gln Tyr Phe Lys Gly
 165 170 175
 Cys Ile Ala Pro Lys Glu Ile Ser His Ile Lys Gln Pro Gly Thr Ala
 180 185 190
 Arg Glu Thr Cys Tyr Val Phe Glu Gly Phe Met Asp Tyr Leu Ser Phe
 195 200 205
 Leu Thr Leu Arg Leu Glu Asn Cys Pro Lys Tyr Pro Glu Leu Asp Arg
 210 215 220
 Gln Asp Tyr Met Val Leu Asn Ser Val Ala Asn Val Ser Lys Ala Ile
 225 230 235 240
 Tyr Pro Leu Gly Ser Tyr Glu Arg Ile His Cys Phe Phe Asp Asn Asp
 245 250 255
 Arg Ala Gly Met Glu Ala Met Gln Gln Ile Tyr Lys Glu Tyr Gly Arg
 260 265 270
 Asp Leu Tyr Ile Arg Asp Ala Ser Gln Thr Tyr Ser Gly Cys Lys Asp
 275 280 285
 Leu Asn Glu Tyr Leu Gln Lys Gln Thr Glu Arg Asn Arg Gln Val Gln
 290 295 300
 Ser Ala Lys Gly Val Arg Ser Gln Pro Pro Lys Lys Lys Asn Gly Phe
 305 310 315 320
 Arg Leu

<210> 9194
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 9194
 Gln Lys Leu His Asn Tyr Gln Asn Ile Arg Gln Ile Lys Glu Asn Lys
 1 5 10 15
 Thr Ile Gly Ser Gly Asp Phe Gln Tyr Ile Lys Asn Ala Cys Lys Leu
 20 25 30
 Leu Thr Tyr Arg Arg Leu His His Leu Ala Glu Arg Gln Gly Phe Glu
 35 40 45
 Pro Arg Val Pro Arg Ser Thr Thr Val Phe Lys Thr Ala Ala Ile Asp
 50 55 60
 His Ser Ala Thr Ser Pro Glu Leu Arg Leu Ser Ser Ala Phe Leu Leu
 65 70 75 80
 Lys Arg Cys Lys Gly Thr Asn His Phe Leu Thr Cys Lys Leu Phe Arg
 85 90 95
 Lys Lys Ile Leu Glu Lys Tyr Ile Trp Lys
 100 105

<210> 9195
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 9195
 Glu Lys Arg Gln Lys Met Lys Ile Ala Gln Gln Leu Lys Glu Lys Asn
 1 5 10 15
 Ile Ala Glu Tyr Leu Ile Tyr Met Trp Gln Ile Glu Asp Leu Ile Arg
 20 25 30
 Ala Asn Asp Cys Asp Val Asp Arg Ile Glu Glu Asn Ile Val Ser Arg


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<210> 9196
<211> 72
<212> PRT
<213> B.fragilis
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<210> 9197
<211> 83
<212> PRT
<213> B.fragilis
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<210> 9198
<211> 65
<212> PRT
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<213> B.fragilis

<400> 9198

Lys Ser Arg Gln Tyr Thr Asp Phe Arg Lys Ile Lys Asp Lys Val Asn
 1 5 10 15
 Tyr Pro Val Tyr Arg Gly Lys Cys Lys Leu Gln Met Leu Asp Ile Gln
 20 25 30
 Leu Asp Ile Ala Glu Asp Arg Phe Pro Val Ser Pro Leu Lys Thr Lys
 35 40 45
 Lys Gln Ser Tyr Lys Ser Leu Asn Phe Asn Asn Ser Arg Thr Phe Phe
 50 55 60
 Phe
 65

<210> 9199

<211> 310

<212> PRT

<213> B.fragilis

<400> 9199

Arg Lys Phe Lys Lys Met Asp Ile Ala Ala Leu Leu Ser Gly Gly Val
 1 5 10 15
 Asp Ser Ser Val Val Val His Leu Leu Cys Glu Gln Gly Tyr Lys Pro
 20 25 30
 Thr Leu Phe Tyr Ile Lys Ile Gly Met Asp Gly Ala Glu Tyr Met Asp
 35 40 45
 Cys Ser Ala Glu Glu Asp Ile Glu Leu Ser Thr Ala Ile Ala Arg Arg
 50 55 60
 Tyr Gly Leu Ala Leu Glu Val Val Asp Leu His Arg Glu Tyr Trp Asp
 65 70 75 80
 Asn Val Ala Ala Tyr Ala Ile Glu Lys Ile Arg Lys Gly Gln Thr Pro
 85 90 95
 Asn Pro Asp Val Met Cys Asn Lys Leu Ile Lys Phe Gly Cys Phe Glu
 100 105 110
 Gln Gln Val Gly Lys Asp Phe Asp Leu Thr Ala Thr Gly His Tyr Ala
 115 120 125
 Thr Thr Leu Gln Leu Gly Gly Lys Thr Trp Leu Gly Thr Ala Lys Asp
 130 135 140
 Pro Ile Lys Asp Gln Thr Asp Phe Leu Ala Gln Ile Asp Tyr Leu Gln
 145 150 155 160
 Val Ser Lys Leu Leu Phe Pro Ile Gly Gly Leu Met Lys His Glu Val
 165 170 175
 Arg Glu Ile Ala Leu Gln Ala Gly Leu Pro Ser Ala Cys Arg Lys Asp
 180 185 190
 Ser Gln Gly Ile Cys Phe Leu Gly Lys Ile Asn Tyr Asn Asp Phe Val
 195 200 205
 Arg Arg Phe Leu Gly Glu Lys Glu Gly Ala Val Ile Glu Phe Glu Thr
 210 215 220
 Gly Lys Lys Ile Gly Thr His Arg Gly Tyr Trp Phe His Thr Ile Gly
 225 230 235 240
 Gln Arg Lys Gly Leu Gly Leu Gly Gly Gly Pro Trp Phe Val Val Lys
 245 250 255
 Lys Asp Ile Gln Asp Asn Ile Ile Tyr Val Ser His Gly Tyr Asp Ala
 260 265 270
 Glu Gln Gln Tyr Gly Tyr Glu Phe Arg Met Lys Asp Ser Asn Phe Ile
 275 280 285
 Thr Asp Asn Pro Arg Glu Gly Ser Thr Val Glu Glu Asp Ala Leu Ile
 290 295 300
 Glu Tyr Pro Leu Tyr Thr

305

310

<210> 9200

<211> 358

<212> PRT

<213> B.fragilis

<400> 9200

Ser Leu His Asn Asp Ile Val Phe Phe Glu Leu Ile Leu Tyr Phe Phe
 1 5 10 15
 Phe Leu Ser Gly Thr Lys Ile Arg His Lys Met Ile Arg Val Lys Leu
 20 25 30
 Lys Ile Ser Ile Phe Ala Leu Ile Asp Ser Ile Ser Leu Ile Asn Gln
 35 40 45
 Arg Thr Met Thr Ile Gln Gln Leu Glu Tyr Ile Leu Ala Val Asp Gln
 50 55 60
 Phe Arg His Phe Ala Lys Ala Ala Glu Tyr Cys Arg Val Thr Gln Pro
 65 70 75 80
 Thr Leu Ser Ala Met Ile Gln Lys Leu Glu Asp Glu Leu Gly Val Lys
 85 90 95
 Leu Phe Asp Arg Ser Met Thr Pro Val Cys Pro Thr Ala Ile Gly Lys
 100 105 110
 Lys Val Leu Glu Gln Ala Arg Lys Ile Leu Ser Glu Val Ile Cys Val
 115 120 125
 Lys Glu Ile Ile Ser Glu Glu Gln His Ser Leu Ser Gly Thr Phe Arg
 130 135 140
 Leu Ala Val Leu Pro Thr Ile Ala Pro Tyr Leu Leu Pro Arg Phe Phe
 145 150 155 160
 Pro Gln Leu Met Glu Lys Tyr Pro Asp Leu Asp Ile Arg Val Met Glu
 165 170 175
 Met Lys Thr Pro Asp Ile Arg Lys Ala Leu Leu Thr Gly Glu Ala Asp
 180 185 190
 Ala Ala Ile Ile Ala Ser Met Leu Asp Asp Ala Ala Leu Thr Glu Glu
 195 200 205
 Thr Leu Phe Tyr Glu Gln Phe Leu Gly Tyr Val Ser Lys Lys Glu Pro
 210 215 220
 Leu Phe Lys His Asp Val Ile Arg Thr Ser Asp Val Thr Gly Glu Arg
 225 230 235 240
 Leu Trp Leu Leu Asp Glu Gly His Cys Phe Arg Asp Gln Leu Val Arg
 245 250 255
 Phe Cys Gln Met Glu Ala Val Lys Ile Ser Gln Met Ala Tyr Arg Leu
 260 265 270
 Gly Ser Met Glu Thr Phe Met His Met Val Glu Ser Gly Lys Gly Ile
 275 280 285
 Thr Phe Ile Pro Glu Leu Ala Val Met Gln Leu Ser Glu Glu Gln Lys
 290 295 300
 Glu Leu Val Arg Pro Phe Ala Ile Pro Arg Pro Thr Arg Gln Ile Val
 305 310 315 320
 Leu Val Thr Arg Lys Asp Phe Ile Arg Thr Ser Leu Leu Gln Val Leu
 325 330 335
 Lys Glu Glu Ile Gln Ala Ala Val Pro Lys Glu Met Leu Thr Leu Gln
 340 345 350
 Ala Val Gln Cys Leu Val
 355

<210> 9201

<211> 308

<212> PRT

<213> B.fragilis

<400> 9201

Leu Met Asn Lys Lys Pro Ile Ser Pro Val Cys Trp Val Pro Thr Val
 1 5 10 15
 Tyr Phe Ala Met Gly Leu Pro Phe Val Ala Leu Ser Met Val Ser Val
 20 25 30
 Leu Met Phe Ser Asp Met Glu Val Ser Asn Ala Gln Ile Ala Phe Trp
 35 40 45
 Thr Ser Leu Ile Met Leu Pro Trp Thr Leu Lys Pro Leu Trp Ser Pro
 50 55 60
 Phe Leu Glu Met Phe Lys Thr Lys Lys Tyr Phe Val Val Ala Thr Glu
 65 70 75 80
 Ile Ile Thr Gly Leu Ala Phe Ala Leu Val Ala Leu Ser Leu Pro Leu
 85 90 95
 Pro Asp Phe Phe Arg Tyr Ala Ile Ala Leu Met Gly Ile Ile Ala Leu
 100 105 110
 Ser Gly Ala Thr His Asp Ile Ala Gly Asp Gly Val Tyr Leu Thr Glu
 115 120 125
 Leu Thr Ala Thr Gln Gln Ala Lys Tyr Ile Gly Trp Gln Gly Ala Phe
 130 135 140
 Tyr Asn Leu Ala Lys Ile Leu Ala Asn Gly Gly Leu Val Trp Leu Ala
 145 150 155 160
 Gly Met Leu Lys Asp Glu Phe Gly Val Val His Ala Trp Met Ile Val
 165 170 175
 Met Leu Met Cys Ala Gly Ile Met Ile Leu Ile Gly Leu Tyr His Ile
 180 185 190
 Arg Ile Leu Pro Ser Gly Gly Gly Ala Ser Gly Glu Val Asn Thr Met
 195 200 205
 Ser Asp Ala Leu Asn Met Leu Trp Glu Val Ile Arg Ser Phe Phe Gln
 210 215 220
 Lys Lys His Ile Ala Phe Tyr His Ala Phe Ile Ile Trp Tyr Pro Val
 225 230 235 240
 Ala Gln Gly Ile Cys His Gln Asp Gly Thr Val Val Pro Glu Asn Val
 245 250 255
 Gly Cys Arg Met Gly Ile Gly Thr Gln His Ser Gly Tyr Arg Thr Gly
 260 265 270
 Ile Trp Tyr Val Arg Ser Gly Ser Phe Tyr Ser Arg Phe Ala Phe Gly
 275 280 285
 Arg Leu Leu His Phe Gly Phe Arg Thr Ser Glu Asp Phe Val Phe Phe
 290 295 300
 Met Leu Arg Phe
 305

<210> 9202

<211> 165

<212> PRT

<213> B.fragilis

<400> 9202

Leu Phe Asp Asn Leu Lys Lys Glu Arg Thr Met Lys Arg Ile Ser Phe
 1 5 10 15
 Leu Leu Ala Ala Leu Leu Met Met Gly Gly Met Val Met Ala Gln Gly
 20 25 30
 Pro Arg Arg Gly Gly Gln Asp Met Asp Pro Lys Thr Arg Ala Glu Arg
 35 40 45
 Met Thr Glu Arg Met Ala Lys Glu Tyr Ser Leu Asn Glu Thr Gln Lys
 50 55 60
 Lys Glu Leu Leu Glu Val Asn Met Ala Phe Val Gln Lys Met Gly Glu
 65 70 75 80

Arg Pro Gly Arg Met Lys Pro Glu Met Arg Gln Gly Lys Lys Gly Gln
 85 90 95
 Ser Gln Ala Thr Asp Ser Cys Thr Cys Lys Gln Asp Arg Arg Lys Ala
 100 105 110
 Pro Arg Met Ser Lys Glu Asp Arg Glu Lys Met Arg Gln Glu Met Lys
 115 120 125
 Ala Ser Arg Glu Ser Tyr Glu Ala Gly Leu Lys Lys Ile Met Thr Lys
 130 135 140
 Asp Gln Tyr Ala Ala Tyr Thr Lys Lys Gln Ala Glu Arg Glu Gln Arg
 145 150 155 160
 Arg Gly Gly Gly Arg
 165

<210> 9203

<211> 532

<212> PRT

<213> B.fragilis

<400> 9203

Phe Phe Ile Leu Asn Ser Arg Asn Met Ala Asp Asn Thr Glu Ile Leu
 1 5 10 15
 Arg Arg Arg Thr Phe Ala Ile Ile Ala His Pro Asp Ala Gly Lys Thr
 20 25 30
 Ser Leu Thr Glu Lys Leu Leu Leu Phe Gly Gly Gln Ile Gln Val Ala
 35 40 45
 Gly Ala Val Lys Ser Asn Lys Ile Lys Lys Thr Ala Thr Ser Asp Trp
 50 55 60
 Met Glu Ile Glu Lys Gln Arg Gly Ile Ser Val Thr Thr Ser Val Met
 65 70 75 80
 Glu Phe Asp Tyr Arg Asp Tyr Lys Ile Asn Ile Leu Asp Thr Pro Gly
 85 90 95
 His Gln Asp Phe Ala Glu Asp Thr Tyr Arg Thr Leu Thr Ala Val Asp
 100 105 110
 Ser Val Ile Ile Val Val Asp Gly Ala Lys Gly Val Glu Thr Gln Thr
 115 120 125
 Arg Lys Leu Met Glu Val Cys Arg Met Arg Asn Thr Pro Val Ile Ile
 130 135 140
 Phe Val Asn Lys Met Asp Arg Glu Gly Lys Asp Pro Phe Asp Leu Leu
 145 150 155 160
 Asp Glu Leu Glu Glu Glu Leu Met Ile Gln Val Arg Pro Leu Ser Trp
 165 170 175
 Pro Ile Glu Gln Gly Pro Arg Phe Lys Gly Val Tyr Asn Ile Tyr Glu
 180 185 190
 Gln Lys Leu Asp Leu Tyr Gln Pro Ser Lys Gln Val Val Thr Glu Lys
 195 200 205
 Val Glu Ile Asp Ile His Ser Asp Glu Leu Asp Arg Gln Ile Gly Asp
 210 215 220
 Thr Leu Ala Asp Lys Leu Arg Gly Asp Leu Glu Leu Ile Glu Gly Val
 225 230 235 240
 Tyr Pro Glu Phe Asp Val Glu Thr Tyr Leu Gln Gly Glu Cys Ala Pro
 245 250 255
 Val Phe Phe Gly Ser Ala Leu Asn Asn Phe Gly Val Gln Glu Leu Leu
 260 265 270
 Asn Cys Phe Val Glu Ile Ala Pro Ala Pro Arg Pro Val His Ala Glu
 275 280 285
 Glu Arg Glu Val Ile Pro Glu Glu Pro Lys Phe Thr Gly Phe Ile Phe
 290 295 300
 Lys Ile Thr Ala Asn Ile Asp Pro Asn His Arg Ser Cys Val Ala Phe
 305 310 315 320

Cys Lys Ile Cys Ser Gly Lys Phe Val Arg Asn Ala Pro Tyr Leu His
 325 330 335
 Val Arg His Gly Lys Thr Met Arg Phe Ser Ser Pro Thr Gln Phe Met
 340 345 350
 Ala Gln Arg Lys Thr Thr Ile Asp Glu Ala Trp Ala Gly Asp Ile Ile
 355 360 365
 Gly Leu Pro Asp Asn Gly Thr Phe Lys Ile Gly Asp Thr Leu Thr Glu
 370 375 380
 Gly Glu Gln Leu His Phe Arg Gly Leu Pro Ser Phe Ser Pro Glu Met
 385 390 395 400
 Phe Lys Tyr Ile Glu Asn Ala Asp Pro Met Lys Gln Lys Gln Leu Ala
 405 410 415
 Lys Gly Ile Asp Gln Leu Met Asp Glu Gly Val Ala Gln Leu Phe Val
 420 425 430
 Asn Gln Phe Asn Gly Arg Lys Ile Ile Gly Thr Val Gly Gln Leu Gln
 435 440 445
 Phe Glu Val Ile Gln Tyr Arg Leu Leu Asn Glu Tyr Asn Ala Ser Cys
 450 455 460
 Arg Trp Glu Pro Leu Ser Leu Tyr Lys Ala Cys Trp Ile Glu Ser Asp
 465 470 475 480
 Asp Leu Glu Glu Leu Glu Ala Phe Lys Lys Arg Lys Tyr Gln Tyr Met
 485 490 495
 Ala Lys Asp Arg Glu Gly Arg Asp Val Phe Leu Ala Asp Ser Asn Tyr
 500 505 510
 Val Leu Gln Met Ala Gln Met Asp Phe Lys Asn Ile Arg Phe His Phe
 515 520 525
 Thr Ser Glu Phe
 530

<210> 9204

<211> 257

<212> PRT

<213> B.fragilis

<400> 9204

Asp Lys Thr Asn Lys Lys Leu Met Lys Lys Phe Asn Leu Ile Thr Phe
 1 5 10 15
 Ala Val Ile Leu Met Leu Leu Pro Ile Leu Gln Ser Cys Leu Asp Asp
 20 25 30
 Ala Asn Asn Asp Glu Trp Val Thr Cys Pro Pro Gly Gly Ile Leu Ala
 35 40 45
 Ile Gly Thr Met Lys Ile Pro Asn Ala Asp Thr Pro Arg Asp Phe Phe
 50 55 60
 Ile Ala Leu Asp Asn Gly Asp Asn Val Leu Pro Ala Asp Thr Ala Asp
 65 70 75 80
 Ile Arg Asn Arg Lys Tyr Thr Val Ala Glu Gly Gln Arg Val Phe Val
 85 90 95
 Gly Tyr Leu Gln Met Gly Glu Glu Lys Pro Gly Tyr Glu Asn Gly Lys
 100 105 110
 Ile Phe Thr Ile Glu Asp Ile Leu Thr Lys Glu Ile Ile Pro Leu Thr
 115 120 125
 Glu Ala Thr Ala Asp Ser Ile Gly Asp Asp Arg Ile Asn Val Thr Ala
 130 135 140
 His Ala Leu Thr Lys Asp Tyr Leu Thr Ile Glu Tyr Gln Tyr Leu Gly
 145 150 155 160
 Ser Met Asn Glu Asn Lys Lys His Met Leu Asn Leu Val Gln Asn Glu
 165 170 175
 Ile Thr Gly Pro Ile Lys Asp Asp Gly Tyr Ile Tyr Leu Glu Phe Arg
 180 185 190

His Asn Ala Phe Asn Asp Ser Pro Asn Gln Leu Gly Ser Ser Leu Val
 195 200 205
 Ser Phe Lys Leu Asp Ser Ile Ala Glu Gln Leu Ala Thr Ala Lys Gly
 210 215 220
 Ile Lys Leu Arg Val Asn Thr Ile Tyr Asp Asn Ile Gln Tyr Val Thr
 225 230 235 240
 Ile Asp Ile Asn Glu Asp Lys Asn Leu Lys Ile Lys Ser Phe His Ser
 245 250 255
 Gln

<210> 9205

<211> 417

<212> PRT

<213> B.fragilis

<400> 9205

Asp Phe Ser Lys Leu Leu Asn Phe Lys Asp Met Asn Leu Val Glu Arg
 1 5 10 15
 Phe Leu Lys Tyr Val Ser Phe Asp Thr Gln Ser Asp Glu Leu Thr Arg
 20 25 30
 Leu Thr Pro Ser Thr Pro Gly Gln Met Val Phe Ala Glu Tyr Leu Lys
 35 40 45
 Ser Glu Leu Glu Ser Leu Gly Leu Glu Asp Ile Thr Leu Asp Glu Asn
 50 55 60
 Gly Tyr Leu Phe Ala Thr Leu Pro Ala Asn Thr Glu Lys Glu Leu Pro
 65 70 75 80
 Val Ile Gly Phe Ile Ala His Met Asp Thr Ser Pro Asp Met Ser Gly
 85 90 95
 Lys Asn Val Thr Pro Arg Ile Val Glu Lys Tyr Asp Gly Ser Asp Ile
 100 105 110
 Val Leu Cys Val Glu Glu Asn Ile Val Leu Ser Pro Ser Gln Phe Pro
 115 120 125
 Glu Leu Leu Asp His Lys Gly Glu Asp Leu Ile Val Thr Asn Gly Lys
 130 135 140
 Thr Leu Leu Gly Ala Asp Asp Lys Ala Gly Ile Ala Glu Ile Val Ser
 145 150 155 160
 Ala Val Val Tyr Leu Gln Glu His Pro Glu Ile Lys His Gly Lys Ile
 165 170 175
 Arg Ile Gly Phe Asn Pro Asp Glu Glu Ile Gly Glu Gly Ala His Lys
 180 185 190
 Phe Asp Val Gln Lys Phe Gly Cys Glu Trp Ala Tyr Thr Met Asp Gly
 195 200 205
 Gly Glu Val Gly Glu Leu Glu Phe Glu Asn Phe Asn Ala Ala Ala Ala
 210 215 220
 Lys Ile Thr Phe Lys Gly Arg Asn Val His Pro Gly Tyr Ala Lys His
 225 230 235 240
 Lys Met Ile Asn Ser Ile Arg Ile Ala Asn Gln Phe Ile Thr Met Leu
 245 250 255
 Pro Arg His Glu Thr Pro Glu His Thr Ser Gly Tyr Glu Gly Phe Tyr
 260 265 270
 His Leu Ile Gly Ile Gln Gly Asp Val Glu Gln Ser Thr Val Ser Tyr
 275 280 285
 Ile Ile Arg Asp His Asp Arg Asn Lys Phe Glu Asp Arg Lys Lys Glu
 290 295 300
 Ile Glu His Leu Val Asn Lys Ile Asn Ala Glu Phe Gly Glu Gly Thr
 305 310 315 320
 Ala Thr Leu Glu Leu Arg Asp Gln Tyr Tyr Asn Met Arg Glu Lys Ile
 325 330 335

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<210> 9206
<211> 339
<212> PRT
<213> B.fragilis
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<400>	9206														
Ile	Lys	Leu	Asn	Tyr	Ser	Val	Ala	Glu	Leu	Arg	Ile	Met	Phe	Lys	Asn
1				5					10					15	
Arg	Ser	Met	Lys	Lys	Ser	Arg	Arg	Lys	Arg	Leu	Val	Ile	Leu	Cys	Ile
			20					25					30		
Ala	Leu	Val	Cys	Ile	Ile	Val	Leu	Val	Phe	Leu	Leu	Phe	Ser	Lys	Ser
		35					40					45			
Thr	Ser	Asn	Asn	Ser	Thr	Asn	Pro	Pro	Leu	Thr	Asp	Val	Leu	Thr	Asp
	50					55					60				
Ser	Ile	Ser	Arg	Ile	Val	Ser	Ala	Cys	Pro	Gly	Glu	Ile	Gly	Val	Ala
65					70					75					80
Ile	Ile	Ile	Asn	Asn	Thr	Asp	Thr	Val	Lys	Val	Asn	Asp	Lys	Ser	Val
			85						90				95		
Tyr	Pro	Met	Met	Ser	Val	Phe	Lys	Val	His	Gln	Ala	Leu	Ala	Leu	Cys
			100					105					110		
Asn	Asp	Phe	Asp	Asn	Lys	Gly	Ile	Ser	Leu	Asp	Thr	Leu	Val	Lys	Ile
		115					120					125			
Asp	Arg	Asn	Arg	Leu	Asp	Ser	Lys	Thr	Trp	Ser	Pro	Met	Met	Lys	Asp
	130					135					140				
Tyr	Ser	Glu	Leu	Val	Ile	Ser	Leu	Thr	Val	Arg	Asp	Leu	Leu	Arg	Tyr
145					150					155					160
Thr	Ile	Ala	Gln	Ser	Asp	Asn	Asn	Ala	Ser	Asn	Leu	Met	Phe	Lys	Asp
			165					170						175	
Met	Val	Asn	Val	Ala	Gln	Thr	Asp	Ser	Phe	Ile	Ala	Thr	Leu	Ile	Pro
		180						185					190		
Arg	Ser	Ser	Phe	Gln	Ile	Ala	Tyr	Thr	Glu	Glu	Glu	Met	Ser	Ala	Asp
		195					200					205			
His	Asp	Arg	Ala	Tyr	Phe	Asn	Tyr	Thr	Ser	Pro	Leu	Gly	Ala	Ala	Met
	210					215					220				
Leu	Met	Asn	Arg	Leu	Phe	Thr	Glu	Ser	Ile	Val	Ser	Gly	Glu	Lys	Gln
225					230					235					240
Ser	Phe	Ile	Lys	Asn	Thr	Leu	Lys	Glu	Cys	Val	Thr	Gly	Thr	Asp	Arg
			245						250					255	
Ile	Val	Ala	Pro	Leu	Leu	Asp	Lys	Glu	Arg	Val	Ser	Ile	Ala	His	Lys
			260					265					270		
Thr	Gly	Ser	Gly	Tyr	Val	Asn	Glu	Asn	Gly	Ile	Leu	Ala	Ala	His	Asn
		275					280					285			
Asp	Val	Ala	Tyr	Ile	Cys	Leu	Pro	Asn	Asn	Val	Cys	Tyr	Thr	Leu	Ala
	290					295					300				
Ile	Phe	Val	Lys	Asp	Phe	Lys	Gly	Asn	Glu	Ser	Gln	Ala	Ser	Gln	Tyr
305					310					315					320

Val Ala His Ile Ser Glu Val Val Tyr Ser Leu Leu Ile Gln Asn Ser
 325 330 335
 Ala Ile Pro

<210> 9207
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 9207
 Lys Ile Gln Lys Glu Pro Phe Ser Leu Phe Ile Pro Lys Ser Phe Pro
 1 5 10 15
 Phe Leu Ser Arg Tyr Leu Gln Cys Glu Ile Val Pro Lys Leu Ile Ile
 20 25 30
 Asp Thr Lys Lys Ile Thr Ile Met Lys Lys Ile Leu Ser Ile Leu Val
 35 40 45
 Leu Ala Ile Ala Ala Val Gln Phe Ala Phe Ala Gly Asp Ile Ile Thr
 50 55 60
 Lys Asp Ala Met Lys Leu Pro Leu Pro Ala Arg Asn Phe Ile Asn Arg
 65 70 75 80
 His Phe Ser Asn Pro Gln Ile Ser His Ile Lys Ile Glu Asn Glu Ile
 85 90 95
 Leu Gln Thr Lys Lys Tyr Asp Val Leu Leu Thr Asn Ala Thr Glu Ile
 100 105 110
 Asp Phe Asp Asn Arg Gly Asn Trp Ile Glu Val Asp Cys Lys Lys Ala
 115 120 125
 Ala Val Pro Ala Thr Ile Val Pro Asp Phe Val Lys Glu Tyr Met Lys
 130 135 140
 Ala Asn Gly Tyr His Ser Glu Phe Val Thr Gln Ile Glu Arg Asp Arg
 145 150 155 160
 Lys Gly Tyr Glu Val Glu Leu Asn Thr Asp Leu Ser Leu Lys Phe Thr
 165 170 175
 Lys Asp Gly Lys Phe Arg Lys Ala Glu His
 180 185

<210> 9208
 <211> 164
 <212> PRT
 <213> B.fragilis

<400> 9208
 Leu Lys Lys Asn Asn Ile Ile Met Lys Thr Leu Asn Tyr Thr His Leu
 1 5 10 15
 Glu Glu Lys Gly Ala Asn Thr Ile Val Leu Ser Leu Gln Gln Leu Leu
 20 25 30
 Ala Asp Phe Gln Ile His Tyr Ala Asn Leu Arg Gly Phe His Trp Asn
 35 40 45
 Ile Lys Gly His Gly Phe Phe Val Leu His Ser Lys Phe Glu Asp Leu
 50 55 60
 Tyr Asn Gly Ala Ala Glu Lys Val Asp Glu Ile Ala Glu Arg Ile Leu
 65 70 75 80
 Met Leu Gly Gly Thr Pro Ala Asn Lys Tyr Ser Asp Tyr Leu Lys Met
 85 90 95
 Ala Gln Ile Lys Glu Val Asp Gly Val Asn Lys Ala Asp Asp Ala Leu
 100 105 110
 Asn His Ile Leu Glu Thr Tyr Gly His Leu Ile Ala Glu Glu Arg Lys
 115 120 125
 Ile Leu Ser Leu Ala Ser Ser His Asn Asp Glu Val Thr Val Ala Met


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      370              375              380
Thr Thr Phe Leu Thr Pro Tyr Met Ile Arg Val Ala Glu Pro Ala Ser
385              390              395              400
Asn Phe Val Asp Arg Lys Leu Pro Glu Ser Trp Arg Arg Phe Leu Met
      405              410              415
Arg Tyr Thr Thr Gly Thr Arg Thr Val Asn His Glu Ser Leu Trp Arg
      420              425              430
Lys Leu Leu Phe Ala Leu Ala Arg Ile Leu Val Val Tyr Ser Ile Val
      435              440              445
Ser Ile Ser Val Ile Thr Leu Ser Phe Arg Phe Val Val Pro Leu Leu
      450              455              460
Arg Glu His Leu Pro Gly Ile Trp Gly Pro Leu Ala Gly Ala Val Phe
465              470              475              480
Thr Ile Leu Cys Ile Ser Pro Phe Leu Arg Ala Ile Met Val Lys Lys
      485              490              495
Asn His Ser Val Glu Phe Ile Thr Leu Trp Asn Asp Asn Arg Val Asn
      500              505              510
Arg Gly Pro Leu Val Ser Thr Val Val Phe Arg Val Ala Val Ser Val
      515              520              525
Leu Phe Val Met Phe Val Ile Thr Arg Leu Phe Lys Ala Ser Val Gly
      530              535              540
Leu Met Phe Gly Val Ala Leu Leu Leu Val Ile Leu Met Ile Leu Ser
545              550              555              560
Arg Gln Leu Lys Lys Gln Ser Ile Leu Ile Glu Arg Lys Phe Phe Gln
      565              570              575
Asn Leu Arg Ser Arg Asp Met Arg Ala Glu Tyr Leu Gly Glu Lys Lys
      580              585              590
Pro Ala Tyr Ala Gly Arg Leu Leu Ser Arg Asp Leu His Leu Thr Asp
      595              600              605
Phe Glu Ile Pro Gly Glu Ser Ala Trp Ala Gly Lys Thr Leu Leu Glu
      610              615              620
Leu Asn Leu Gly Lys Lys Tyr Gly Val His Val Val Ser Ile Leu Arg
625              630              635              640
Gly Lys Arg Arg Ile Asn Ile Pro Gly Gly Ser Ile Arg Leu Phe Pro
      645              650              655
Met Asp Lys Ile Gln Val Ile Gly Thr Asp Asp Gln Leu Asn Thr Phe
      660              665              670
Ala Glu Glu Met Ser His Val Ala Val Ile Asp Ser Gly Val Phe Glu
      675              680              685
Lys Ser Glu Met Thr Leu Lys Gln Leu Leu Ile Asp Thr Asp Ser Ala
      690              695              700
Phe Leu Gly Lys Thr Leu Arg Glu Ser Gly Ile Arg Asp Lys Tyr His
705              710              715              720
Cys Leu Ile Ala Gly Val Glu Arg Gly Gly Glu Ala Leu Met Thr Pro
      725              730              735
Asp Val Asn Val Pro Phe Glu Glu Gly Asp Val Val Trp Val Val Gly
      740              745              750
Glu Asn Glu Asp Val Tyr Arg Leu Ile Gly Gln Asn Cys Asp Arg Lys
      755              760              765
Arg

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<210> 9210

<211> 301

<212> PRT

<213> B.fragilis

<400> 9210

Asn Thr Met Lys Lys Leu Phe Val Leu Val Cys Leu Leu Ala Ile Gly

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1           5           10           15
Phe Cys Asn Val Ala Trp Ala Ala Lys Arg Gln Ala Lys His Val Val
20           25           30
Leu Ile Ala Leu Asp Gly Trp Gly Ala Tyr Ser Val Pro Lys Ala Asp
35           40           45
Ile Pro Asn Ile Lys Ser Leu Met Asp Glu Gly Cys Tyr Thr Leu His
50           55           60
Lys Arg Ser Val Phe Pro Ser Ser Ser Ala Ile Asn Trp Ala Ser Met
65           70           75           80
Phe Met Gly Val Gly Thr Glu Leu His Gly Tyr Thr Glu Trp Gly Ser
85           90           95
Arg Thr Pro Glu Ile Pro Ser Arg Val Val Asn Glu His Gly Ile Ser
100          105          110
Pro Thr Ile Phe Ser Val Met Arg Gln Gln Tyr Pro Glu Ala Glu Thr
115          120          125
Gly Cys Leu Tyr Glu Trp Glu Gly Ile Lys Tyr Leu Val Asp Thr Leu
130          135          140
Ala Leu Ser Tyr His Ala Gln Ala Ser Asp Tyr Asp Lys Tyr Pro Thr
145          150          155          160
Ala Leu Cys Glu Met Ala Glu Lys Tyr Ile Lys Asp Lys Lys Pro Ala
165          170          175
Met Leu Ala Val Cys Phe Asp Gln Leu Asp His Thr Gly His Ala Val
180          185          190
Gly His Asp Thr Pro Gly Tyr Tyr Glu Lys Leu Lys Glu Leu Asp Gly
195          200          205
Tyr Val Gly Arg Ile Ile Ala Ala Ile Lys Glu Ala Gly Ile Tyr Asp
210          215          220
Asp Thr Ile Ile Met Met Thr Ala Asp His Gly Gly Ile Lys Lys Gly
225          230          235          240
His Gly Gly Ile Thr Leu Gln Glu Val Glu Ile Pro Phe Ile Ile Ala
245          250          255
Gly Lys Asn Val Arg Lys Gly Gly Glu Phe Gln Glu Ser Met Met Gln
260          265          270
Phe Asp Thr Ala Ala Thr Met Gly Tyr Val Phe Gly Val Lys Gln Pro
275          280          285
Gln Val Trp Ile Gly Arg Pro Met Ile Gln Val Phe Lys
290          295          300

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<210> 9211

<211> 395

<212> PRT

<213> B.fragilis

<400> 9211

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Ser Asn Gln Asn Asn Glu Ser Cys Cys Lys Met Thr Leu Lys Asn Leu
1           5           10           15
Ile Met Lys Arg Ile Thr Ile Lys Gln Tyr Leu Leu Ala Cys Phe Val
20           25           30
Leu Pro Met Ile Leu Ala Gly Cys Asn Asp Ala Asp Tyr Gln Val Ile
35           40           45
Asp Asn Ala Ile Tyr Leu Asn Glu Ala Ser Glu Asn Gly Ser Ala Lys
50           55           60
Val Thr Val Asp Pro Glu Asn Val Thr Thr Thr Thr Leu Thr Val Arg
65           70           75           80
Val Gly Gln Pro Val Thr Glu Asn Val Thr Ala Val Leu Thr Val Asp
85           90           95
Pro Ser Ile Leu Lys Glu Tyr Asn Glu Ala Asn Glu Thr Ser Tyr Glu
100          105          110
Val Leu Pro Glu Gln Tyr Phe Thr Tyr Asp Lys Glu Ile Lys Ile Ala

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      115              120              125
Ala Gly Asp Val Ser Ala Ile Pro Ser Glu Phe Arg Val Lys Pro Tyr
  130              135              140
Ser Asn Glu Asn Gly Glu Leu Tyr Ala Ile Pro Val Ser Leu Thr Glu
145              150              155              160
Ile Gln Gly Pro Val Ser Thr Ile Gly Leu Ser Ser Lys Phe Ile Ile
      165              170              175
Leu Leu Asp Lys Pro Leu Ile Gln Ser Val Pro Phe Met Asn Thr Thr
      180              185              190
Asn Ala Val Lys Pro Ala Lys Asp Glu Leu Trp Gly Val Thr Thr Asn
      195              200              205
Glu Trp Ser Leu Glu Ala Trp Val Gln Met Asp Gly Phe Asp Ile Asn
      210              215              220
Asn Gln Ala Ile Phe Asn Ser Gly Ser Ser Asp His Glu Val Tyr Ile
225              230              235              240
Arg Phe Gly Asp Ala Met Ile Pro Tyr Asn Ser Leu Gln Val Lys Thr
      245              250              255
Leu Gly Ser Gln Val Asn Thr Val Thr Leu Phe Glu Lys Asn Lys Trp
      260              265              270
Tyr His Leu Ala Phe Val Tyr Asn Ser Ser Gly Leu Leu Ser Ile Tyr
      275              280              285
Ile Asn Gly Val Leu Asp Val Thr Leu Gln Thr Lys Gly Gly Pro Val
      290              295              300
Arg Phe Asp Lys Met Asn Met Val Ser Ser Gly Ser Tyr Phe Arg Asn
305              310              315              320
Asn Cys Gln Met Ala Gln Val Arg Leu Trp Lys Ser Ala Ile Ser Gln
      325              330              335
Thr Gln Ile Gln Ser Asn Met Tyr Phe Ala Val Lys Pro Ala Asp Pro
      340              345              350
Asn Leu Ile Gly Tyr Trp Lys Met Asp Glu Gly Lys Gly Asn Ala Phe
      355              360              365
Val Asp Cys Thr Gly His Gly Tyr Asp Leu Val Ala Gly Gly Thr Leu
      370              375              380
Val Trp Lys Glu His Val Arg Phe Asp Lys Gln
385              390              395

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<210> 9212

<211> 246

<212> PRT

<213> B.fragilis

<400> 9212

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Arg Glu Lys Lys Met Lys Lys Arg Tyr Leu Asn Ile Val Val Phe Ala
  1           5           10           15
Leu Phe Val Ser Met Leu Trp Gly Cys Ser Asp Trp Thr Lys Pro Glu
      20           25           30
Ala Glu Asp Phe Phe Glu Met Pro Gly Asn Asp Tyr Tyr Glu Asn Leu
      35           40           45
Arg Ala Tyr Lys Arg Ser Glu His Ser Val Ala Phe Gly Trp Phe Gly
      50           55           60
Gly Trp Thr Gly Val Gly Ala Ser Met Val Gly Ser Leu Met Gly Leu
      65           70           75           80
Pro Asp Ser Val Asp Phe Val Ser Ile Trp Gly Asn Trp Lys Asn Leu
      85           90           95
Asp Glu Ala Arg Met Leu Asp Lys Lys Val Lys Glu Gln Lys Gly
      100          105          110
Thr Arg Ala Leu Met Cys Phe Ile Val Ala Asn Val Gly Asp Gln Leu
      115          120          125
Thr Pro Glu Glu His Lys Glu Asn Tyr Lys Glu Tyr Trp Gly Trp Lys

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130		135		140
Asp Gly Asp Gln Glu Ala Ile Asp Gly Ala Ile Arg Lys Tyr Ala Asn				
145		150		155
Ala Ile Cys Asp Ser Ile Asp Lys Tyr Gly Tyr Asp Gly Phe Asp Ile				160
	165		170	175
Asp Tyr Glu Pro Asn Tyr Gly Ser Pro Gly Asn Leu Ala Ser Tyr Pro				
	180		185	190
Glu Asn Met Leu Thr Phe Val Lys Ala Leu Gly Glu Arg Ile Gly Pro				
	195		200	205
Lys Ser Gly Thr Gly Arg Leu Leu Val Ile Asp Gly Glu Pro Gln Ser				
	210		215	220
Ile His Pro Glu Thr Gly Pro Tyr Phe Asp Tyr Phe Ile Val Gln Ala				
225		230		235
Tyr Ser Asn Pro Cys Gly				240
	245			

<210> 9213

<211> 357

<212> PRT

<213> B.fragilis

<400> 9213

Lys Lys Lys Asn Met Lys Asn Asn Leu Leu Ser Glu Arg Leu Val Tyr				
1	5		10	15
Asn Gly Glu Ser Gln Thr Pro Thr His Leu His Leu Cys Thr Tyr Asn				
	20		25	30
Ala Leu Val Met Gln Glu Val Ser Gly Val Asn Phe Gln Thr Val Ala				
	35		40	45
Asn Ser Leu Asn Arg Glu Gln Ile Asn Trp Leu Gln Val His Gly Leu				
	50		55	60
Gln Asn Thr Glu Val Ile Arg Glu Ile Cys Ser His Phe Glu Ile Asp				
65		70		75
Phe Leu Ile Leu Gln Asp Ile Leu Asn Ala Glu His Pro Thr Lys Ile				
	85		90	95
Glu Glu His Asp Lys Tyr Thr Val Leu Ile Met Lys Leu Phe Arg Phe				
	100		105	110
Asn Asn Lys Glu Glu Lys Ser Pro Glu Asp Glu Leu Asp Glu Leu Glu				
	115		120	125
Gln Gln Gln Val Cys Ile Ile Gln Gly Ser Asn Phe Val Leu Thr Phe				
	130		135	140
Leu Glu Asn Glu Thr Asp Phe Phe Asp Asp Val Thr Ser Ala Leu His				
145		150		155
Asn Asp Val Leu Lys Ile Arg Gly Arg Gln Ser Asp Tyr Leu Leu Ser				
	165		170	175
Val Leu Leu Asn Ser Ile Met Gly Asn Tyr Ile Ala Thr Val Ser Thr				
	180		185	190
Ile Asp Asp Ser Leu Glu Asp Leu Glu Glu Glu Leu Leu Thr Ile Ser				
	195		200	205
Asp Gly Asn Asp Ile Gly Ile Gln Ile Gln Ala Leu Arg Arg Gln Tyr				
	210		215	220
Met Leu Met Lys Lys Ala Ile Leu Pro Leu Lys Glu Gln Tyr Val Lys				
225		230		235
Leu Leu Arg Ala Glu Asn Ser Leu Met His Lys Val Asn Arg Ala Phe				
	245		250	255
Phe Asn Asp Val Asn Asp His Leu Gln Phe Val Leu Gln Thr Ile Glu				
	260		265	270
Ile Cys Arg Glu Thr Leu Ser Ser Leu Val Asp Leu Tyr Ile Ser Asn				
	275		280	285
Asn Asp Leu Arg Met Asn Asp Ile Met Lys Arg Leu Thr Ile Val Ser				

290 295 300
 Thr Ile Phe Ile Pro Leu Thr Phe Leu Val Gly Val Trp Gly Met Asn
 305 310 315 320
 Phe Lys Ile Met Pro Glu Leu Asp Trp Arg Tyr Gly Tyr Val Tyr Ala
 325 330 335
 Trp Ile Leu Met Leu Leu Val Gly Gly Ala Val Tyr Trp Phe Phe Arg
 340 345 350
 Lys Lys Lys Trp Tyr
 355

<210> 9214
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 9214
 Ser Met Glu Asn Gly Ile Lys Lys Ile Leu Arg Asp Lys Tyr Gly Leu
 1 5 10 15
 Phe Glu Lys Asp Ile Glu Ile Leu Leu Glu Lys Phe Thr Lys Phe Ser
 20 25 30
 Val Pro Lys Arg Glu Ile Ile Leu Gln Glu Gly Gln Thr Asp His Tyr
 35 40 45
 Ile Tyr Phe Val Glu Lys Gly Ile Val Lys Ser Thr Ile Leu Arg Glu
 50 55 60
 Gly Arg Glu Phe Ile Ile Phe Phe Ala Leu Glu Asn Asp Val Pro Leu
 65 70 75 80
 Ser Ser Pro Asn Leu Thr Glu Ser Arg Gln Ser Leu Tyr Thr Leu Glu
 85 90 95
 Ala Val Asp Thr Cys Ile Leu Trp Arg Ile Ser Arg Lys Asp Leu Ala
 100 105 110
 Thr Ser Phe Lys Asp Ser Leu Asn Leu Ser Asn Trp Gly Arg Met Ile
 115 120 125
 Leu Gln Glu Trp Leu Thr Ser Ser Ala Phe Tyr Phe Ser Ser Ile His
 130 135 140
 Trp Met Ser Lys Lys Glu Gln Tyr Gln Tyr Leu Leu Lys Glu Met Pro
 145 150 155 160
 Lys Leu Ile Gln Arg Leu Ser Met Arg Asp Leu Ser Ala Trp Leu Asp
 165 170 175
 Ile Thr Pro Gln Ser Leu Ser Arg Ile Arg Ala Asp Met His
 180 185 190

<210> 9215
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9215
 Val Arg Trp Asn Pro Arg Thr Arg Leu Leu Glu Ile Phe Glu Ser Thr
 1 5 10 15
 Asp His Ser Ile His Ala Arg Gly Ser Thr Ser Leu Asp His Ser Phe
 20 25 30
 Leu Tyr Tyr Pro His Tyr Leu Val Ser Tyr Thr Arg Ile Leu Phe Pro
 35 40 45
 Thr Ala Phe Asn Leu Gly Cys Ser Arg Gly Val His Pro Leu Ser Val
 50 55 60
 Pro Cys
 65

<210> 9216

<211> 374
 <212> PRT
 <213> B.fragilis

<400> 9216

Thr	Gly	Trp	Lys	Glu	Asn	Arg	Arg	Thr	Lys	Ile	Thr	Gly	Gly	Val	Leu
1				5					10					15	
Met	Asp	Tyr	Met	Lys	Asp	Ile	Lys	Glu	Ile	Ser	Ala	Glu	Glu	Ala	Val
			20					25					30		
Ile	Leu	Trp	Gln	Ala	Ser	Arg	Leu	Ser	Leu	Ser	Lys	Ile	Tyr	Glu	Lys
			35				40					45			
Ala	Pro	Glu	Ile	Leu	Lys	Val	Gln	Gly	Ser	Val	Ile	Gly	Thr	Leu	Gly
			50			55					60				
Asn	Phe	Ser	Ala	Ser	Ile	Gly	Lys	Ala	Lys	Ser	Lys	Lys	Thr	Phe	Asn
65					70					75					80
Val	Ser	Ala	Ile	Val	Ala	Ala	Ala	Leu	Lys	Asn	Gly	Thr	Val	Leu	Arg
				85					90					95	
Tyr	Val	Ala	Glu	Leu	Pro	Glu	Glu	Lys	Arg	Lys	Ile	Leu	Tyr	Val	Asp
			100					105					110		
Thr	Glu	Gln	Ser	Pro	Tyr	His	Cys	Leu	Lys	Val	Met	Lys	Arg	Ile	Leu
			115				120						125		
Arg	Met	Ala	Gly	Leu	Pro	Asp	Arg	Asp	Asn	Glu	His	Leu	Glu	Phe	
			130			135				140					
Leu	Ala	Leu	Arg	Lys	Tyr	Thr	Pro	Glu	Gln	Arg	Ile	Arg	Ile	Val	Glu
145				150					155						160
Gln	Ala	Ile	Tyr	Asn	Thr	Pro	Asp	Ile	Gly	Leu	Val	Ile	Ile	Asp	Gly
				165					170					175	
Ile	Arg	Asp	Met	Val	Tyr	Asp	Ile	Asn	Ser	Pro	Gly	Glu	Ser	Thr	Arg
			180					185					190		
Ile	Ile	Ser	Lys	Leu	Met	Gln	Trp	Thr	Asp	Asp	Arg	Gln	Ile	His	Ile
			195				200					205			
His	Thr	Ile	Leu	His	Gln	Asn	Lys	Gly	Asp	Glu	Asn	Ala	Arg	Gly	His
			210			215					220				
Ile	Gly	Thr	Glu	Leu	Asn	Asn	Lys	Ala	Glu	Thr	Val	Leu	Leu	Val	Glu
225				230					235						240
Lys	Asp	Lys	Ser	Asn	Gly	Asp	Ile	Ser	Asn	Val	Ser	Ala	Met	His	Ile
				245					250					255	
Arg	Ala	Met	Asp	Phe	Glu	Pro	Phe	Ser	Phe	Arg	Ile	Asn	Asp	Asn	Ala
			260					265					270		
Ile	Pro	Glu	Leu	Leu	Glu	Gly	Tyr	Lys	Pro	Glu	Thr	Lys	Lys	Pro	Gly
			275				280					285			
Arg	Pro	Glu	Glu	Glu	Lys	Phe	Asp	Pro	Tyr	Arg	His	Ile	Thr	Glu	Gln
			290			295					300				
Gln	His	Arg	Ile	Ala	Leu	Glu	Ala	Val	Phe	Gly	Leu	Lys	Glu	Glu	Tyr
305				310					315						320
Gly	Tyr	Lys	Glu	Leu	Glu	Asp	Thr	Leu	Ile	Lys	Thr	Tyr	Val	Ser	Val
				325					330					335	
Gly	Val	Lys	Leu	Asn	His	Lys	Lys	Ala	Val	Ser	Leu	Ile	Thr	Met	Leu
				340				345					350		
Arg	Asn	Lys	Arg	Met	Ile	Val	Gln	Glu	Asn	Gly	Arg	Lys	Tyr	Thr	Phe
			355				360					365			
Met	Pro	Asp	Phe	His	Tyr										
															370

<210> 9217
 <211> 423
 <212> PRT
 <213> B.fragilis

<400> 9217

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Ile Phe Tyr Leu Cys Asn Leu Asn Lys Lys Leu Glu Val Met Lys Tyr
1      5      10      15
Lys Leu Leu Val Leu Asp Val Asp Gly Thr Leu Leu Asn Asp Glu Lys
20      25      30
Glu Ile Thr Pro Arg Thr Leu Ala Thr Leu Leu Lys Val Gln Gln Met
35      40      45
Gly Val His Ile Val Leu Ala Ser Gly Arg Pro Thr Tyr Gly Ile Leu
50      55      60
Pro Leu Ala Lys Lys Leu Glu Leu Gly Asn Tyr Gly Gly Tyr Ile Leu
65      70      75      80
Ser Tyr Asn Gly Ala Gln Val Ile Asn Ala Lys Asn Gly Glu Val Leu
85      90      95
Leu Glu Arg Arg Ile Asn Pro Glu Met Leu Pro Tyr Leu Glu Lys Lys
100     105     110
Ala Arg Lys Asn Gly Phe Ala Ile Phe Thr Tyr Thr Glu Asp Arg Met
115     120     125
Ile Ala Asp Gln Ala Asp Asn Glu His Ile Leu Gln Glu Ala Phe Leu
130     135     140
Asn Arg Met Glu Leu Ile Glu Glu Pro Glu Phe Ser Val Ala Val Asp
145     150     155     160
Phe Ala Pro Ser Lys Cys Met Leu Val Ser Asp Asp Glu Glu Ala Leu
165     170     175
Ile Gly Leu Glu Glu His Trp Lys Lys Arg Leu Asn Gly Ala Leu Asp
180     185     190
Val Phe Arg Ser Glu Pro Tyr Phe Leu Glu Val Leu Pro Cys Gly Ile
195     200     205
Asp Lys Ser Thr Ser Leu Gly Ala Leu Leu Ser His Leu Asp Ile Thr
210     215     220
Pro Glu Glu Ile Ile Val Ile Gly Asp Gly Val Cys Asp Val Ser Met
225     230     235     240
Ile Gln Phe Ala Gly Leu Gly Ile Ala Met Gly Asn Ala Gln Asp Ser
245     250     255
Val Lys Val Cys Ala Asp Val Val Thr Ala Ser Asn Glu Glu Asp Gly
260     265     270
Val Ala Leu Ala Val Glu Lys Ala Ile Leu Ser Glu Ile Arg Pro Ala
275     280     285
Glu Ile Pro Leu Asp Gln Leu Asn Glu Arg Ala Arg His Ala Leu Met
290     295     300
Gly Asn Leu Gly Ile Gln Tyr Thr Tyr Ala Ser Glu Asp Arg Val Glu
305     310     315     320
Ala Thr Met Pro Val Asp Glu Arg Thr Arg Gln Pro Phe Gly Ile Leu
325     330     335
His Gly Gly Ala Thr Leu Ala Leu Ala Glu Thr Val Ala Gly Leu Gly
340     345     350
Ser Met Ile Leu Cys Gln Pro Asp Glu Ile Val Val Gly Met Gln Val
355     360     365
Ser Gly Asn His Met Ser Ser Ala His Glu Gly Asp Thr Val Arg Ala
370     375     380
Val Gly Thr Ile Ile His Lys Gly Arg Ser Ser His Val Trp Asn Val
385     390     395     400
Asp Val Phe Thr Ser Thr Asp Lys Leu Val Ser Ser Ile Arg Val Val
405     410     415
Asn Ser Ile Leu Lys Lys Arg
420

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<210> 9218

<211> 346

<212> PRT

<213> B.fragilis

<400> 9218

Tyr Lys Phe Asp Lys Met Lys Lys Ile Ile Phe Met Thr Leu Phe Leu
 1 5 10 15
 Leu Val Ala Met Thr Gly Gln Ser Lys Gly Lys Gly Glu Phe Thr Val
 20 25 30
 Leu Gln Trp Asn Val Trp Gln Glu Gly Thr Met Val Pro Gly Gly Tyr
 35 40 45
 Asp Ala Ile Val Asn Glu Ile Val Arg Leu Gln Pro Asp Phe Val Thr
 50 55 60
 Phe Ser Glu Val Arg Asn Tyr His Asn Thr Arg Phe Asn Glu Arg Ile
 65 70 75 80
 Val Ala Ser Leu Lys Glu Lys Gly Leu Asp Tyr Tyr Ser Phe Tyr Thr
 85 90 95
 Tyr Asp Thr Gly Leu Leu Ser Lys His Pro Ile Thr Asp Ser Leu Thr
 100 105 110
 Val Phe Pro Glu Asn Gly Asp His Gly Ser Ile Tyr Arg Leu Thr Ser
 115 120 125
 Ser Val Asn Gly His Lys Val Ala Val Tyr Thr Ser His Leu Asp Tyr
 130 135 140
 Leu Asp Cys Ala Tyr Tyr Asn Val Arg Gly Tyr Asp Gly Ser Ser Trp
 145 150 155 160
 Lys Glu Ile Pro Ile Pro Thr Thr Val Glu Glu Val Leu Lys Val Asn
 165 170 175
 Val Ala Ser Gln Arg Asp Asp Ala Ile Lys Met Phe Ile Ala Gln Ala
 180 185 190
 Gln Lys Asp Ile Ala Asn Gly Tyr Ser Val Ile Ile Gly Gly Asp Phe
 195 200 205
 Asn Glu Pro Ser His Leu Asp Trp Ile Glu Ala Asn Lys Asn Leu Tyr
 210 215 220
 Asp His Asn Gly Leu Val Ile Pro Trp Thr Val Thr Thr Leu Leu Glu
 225 230 235 240
 Gln Asn Gly Phe Val Asp Thr Tyr Arg His Ile Tyr Pro Asn Pro Leu
 245 250 255
 Thr His Pro Gly Phe Thr Tyr Pro Ala Asp Asn Pro Leu Lys Glu Pro
 260 265 270
 Gly Lys Leu Thr Trp Ala Pro Lys Ala Asp Glu Arg Asp Arg Ile Asp
 275 280 285
 Phe Ile Phe Tyr Lys Gly Lys Asn Leu Glu Ala Lys Lys Ala Ile Val
 290 295 300
 Phe Gly Pro Lys Gly Ser Ile Val Arg Asn Lys Arg Val Gln Glu Thr
 305 310 315 320
 Ser Lys Asp Asn Phe Leu Leu Pro Leu Asp Val Trp Pro Thr Asp His
 325 330 335
 Lys Gly Leu Leu Val Thr Phe Lys Ile Lys
 340 345

<210> 9219

<211> 278

<212> PRT

<213> B.fragilis

<400> 9219

Asn Ile Ile Asp Met Asn Lys Leu Leu Tyr Cys Phe Phe Leu Ser Phe
 1 5 10 15
 Ser Val Ile Ala Thr Ser Ala Cys Thr Asp Asp Lys Glu Glu Arg Glu
 20 25 30
 Phe Pro Pro Ala Pro Asp Phe Ser Leu Met Ile Leu Lys Glu Asn Leu

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      35              40              45
His Ser Asn Gly Gly Asp Val Leu Arg Thr Asp Thr Tyr Val Tyr Asp
  50              55              60
Asn Asn Lys Leu Thr Thr His Thr Thr Leu Gln Glu Phe Tyr Gly Gln
  65              70              75              80
Ser Leu Thr His Glu Thr Thr Leu Ser Tyr Ser Gly Asn Glu Val Thr
      85              90              95
Leu Ala Asp Glu Asn Gly Asn Thr Ala Ile Tyr Ile Leu Gly Ser Ala
      100              105              110
Gly Tyr Ala Thr Glu Cys Thr Tyr Lys Leu Ser Asp Gln Val Arg Lys
      115              120              125
Tyr Thr Phe Thr Tyr Ser Gly Glu Tyr Leu Thr Arg Ile Asp Glu Glu
      130              135              140
Ile Asn Ser Thr Pro Tyr Ser Ser Val Glu Leu Ala Tyr Asp Asp Asn
  145              150              155              160
Gly Asn Leu Ser His Ile Ile Ala Asn Gly Leu Gln Thr Asn Tyr Gln
      165              170              175
Ala Gly Asn Thr Glu Asn Leu Tyr Gln Leu Pro Cys Leu Gln Val Cys
      180              185              190
Glu Thr Tyr Pro Leu Ser Phe His Asn Asp Ala Ile Tyr Ala Gly Leu
      195              200              205
Leu Gly Arg Gln Ser Lys His Leu Ile Ile Gly Asn Thr Pro Lys Glu
      210              215              220
Asn Lys Glu Glu Tyr Thr Lys Tyr Thr Tyr Glu Leu Asp Glu Asn Glu
  225              230              235              240
Lys Pro Thr Gly Ile Ile Ala Lys Thr Thr Ser Thr Gly Thr Val Ile
      245              250              255
Asp Ile Thr Gly Asn Ala Tyr Asp Glu Thr Lys Thr Asp Thr Arg Thr
      260              265              270
Ile Gly Ile Thr Ile Glu
      275

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<210> 9220
<211> 76
<212> PRT
<213> B.fragilis

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<400> 9220
Lys Arg Asn Glu Lys Ser Leu Glu Gly Lys Arg Gly Tyr Leu Ile Ser
  1              5              10              15
Ile Ser Leu Ser Pro Ser Ser Thr Phe Leu Tyr Ser Ala Ile Gln Tyr
      20              25              30
Thr Tyr Gly Gly Gln Thr Arg Lys Val Arg Ser Cys Ala His Asp Glu
      35              40              45
Gly Gln Glu Thr Asp Pro Gln Val Ala Asp Ser Asp Asn His Glu Tyr
      50              55              60
Arg Glu Asn His Arg His Asn Asn Gly His Ser Phe
  65              70              75

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<210> 9221
<211> 111
<212> PRT
<213> B.fragilis

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<400> 9221
Lys His Thr Asp Met Glu Glu Lys Lys Glu Ala Arg Gln Lys Arg Asn
  1              5              10              15
Arg Glu Lys Leu Ala Thr Ala Asp Trp Val Met Ala Glu Phe Tyr Ala
      20              25              30

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Thr	Trp	Cys	Pro	His	Cys	Lys	Arg	Met	Gln	Pro	Val	Val	Glu	Glu	Phe
		35					40					45			
Lys	Lys	Leu	Met	Glu	Gly	Thr	Leu	Glu	Val	Val	Gln	Ile	Asp	Ile	Asp
	50					55					60				
Gln	Glu	Asp	Ala	Leu	Ala	Asn	Phe	Tyr	Thr	Ile	Glu	Ser	Val	Pro	Thr
65					70					75					80
Phe	Ile	Leu	Met	Arg	Lys	Gly	Glu	Gln	Leu	Trp	Arg	Gln	Ser	Gly	Glu
				85					90					95	
Leu	Asp	Leu	Glu	Arg	Leu	Lys	Lys	Ala	Val	Lys	Asp	Leu	Lys	Ser	
			100					105					110		

<210> 9222

<211> 291

<212> PRT

<213> B.fragilis

<400> 9222

Lys	Asn	Thr	Glu	Met	Asn	Ile	Leu	Val	Thr	Gly	Ala	Asn	Gly	Gln	Leu
1				5					10					15	
Gly	Asn	Glu	Met	Gln	Val	Leu	Ala	Arg	Glu	Asn	Leu	Gln	His	Thr	Tyr
			20					25				30			
Phe	Phe	Thr	Asp	Val	Gln	Glu	Leu	Asp	Ile	Cys	Asp	Glu	Gln	Ala	Val
			35				40					45			
Tyr	Ala	Tyr	Val	Ser	Glu	His	Lys	Ile	Asn	Ile	Ile	Val	Asn	Cys	Ala
	50					55					60				
Ala	Tyr	Thr	Ala	Val	Asp	Lys	Ala	Glu	Asp	Asn	Val	Glu	Leu	Cys	Asp
65					70				75						80
Lys	Leu	Asn	Asn	Ile	Ala	Pro	Gly	Tyr	Leu	Ala	Arg	Ala	Ala	Gln	Ala
				85					90					95	
Asn	Gly	Ala	Ala	Met	Ile	Gln	Val	Ser	Thr	Asp	Tyr	Val	Phe	Asp	Gly
			100					105					110		
Thr	Ala	His	Ile	Pro	Tyr	Thr	Glu	Glu	Glu	Pro	Thr	Cys	Pro	Ala	Ser
		115					120					125			
Val	Tyr	Gly	Ser	Thr	Lys	Leu	Ala	Gly	Glu	Gln	Asn	Val	Met	Asp	His
	130					135					140				
Cys	Glu	Lys	Ala	Met	Val	Ile	Arg	Thr	Ala	Trp	Leu	Tyr	Ser	Ile	Tyr
145					150				155						160
Gly	Asn	Asn	Phe	Val	Lys	Thr	Met	Ile	Arg	Leu	Gly	Gln	Glu	Arg	Asp
				165					170					175	
Ser	Leu	Gly	Val	Ile	Phe	Asp	Gln	Ile	Gly	Thr	Pro	Thr	Tyr	Ala	Asn
			180				185						190		
Asp	Leu	Ala	Gln	Ala	Ile	Phe	Ala	Ala	Ile	Asn	Lys	Gly	Val	Val	Arg
		195					200					205			
Gly	Ile	Tyr	His	Phe	Ser	Asp	Glu	Gly	Val	Cys	Ser	Trp	Tyr	Asp	Phe
	210					215					220				
Thr	Val	Ala	Ile	His	Arg	Leu	Ala	Gly	Ile	Ala	Ser	Cys	Lys	Val	Lys
225					230					235					240
Pro	Leu	His	Thr	Ala	Asp	Tyr	Pro	Ala	Lys	Ala	Pro	Arg	Pro	His	Tyr
				245					250					255	
Ser	Val	Leu	Asp	Lys	Thr	Lys	Ile	Lys	Asp	Thr	Phe	Gly	Ile	Glu	Ile
		260						265				270			
Pro	His	Trp	Glu	Glu	Ser	Leu	Lys	Arg	Cys	Ile	Asn	Gln	Leu	Arg	Met
		275					280					285			
Glu	Thr	Leu													
		290													

<210> 9223

<211> 373

<212> PRT

<213> B.fragilis

<400> 9223

Tyr Ile Lys Glu Glu Met Thr Leu Glu Glu Thr Asn Asn Cys Glu Ile
 1 5 10 15
 Ile Asp Glu Leu Ile Arg Gln Gly Arg Ser Phe Ala Met Tyr Arg Asn
 20 25 30
 Pro Gly Glu Glu Glu Pro His Phe Leu Met Gln Thr Cys Gly Glu Val
 35 40 45
 His Leu Ile Arg Lys Met Glu Asp Leu Asn Gly Arg Thr Gly Phe Val
 50 55 60
 Ile Ala Pro Phe Arg Val Thr Pro Gln Cys Pro Ile Ile Leu Ile Arg
 65 70 75 80
 Pro Asp Cys His Glu Ile Pro Ser Cys Ala Gly Asn Leu His Thr Pro
 85 90 95
 Ala Gln Gly Asp Asp Ala Ala Ser Tyr Gly Gln Gln Leu Arg Ser Asp
 100 105 110
 Arg Ser Leu Gly Ala Lys Lys Ala Tyr Glu Ala Cys Phe Asp Val Phe
 115 120 125
 Ile Arg Ala Leu Arg Glu Arg Thr Phe Asp Lys Leu Val Leu Ser Arg
 130 135 140
 Arg Met Met Val Arg Arg Glu Pro Gly Phe Ser Pro Ala Ala Ala Phe
 145 150 155 160
 Tyr Arg Ala Cys Arg Arg Tyr Ile Tyr Ser Tyr Val Tyr Leu Cys Tyr
 165 170 175
 Thr Pro Gln Thr Gly Val Trp Met Gly Ser Thr Pro Glu Ile Ile Leu
 180 185 190
 Ser Gly Glu Lys Gly Glu Trp Asn Thr Val Ala Leu Ala Gly Thr Gln
 195 200 205
 Ser Leu Gln Asn Gly Glu Leu Pro Gln Gln Trp Asp Glu Lys Asn Arg
 210 215 220
 Glu Glu Gln Glu Tyr Val Ala Ala Tyr Ile Arg Lys Gln Leu Arg Ser
 225 230 235 240
 Leu Gly Ile Ser Pro Thr Glu Lys Gly Pro Tyr Pro Ala Phe Ala Gly
 245 250 255
 Ala Leu Ser His Leu Lys Thr Asp Phe His Phe Ser Leu Asn Asp Ser
 260 265 270
 Gln Arg Leu Gly Asp Leu Leu Lys Leu Leu His Pro Thr Pro Ala Val
 275 280 285
 Cys Gly Leu Pro Lys Glu Glu Ala Tyr Arg Phe Ile Leu Asp Asn Glu
 290 295 300
 Gly Tyr Asp Arg Ser Tyr Tyr Ser Gly Phe Ile Gly Trp Leu Arg Pro
 305 310 315 320
 Glu Gly Arg Thr Asp Leu Tyr Val Asn Leu Arg Cys Met Asn Val Lys
 325 330 335
 Glu Asp Ser Leu Thr Leu Tyr Ala Gly Gly Gly Leu Leu Ala Ser Ser
 340 345 350
 Glu Leu Asp Asp Glu Phe Gln Glu Thr Glu Lys Lys Met Gln Thr Met
 355 360 365
 Gln Asn Leu Asn Ser
 370

<210> 9224

<211> 579

<212> PRT

<213> B.fragilis

<400> 9224

Val Ser Gly Asp Gly Lys Glu Asp Ala Asp His Ala Glu Leu Glu Leu

1		5		10		15
Leu	Asn	Lys	Ile	Tyr	Lys	Ala
	20				25	
Leu	Gln	Leu	Val	Ala	Leu	Leu
	35				40	
Leu	Cys	Pro	Gly	Ser	Arg	Asn
	50				55	
His	Pro	Asp	Phe	Thr	Cys	Tyr
65					70	
Phe	Phe	Ala	Ile	Gly	Leu	Ala
					85	
Cys	Cys	Thr	Ser	Gly	Thr	Ala
					100	
Glu	Ala	Tyr	Tyr	Gln	Lys	Val
					115	
Pro	Ala	Ala	Trp	Ile	Asn	Gln
					130	
Gly	Val	Phe	Arg	Ser	Leu	Val
145					150	
His	Thr	Asp	Glu	Asp	Glu	Trp
					165	
Leu	Leu	Glu	Leu	Asn	His	His
					180	
Pro	Val	Ser	Glu	Pro	Leu	Phe
					195	
Val	Arg	Val	Ile	Thr	Arg	Tyr
					210	
Tyr	Asp	Gly	Leu	Ile	Asp	Arg
225					230	
Ile	Val	Gly	Gln	Met	Asn	Leu
					245	
Lys	Met	Leu	Tyr	Lys	Gln	Phe
					260	
Gln	Thr	Val	Pro	Gly	Ile	Pro
					275	
Ala	Met	Ser	Pro	Glu	Met	Gln
					290	
Thr	Tyr	Gly	Gly	His	Ile	Val
305					310	
Gln	His	Pro	Pro	Lys	Glu	His
					325	
Ile	Asp	Leu	Phe	Gln	Gly	Ala
					340	
Phe	Glu	Phe	Met	Glu	Lys	Ile
					355	
Glu	Tyr	Pro	Arg	Gln	Trp	Glu
					370	
Glu	Leu	Pro	Tyr	Ser	Glu	Met
385					390	
Leu	Pro	Ala	Ser	Cys	Ala	Leu
					405	
Tyr	Ala	Gln	Leu	Tyr	Ser	Leu
					420	
Arg	Gly	Thr	Ser	Gly	Ile	Glu
					435	
Ala	Ala	Ala	Ser	Lys	Lys	Leu
					450	
Phe	Phe	Tyr	Asp	Met	Asn	Ala
465					470	

Leu Arg Ile Leu Leu Leu Asn Asn Gly Gly Gly Glu Ile Phe His Thr
 485 490 495
 Leu Pro Gly Leu Glu Met Ser Gly Thr Ser His Arg Phe Val Thr Ala
 500 505 510
 Val His Lys Thr Ser Ala Lys Gly Trp Ala Glu Glu Arg Gly Phe Leu
 515 520 525
 Tyr Gln Glu Val Gln Asp Glu Lys Gln Leu Asp Glu Ala Met Lys Thr
 530 535 540
 Phe Thr Gln Pro Glu Leu Leu Thr Gln Pro Val Ile Met Glu Val Phe
 545 550 555 560
 Thr Asn Lys Asn Lys Asp Ala Arg Ile Leu Lys Asp Tyr Tyr His Gln
 565 570 575
 Leu Lys Asn

<210> 9225

<211> 351

<212> PRT

<213> B.fragilis

<400> 9225

Ser Gly Gly Asp Ile Met Leu Ala Tyr Thr Tyr Val Glu His Gly Lys
 1 5 10 15
 Phe Glu Leu Leu Glu Lys Leu Arg Pro Gln Ile Lys Asp Ala Arg Asp
 20 25 30
 Ala Ile Val Arg Val Thr Leu Gly Ser Ile Cys Thr Ser Asp Leu His
 35 40 45
 Ile Lys His Gly Ser Val Pro Arg Ala Val Pro Gly Ile Thr Val Gly
 50 55 60
 His Glu Met Val Gly Ile Val Glu Glu Val Gly Ser Gly Val Ile Ser
 65 70 75 80
 Val Arg Pro Gly Asp Arg Val Thr Val Asn Val Glu Thr Phe Cys Gly
 85 90 95
 Glu Cys Phe Phe Cys Arg His Gly Tyr Val Asn Asn Cys Thr Asp Pro
 100 105 110
 Asp Gly Gly Trp Ala Leu Gly Cys Arg Ile Asp Gly Gly Gln Ala Glu
 115 120 125
 Tyr Val Arg Val Pro Tyr Ala Glu Gln Gly Leu Asn Arg Ile Pro Asp
 130 135 140
 Asn Val Ser Asp Glu Gln Ala Leu Phe Val Gly Asp Val Leu Ala Thr
 145 150 155 160
 Gly Phe Trp Ala Thr Arg Ile Ser Glu Ile Ser Glu Asp Asp Thr Val
 165 170 175
 Leu Ile Ile Gly Ala Gly Pro Thr Gly Ile Cys Thr Leu Leu Cys Val
 180 185 190
 Met Leu Lys Lys Pro Arg Arg Ile Ile Val Cys Glu Arg Ser Ala Glu
 195 200 205
 Arg Ile Arg Phe Val Arg Glu His Tyr Pro Asp Val Leu Val Thr Glu
 210 215 220
 Pro Glu Asn Cys Arg Asp Phe Val Leu Cys Asn Ser Asp His Gly Gly
 225 230 235 240
 Ala Asp Val Val Leu Glu Val Ala Gly Ser Glu Glu Thr Phe Arg Leu
 245 250 255
 Ala Trp Glu Cys Ala Arg Pro Asn Ala Ile Val Thr Ile Val Ala Leu
 260 265 270
 Tyr Asp Lys Pro Gln Phe Leu Pro Leu Pro Asp Met Tyr Gly Lys Asn
 275 280 285
 Leu Ile Phe Lys Thr Gly Gly Val Asp Gly Cys Asp Cys Ala Glu Ile
 290 295 300

Leu Ser Leu Ile Glu Gln Gly Arg Ile Asp Thr Thr Pro Leu Ile Thr
 305 310 315 320
 His Arg Phe Pro Leu Asn Glu Ile Glu Glu Ala Tyr Arg Ile Phe Glu
 325 330 335
 Asn Lys Leu Glu Gly Val Ile Lys Ile Ala Ile Thr Gly Gly Arg
 340 345 350

<210> 9226
 <211> 145
 <212> PRT
 <213> B.fragilis

<400> 9226
 Met Ile Met Glu Asp Leu Cys Leu Lys Ile Leu Glu Gln Arg Gly Ile
 1 5 10 15
 Lys Pro Thr Ala Ile Arg Met Leu Val Leu Lys Ala Met Met Glu Thr
 20 25 30
 Glu Gln Ala Val Ser Leu Leu Asp Leu Glu Asn Lys Leu Asp Thr Val
 35 40 45
 Asp Lys Ser Thr Ile Phe Arg Thr Ile Thr Leu Phe Val Ser His His
 50 55 60
 Leu Ala His Ser Val Asp Asp Gly Thr Gly Ser Leu Lys Tyr Ala Val
 65 70 75 80
 Cys Asp Ser Glu Cys Thr Cys Ala Val Lys Asp Leu His Thr His Phe
 85 90 95
 Tyr Cys Glu Tyr Cys His Lys Thr Phe Cys Leu Glu Asn Ile His Val
 100 105 110
 Pro Val Val Asp Leu Pro Glu Gly Phe Ala Val Arg Ser Ile Asn Tyr
 115 120 125
 Val Leu Lys Gly Cys Cys Ala Glu Cys Ala Ala Glu Leu Lys Lys Asp
 130 135 140
 His
 145

<210> 9227
 <211> 276
 <212> PRT
 <213> B.fragilis

<400> 9227
 Ile Glu Met Glu Thr Lys Arg Glu Trp Thr Pro Ile Lys Glu Tyr Glu
 1 5 10 15
 Asp Ile Leu Phe Asp Tyr Tyr Asn Gly Ile Ala Arg Ile Thr Ile Asn
 20 25 30
 Arg Glu Arg Tyr Arg Asn Ala Phe Thr Pro Thr Thr Thr Gly Glu Met
 35 40 45
 Ser Asp Ala Met Arg Ile Cys Arg Glu Glu Pro Asp Ile Asn Val Val
 50 55 60
 Val Leu Thr Gly Ala Gly Asp Lys Ala Phe Cys Ser Gly Gly Asp Gln
 65 70 75 80
 Asn Val Lys Gly Arg Gly Gly Tyr Ile Gly Lys Asp Gly Val Pro Arg
 85 90 95
 Leu Ser Val Leu Asp Val Gln Lys Gln Ile Arg Ser Ile Pro Lys Pro
 100 105 110
 Val Ile Ala Val Asn Gly Phe Ala Ile Gly Gly Gly His Val Leu
 115 120 125
 His Val Val Cys Asp Leu Ser Ile Ala Ser Glu Asn Ala Ile Phe Gly
 130 135 140
 Gln Thr Gly Pro Arg Val Gly Ser Phe Asp Ala Gly Phe Gly Ser Ser


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145          150          155          160
Tyr Leu Ala Arg Val Val Gly Gln Lys Lys Ala Arg Glu Ile Trp Phe
          165          170          175
Leu Cys Arg Lys Tyr Asn Ala Gln Glu Ala Leu Asp Met Gly Leu Val
          180          185          190
Asn Lys Val Val Pro Leu Asp Lys Leu Glu Asp Glu Tyr Val Gln Trp
          195          200          205
Ala Glu Glu Met Met Gln Leu Ser Pro Leu Ala Leu Arg Met Ile Lys
          210          215          220
Ala Gly Leu Asn Ala Glu Leu Asp Gly Gln Ala Gly Ile Gln Glu Leu
225          230          235          240
Ala Gly Asp Ala Thr Leu Leu Tyr Tyr Leu Thr Asp Glu Ala Gln Glu
          245          250          255
Gly Lys Asn Ala Phe Leu Glu Lys Arg Lys Pro Asp Phe Lys Gln Tyr
          260          265          270
Pro Lys Phe Pro
          275

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<210> 9228
 <211> 134
 <212> PRT
 <213> B.fragilis

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<400> 9228
Lys Lys Met Glu Gln Thr Phe Lys Ala Arg Asn Pro Gln Leu Gly Val
1          5          10          15
Trp Leu Phe Ala Ile Gly Ile Ile Ala Cys Ile Ala Ile Ser Phe Ile
          20          25          30
Thr Ile Gln Ala Ile Trp Ile Gly Thr Ala Cys Ile Gly Pro Ser Val
          35          40          45
Thr Ile Tyr Phe Ser Gln Thr Ser Cys Lys Tyr Ile Val Lys Lys Asn
          50          55          60
Gly Asp Leu Gln Ile Val Asn Asp Phe Phe Arg Gln Lys Arg Thr Phe
65          70          75          80
Ser His Ile Thr Asp Val Thr Tyr Thr Arg His Ala Leu Gly Met Gln
          85          90          95
Lys Ile Lys Ile Arg His Ala Thr Gly Phe Val Met Ile Asp Pro Gln
          100          105          110
Ser Pro Arg Glu Leu Ile Lys Ala Leu Gln Lys Thr Asn Pro Asp Val
          115          120          125
Arg Val Lys Asn Phe Ile
          130

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<210> 9229
 <211> 161
 <212> PRT
 <213> B.fragilis

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<400> 9229
Arg Lys Met Glu Arg Ala Thr Phe Ser Leu Leu Phe Tyr Ile Arg Arg
1          5          10          15
Thr Lys Leu Asn Arg His Gly Glu Ala Pro Ile Leu Met Arg Ile Thr
          20          25          30
Val Asn Gly Val Arg Ala Asp Ala Ser Ile Lys Lys Thr Ile Leu Pro
          35          40          45
Gln Leu Trp Asp Ala Asp Lys Gly Arg Ala Leu Asp Lys Lys Arg Glu
          50          55          60
Gly Lys Glu Leu Asn Leu Tyr Leu Asp Ala Ile His Met Arg Ile Leu
65          70          75          80

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Lys Ile Gln Arg Asp Leu Glu Ile Glu Gly Ala Asn Val Ile Ala Ser
 85 90 95
 Lys Val Leu Asp Arg Tyr Leu Arg Lys Gly Gly Phe Val Asp Arg Ser
 100 105 110
 Leu Phe Asp Val Phe Arg Glu His Asn Asp Lys Cys Lys Lys Leu Val
 115 120 125
 Gly Ile Ser Met Ala Ala Ala Thr Ala Gln Arg Tyr Glu Thr Thr Leu
 130 135 140
 Gln His Thr Gln Asp Phe Val Trp Asp Thr Tyr Arg Lys Lys Phe Phe
 145 150 155 160
 Phe

<210> 9230

<211> 331

<212> PRT

<213> B.fragilis

<400> 9230

Arg Lys Arg Glu Lys Ser Ile Val Pro Leu Ala Gly Asn Leu Pro Ser
 1 5 10 15
 Leu Ile Gly Gln Ile Ala Lys Cys Phe Phe Phe Ser Cys Ile Ile
 20 25 30
 Tyr Glu Ile Ala Leu Asn Leu Ile Thr Asn Thr Tyr Lys Leu Met Asn
 35 40 45
 Lys Ile Cys Phe Phe Ile Gly Val Phe Ile Thr Leu Leu Leu Ala Gly
 50 55 60
 Cys Ser Ser Asn Pro Ile Thr His Val Arg Val Ala Thr Phe Asn Ile
 65 70 75 80
 Arg Tyr Asp Asn Pro Gly Asp Ser Leu Asn Ser Trp Lys Tyr Arg Lys
 85 90 95
 Glu Lys Val Cys Glu Tyr Ile Arg Glu Lys His Pro Asp Val Leu Gly
 100 105 110
 Met His Glu Val Leu Asn His Gln Ser Lys Asp Leu Met Ser Gly Leu
 115 120 125
 Pro Asp Tyr Ala Tyr Val Gly Val Gly Arg Glu Asp Gly Lys Thr Gln
 130 135 140
 Gly Glu Tyr Ala Pro Val Phe Tyr Arg Lys Asp Lys Tyr Asp Leu Leu
 145 150 155 160
 Asp Ser Asn Thr Phe Trp Leu Ser Glu His Pro Asp Ser Ile Gly Lys
 165 170 175
 Leu Gly Trp Asp Ala Ala Cys Thr Arg Val Ala Thr Trp Ala Lys Leu
 180 185 190
 Lys Asp Lys Thr Thr Gly Lys Glu Phe Leu Met Leu Asn Thr His Phe
 195 200 205
 Asp His Val Gly Thr Glu Ala Arg Arg Asn Ser Ala Leu Leu Ile Ile
 210 215 220
 Asp Lys Ile Lys Glu Ile Ala Gly Thr His Pro Ala Met Met Thr Gly
 225 230 235 240
 Asp Phe Asn Val Ser Glu Glu Trp Glu Ala Tyr Lys Thr Ile Thr Ser
 245 250 255
 Asn Glu Phe Val Leu Lys Asp Ala Trp Lys Ile Ala Gly Lys Gln Ser
 260 265 270
 Gly Glu Asn Tyr Thr Phe His Asp Phe Gly Arg Val Pro Val Ala Glu
 275 280 285
 Arg Glu Lys Ile Asp Phe Ile Phe Val Thr Pro Gln Ile Lys Val Ala
 290 295 300
 Asp Ala Glu Ile Ile Ser Ser Ala Ile Thr Asp Ser Thr Tyr Leu Ser
 305 310 315 320

Asp His Asn Ala His Leu Ala Asp Leu Glu Phe
 325 330

<210> 9231

<211> 64

<212> PRT

<213> B.fragilis

<400> 9231

Cys Gln Pro Trp Val Ser His Leu Asn Ile Lys Ser Arg Asn Asn Tyr
 1 5 10 15
 Ile Ile Asn Tyr Lys Asn Ser Gln Asn Glu Lys Lys Asn Cys Phe Tyr
 20 25 30
 Cys Gly Thr Phe Met Arg Asn Val Leu His Asp Ser Ile Arg Thr Val
 35 40 45
 Gln Asn Arg Trp Lys Glu Asn Gln Cys Arg Gln Ser Gly Thr Ser Arg
 50 55 60

<210> 9232

<211> 805

<212> PRT

<213> B.fragilis

<400> 9232

Leu Asn Leu Cys Tyr Phe Cys Leu Asp Arg Glu Leu Thr Met Glu Phe
 1 5 10 15
 Ile Asn Pro Lys Phe Lys Tyr Ile Phe Ala Ser Ile Leu Leu Leu Gly
 20 25 30
 Gly Phe Leu Cys Gly Tyr Asn Phe Lys Gln Trp Tyr Val Thr Asn His
 35 40 45
 Arg Asn Glu Lys His Ile Ser Leu Ile Tyr Ser Cys Ser Lys Lys Glu
 50 55 60
 Ala Asp Arg Gly Gln Phe Glu Glu Leu Leu Lys Lys Glu Phe Arg Ser
 65 70 75 80
 Lys Gly Val Glu Pro Ile Phe Asp Lys Phe Tyr Leu Asp Cys Asn Arg
 85 90 95
 Phe Gly Gln Lys Val Glu Ile Glu His Ile Ser Asn Tyr Leu Glu Ala
 100 105 110
 Leu Lys Ser Lys Pro Ile Asp Leu Val Met Ala Met Gly Asp Gln Ala
 115 120 125
 Thr His Ser Leu Leu Ser Thr Arg His Pro Leu Leu Tyr Ser Val Pro
 130 135 140
 Val Val Ala Cys Asn Val His Phe Pro Asp Glu Asp Leu Leu Lys Lys
 145 150 155 160
 Tyr Glu Ser Arg Lys Val Tyr Ala Leu Arg Asp Thr Pro Asp Phe Lys
 165 170 175
 His Asn Met Glu Phe Ile Arg Ser Leu Gln Pro His Val Gly Leu Glu
 180 185 190
 Ile Val Tyr Asn Ile Asp Leu Thr Pro Leu Gly His Lys Ser Phe Asp
 195 200 205
 Leu Leu Asn Gln Val Val Asp Arg Lys Asp Val Gln Ile Leu Gly His
 210 215 220
 Lys Ser Ala Phe Ser Met Glu Tyr Glu Tyr Lys Glu Met Arg Glu Met
 225 230 235 240
 Ile Glu Phe Tyr Asn Leu Met Pro Ala Val Ala Asn Asn Arg Ile Lys
 245 250 255
 Lys Lys Glu Leu Thr Ile Ser Leu Cys Pro Phe Arg Tyr Ile Lys Gly
 260 265 270
 Ala Ser Leu Leu Val Met Met Glu Asn Ser Lys Ser Glu Gln Gly Lys

275	280	285
Lys Ala Phe Leu Leu Asp	Lys Phe Asp Met Val Ser	Phe Pro Ile Val
290	295	300
Asn Ala Leu Ser Ile Pro	Ser Phe Ser Cys Val His	Ala Gly Phe Gly
305	310	315
Glu Gly Asn Lys Ile Val	Gly Gly Tyr Met Ala Thr	Lys Glu Ile Ser
325	330	335
Val Gln Ala Ala Ala Asp	Leu Ser Thr Arg Leu Met	Asn Lys Glu Lys
340	345	350
Ile Gly Met Pro Lys Ile Arg	Asp Leu Arg Lys Glu Tyr	Val Leu Asp
355	360	365
Trp Ser Val Phe Ser Thr	Tyr Asn Gly Tyr Asp Ile	Lys Asn Val Gly
370	375	380
Lys Asn Val Arg Ile Ile Asn	Tyr Pro Ile Tyr Asp His	Tyr Arg Glu
385	390	395
Glu Phe Tyr Leu Leu Gly	Val Leu Phe Val Phe Ala	Phe Ile Phe Ile
405	410	415
Ser Val Ser Leu Leu His Thr	Arg Arg Arg Ser Leu Ile	Glu Arg Lys
420	425	430
Asn Leu Lys Ile Leu Glu Glu	Ala His Lys Arg Leu Thr	Leu Ser Ala
435	440	445
Asp Gly Gly Gln Ile Ser Leu	Trp Asn Met Gln Arg Ser	Asp Ile Glu
450	455	460
Phe Asp Asp Asn Tyr Ala Arg	Leu Thr Gly Val Glu Lys	Arg Lys Phe
465	470	475
Lys Arg Thr Asp Phe Leu Glu	Tyr Val His Pro Asp Asp	Ser Gln Leu
485	490	495
Leu Ser Ser Phe Tyr Glu Ala	Leu Cys Lys Ser Pro Gly	Val Glu Ile
500	505	510
Gln Arg Val Arg Phe Arg Phe	Asp Glu Lys Lys Gly Tyr	Gln Trp Tyr
515	520	525
Glu Leu Arg Cys Arg Ser Leu	Lys Asp Ile Lys Gly Glu	Met Met Leu
530	535	540
Ala Gly Ile Met Gln Asn Ile	Gln Glu Ser Val Glu Arg	Glu His Gln
545	550	555
Leu Ile Val Ala Lys Gln Met	Ala Glu Lys Ala Glu Leu	Lys Gln Ser
565	570	575
Phe Leu Asn Asn Met Ser His	Glu Ile Arg Thr Pro Leu	Asn Ala Ile
580	585	590
Val Gly Phe Thr Asn Val Leu	Leu Gly Glu Gly Ser Glu	Glu Ile Asp
595	600	605
Pro Asp Glu Lys Ala Ser Met	Leu Glu Ile Ile Asn His	Asn Asn Glu
610	615	620
Leu Leu Leu Lys Leu Ile Asn	Asp Val Leu Glu Ile Ser	Arg Leu Asp
625	630	635
Ser Gly Ser Leu Asp Phe Asp	Met Lys Glu Trp Asn Met	Thr Asp Ile
645	650	655
Val Lys Glu Ile Tyr Lys Thr	Tyr Gln Pro Leu Ile Arg	Ser Ser Leu
660	665	670
Gln Phe Arg Leu Glu Leu Asp	Asp Thr Val Ser Val Pro	Val His Thr
675	680	685
Asp Arg Leu Arg Phe Ala Gln	Val Ile Ser Asn Phe Leu	Asn Asn Ala
690	695	700
Asn Lys Phe Thr Gln Asn Gly	Tyr Ile Ala Leu Gly Cys	Lys Val Asp
705	710	715
Lys Lys His Arg Glu Val Arg	Ile Tyr Val Glu Asp Ser	Gly Lys Gly
725	730	735
Ile Asp Glu Lys Glu Leu Met	Met Ile Phe Glu Arg Phe	Tyr Lys Thr
740	745	750

Asp Glu Phe Glu Gln Gly Ser Gly Leu Gly Leu Ala Ile Ser Lys Val
 755 760 765
 Ile Ile Glu Arg Leu Ser Gly Arg Ile Lys Val His Ser Glu Lys Gly
 770 775 780
 Lys Gly Ser Cys Phe Thr Val Ile Leu Ser Leu Ala Asp Ala Pro Glu
 785 790 795 800
 Asn His Met Leu Ile
 805

<210> 9233

<211> 924

<212> PRT

<213> B.fragilis

<400> 9233

Ser Gln Thr Cys Arg Arg Asp Lys Asn Ile Ile Ile Tyr Lys Met Arg
 1 5 10 15
 Ile Glu Arg Tyr Val Ile Lys Val Arg Asp Gln Ile Arg Lys Ala Leu
 20 25 30
 Val Ser Ile Ala Glu Pro Leu Glu Tyr Ile Lys Ala Gln Lys Glu Thr
 35 40 45
 Phe Tyr Lys Ala Ala Ile Leu Phe Leu Ile Leu Leu Leu Trp Arg
 50 55 60
 Ala Tyr Glu Gly Phe Trp Ile Ser Leu Phe Asp Lys Tyr Val Leu Ser
 65 70 75 80
 Cys Leu Asn Val Ser Trp Asp Trp Val Ser Phe Thr Leu Tyr Thr Leu
 85 90 95
 Ile Ile Cys Ser Ile Val Tyr Gln Leu Val Gln Cys Phe Lys His Lys
 100 105 110
 His Ile Leu Ser Met Tyr His Leu Ser Ile Tyr Ser Val Leu Ile Ile
 115 120 125
 Val Tyr Thr Phe Tyr Arg Phe Ser Ala Phe His Lys Gly Tyr Gln Asp
 130 135 140
 Phe Ser Ser Leu Tyr Tyr Leu Asp Leu Leu Val Leu Gly Leu Leu Val
 145 150 155 160
 Leu Val Val Ser Ala Ile Ser Asn Phe Ile Ile Val Leu Met Ser Glu
 165 170 175
 Gln Arg Asp Lys Pro Asn Thr Asn Phe Phe Met Ile Pro Asp Gln Pro
 180 185 190
 Ile Thr Thr Asp Asp Asp Asp Arg Leu Asp Tyr Ala Pro Glu Ala Arg
 195 200 205
 Met Leu Ala Glu Thr Ile Ser Gly Leu Lys Leu Asn Lys Ser Leu Ser
 210 215 220
 Ile Gly Val Thr Ser Gln Trp Gly Ser Gly Lys Thr Ser Tyr Leu Asn
 225 230 235 240
 Leu Val Glu Gln Cys Leu Asp Arg Asn Leu Phe Ile Ile Ile Lys Phe
 245 250 255
 Asn Pro Arg Tyr Ser Lys Asn Val Ala Cys Ile Gln Glu Asp Phe Phe
 260 265 270
 Ser Ile Ile Ser Ser Ala Leu Lys Pro Tyr Asn Ser Cys Phe Ser Lys
 275 280 285
 Met Phe Lys Asn Tyr Met Glu Thr Leu Gln Leu Phe Asp Asp Lys Asn
 290 295 300
 Ile Val Thr Ala Ile Leu Asn Leu Lys Gly Ile Val Asp Arg Asp Ser
 305 310 315 320
 Glu Lys Glu Lys Leu Asp Met Ala Leu Lys Ile Leu Pro Lys Lys Val
 325 330 335
 Val Val Phe Leu Glu Asp Phe Asp Arg Leu Phe Lys Glu Glu Ile Ile
 340 345 350

Glu Val Phe Lys Leu Ile Asp Gly Asn Ala Ala Phe Pro Asn Leu Val
 355 360 365
 Phe Leu Thr Ala Tyr Asp Lys Ala Tyr Ile Val Lys Thr Ile Gly Ser
 370 375 380
 Asn Leu Glu Asp Gly Ala Ser Leu Phe Ser Asp Lys Phe Phe Asp Met
 385 390 395 400
 Glu Val Val Val Pro Leu Arg Pro Tyr Gln Gln Ile Phe Asp Phe Leu
 405 410 415
 Ser Lys His Leu Leu Glu Gly Leu Asn Cys Glu Val Gly Asp Glu His
 420 425 430
 Arg Tyr Gln Thr Ala Leu Glu Lys His Phe Tyr Val Ile Lys Arg Tyr
 435 440 445
 Leu Ile Thr Leu Arg Asp Val Lys Arg Phe Leu Asn Leu Phe Ile Asn
 450 455 460
 Asp Tyr Lys Phe Val Lys Gly Glu Val Asn Phe Glu Asp Tyr Phe Leu
 465 470 475 480
 Leu Thr Ile Ile Lys Phe Lys Asp Ser Glu Glu Tyr Lys Glu Leu Gly
 485 490 495
 His Asn His Lys Asn Ile Ser Asn Glu Phe Gly Arg Tyr Cys Phe Asp
 500 505 510
 Asn Asn Gly Asp Glu Ile Lys Phe Ala Asp Ile Leu Asn Ile Leu
 515 520 525
 Phe Pro Pro Asn Phe Ser Ser Leu Glu Thr Asp Ser Glu Leu Arg Asp
 530 535 540
 Asn Phe Arg Arg Ile Asn Ser Thr Ala Ser Phe Asn Asn Tyr Phe Phe
 545 550 555 560
 Asn Arg Ile Tyr Asn Gln Leu Arg Leu Ser Asp Met Glu Glu Cys Leu
 565 570 575
 Arg Lys Asp Phe Met Met Ala Lys Leu Asp Ile Asp Asn Trp Ile Glu
 580 585 590
 Asn Asn Leu Ile Gly Gly Phe Val Glu Phe Leu Gln Gln Lys Asn Leu
 595 600 605
 Leu Cys Phe Asp Asn Lys Glu Arg Phe Ile Val Phe Met Gln Ile Val
 610 615 620
 Phe Tyr Leu Ser Leu Arg Leu Phe Asp Thr Glu Val Tyr Ile Leu Ile
 625 630 635 640
 Leu Arg Leu Val Thr Val Glu His Ile Lys Gln Phe Glu Gln Arg Tyr
 645 650 655
 Thr Phe Ser Gln Met Glu Tyr Lys Ile Leu Ile Ser Glu Ile Leu Asn
 660 665 670
 Glu Gly Tyr Pro Cys Phe His Tyr Arg Ile Ile Gln Lys Leu Ile Leu
 675 680 685
 Asn Leu Cys Asn Gly Glu Leu Val Phe Glu Ile Ile Tyr Thr Lys Glu
 690 695 700
 Glu Leu Ile Asn Ile Ala Arg Lys Leu Leu Lys Gly Tyr Ile Ser Glu
 705 710 715 720
 Asn Glu Thr Met Cys Asp Val His Met Asp Ile Leu Tyr Ser Cys Val
 725 730 735
 Lys Asp Val Asn Gln Glu Thr Arg Lys Val Thr Leu Asp Glu Asp Ser
 740 745 750
 Cys Leu Ala Val Arg Asn Leu Ile Phe Leu Ser Pro Gly Tyr Tyr Ile
 755 760 765
 Ser Thr Phe Val Arg Leu Gly Met Phe Ser Ser Asn Pro Asp Met Asn
 770 775 780
 Ser Ile Ala Cys Glu Pro Tyr Trp Lys Gln Ile Phe Gly Glu Ala Gln
 785 790 795 800
 Thr Phe Glu Thr Phe Ile Leu Gly Glu Thr Leu Asn Ser Ile Pro Glu
 805 810 815
 Ile Gln Arg Val Arg Asn Phe Trp Lys Leu Tyr Ser Asn Asn Asp Tyr

	820		825		830										
Glu	Pro	Ile	Pro	Met	Glu	Arg	Met	Gly	Asn	Val	Gln	Lys	Met	Ile	Asn
	835						840					845			
Asp	Asn	Leu	Val	Ile	Leu	Met	Pro	Leu	Phe	Glu	Asn	Ile	Gln	Ala	Ile
	850					855					860				
Glu	Arg	Lys	Phe	Lys	Glu	Ile	Gln	Arg	Asp	Tyr	Asp	Val	Ala	Asn	Pro
865					870					875					880
Gln	Glu	Ser	Ile	Asp	Lys	Cys	Gln	Leu	Leu	Lys	Gln	Lys	Ile	Gly	Ala
				885					890					895	
Asp	Gly	Leu	Phe	Ile	Ala	Lys	Asn	Gly	Gln	Leu	Ile	Arg	Gln	Ile	Asp
		900						905					910		
Gln	Trp	Ile	Ser	Gly	Ile	Ser	Gly	Ser	Asn	Asn	Ala				
	915						920								

<210> 9234

<211> 344

<212> PRT

<213> B.fragilis

<400> 9234

Ser	Gly	Met	Trp	Ala	Trp	Gly	Ile	Phe	Gly	Thr	Ile	Asn	Tyr	Ala	Thr
1			5						10					15	
Thr	Asp	Glu	Arg	Phe	Thr	Ala	Ser	Leu	Gly	Val	Arg	Thr	Asp	Ala	Asn
		20						25				30			
Asn	Phe	Ser	Ser	Gly	Met	Lys	Gly	Met	Gly	Asp	Gln	Leu	Ser	Pro	Arg
		35				40						45			
Leu	Ser	Leu	Ser	Tyr	Arg	Leu	Thr	Asp	Gly	Leu	Tyr	Leu	Ser	Gly	Asn
	50					55				60					
Ala	Gly	Leu	Tyr	Tyr	Gln	Leu	Pro	Pro	Tyr	Thr	Gly	Leu	Gly	Phe	Lys
65					70					75					80
Asp	Asn	Asn	Gly	Ala	Trp	Val	Asn	Lys	Tyr	Leu	Arg	Tyr	Met	Ser	Val
				85				90					95		
Ser	Gln	Glu	Ser	Leu	Gly	Leu	Ser	Trp	His	Pro	Gly	Asn	Thr	Phe	Glu
		100					105						110		
Leu	Ser	Ala	Glu	Gly	Phe	Tyr	Lys	Gln	Tyr	Asp	Lys	Ile	Pro	Phe	Ser
	115						120					125			
Ile	Ala	Asp	Gly	Ile	Pro	Leu	Ala	Cys	Lys	Gly	Asn	Asp	Tyr	Gly	Val
	130					135					140				
Ile	Gly	Asn	Glu	Ala	Leu	Ser	Ser	Thr	Ala	Gln	Gly	Arg	Ala	Tyr	Gly
145					150					155					160
Ile	Glu	Ile	Leu	Met	Lys	Trp	Leu	Ile	Ala	Lys	Lys	Leu	Asn	Leu	Ala
			165						170						175
Ser	Ser	Phe	Thr	Leu	Phe	Lys	Ser	Glu	Tyr	Arg	Asn	Asn	Lys	Gln	Ser
		180						185					190		
Glu	Tyr	Ile	Ala	Ser	Ala	Trp	Asp	Asn	Arg	Tyr	Ile	Phe	Asn	Met	Ser
	195						200					205			
Gly	Thr	Tyr	Asn	Phe	Pro	His	Asn	Trp	Ser	Leu	Gly	Met	Lys	Ile	Ser
	210					215					220				
Cys	Ile	Gly	Gly	Ala	Pro	Tyr	Thr	Pro	Tyr	Asp	Val	Glu	Lys	Ser	Ser
225					230					235					240
Leu	Val	Thr	Ala	Trp	Asn	Ala	Gln	Gly	Arg	Pro	Tyr	Tyr	Asp	Tyr	Thr
			245						250					255	
Lys	Tyr	Asn	Thr	Gly	Arg	Leu	Pro	Ala	Phe	Gly	Gln	Leu	Asp	Val	Arg
		260						265					270		
Val	Asp	Lys	Thr	Phe	Tyr	Leu	Lys	Arg	Cys	Met	Leu	Gly	Phe	Tyr	Ile
	275						280					285			
Asp	Leu	Gln	Asn	Val	Thr	Asn	Ser	Lys	Phe	Lys	Gln	Pro	Asp	Ile	Leu
	290					295					300				
Met	Ser	Thr	Gly	Val	Ile	Glu	Asn	Pro	Ser	Ala	Pro	Met	Ala	Glu	Gln

5240

305 310 315 320
 Arg Tyr Lys Met Lys Tyr Ile Thr Gln Lys Ser Gly Thr Leu Met Pro
 325 330 335
 Thr Leu Gly Ile Thr Phe Glu Tyr
 340

<210> 9235
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 9235
 Pro Val Pro Trp Glu Arg Asn Ser Met Arg Gln Ile Met Ser Ala Tyr
 1 5 10 15
 Met Trp Asn Arg Glu Phe Arg Ile Ser Leu Met Met Ala Pro Lys Tyr
 20 25 30
 Lys Pro Ser Glu Lys Lys Gly Leu Val Thr Leu Thr Cys Arg Gln Asp
 35 40 45
 Cys Asp Ser Leu Ile Lys Val Gly Trp Gln Lys Ile Cys Arg Leu His
 50 55 60
 Tyr Leu Pro Val Leu Ala Leu Tyr Cys Asn Glu Leu Arg Gln Glu Gln
 65 70 75 80
 Gly Asp Phe Tyr Ile Val Thr Tyr Lys Ile Ile Asn Lys Cys Ser Arg
 85 90 95
 His Asn Ser Pro Gln Ser Glu Leu Asn Leu Leu Met Ala Asn Glu Ser
 100 105 110
 Leu Ser Val
 115

<210> 9236
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 9236
 Val Ser Val Arg Asn Thr Ser Pro Pro Leu Leu Cys Arg Phe Ser Phe
 1 5 10 15
 Arg Ile Ile Arg Leu Lys Ser Gly Ala Gly Gly Asn Ser Arg Ser Ser
 20 25 30
 Leu Ser Ser Val His Ala Glu Val Ala Met Thr Glu Asn Asp Lys Lys
 35 40 45
 Lys Gln Tyr Arg Ser Leu Phe Ile Ser Ile Met Phe Tyr Leu Pro Ala
 50 55 60
 Asn Val Val Asn Asn Leu Leu Tyr Leu Pro Arg Leu Trp Tyr Lys Asn
 65 70 75 80
 Ala Phe Asn Val Arg Phe Leu Ser Ile Pro Asp Ser Ser Ile Phe Ala
 85 90 95
 Thr Tyr Lys Asp Trp Thr Leu Thr Met Asn Ser Lys Tyr Arg
 100 105 110

<210> 9237
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9237
 Leu Glu Pro Arg Ser Ser Gly Arg Ala Asp Gln Val Ile Thr Ile Ile
 1 5 10 15
 Leu Pro Ser Lys Lys Arg Ile Asp Ile Leu Asn Gln Cys Ala Phe Ile


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<210> 9238
<211> 173
<212> PRT
<213> B.fragilis
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<210> 9239
<211> 214
<212> PRT
<213> B.fragilis
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<400> 9239																
Gln	Lys	Phe	Ser	Tyr	Val	Cys	Ser	Leu	Ile	Thr	Met	Glu	Arg	Arg	Met	
1				5					10					15		
Ala	Gln	Thr	Leu	Thr	Asn	Leu	Asn	Ile	Asn	Asp	Asn	Asn	Ala	Val	Ile	
			20					25					30			
Ser	Ala	Leu	Arg	Glu	Gly	Asp	Glu	Glu	Val	Phe	Asp	His	Ile	Tyr	Arg	
		35					40					45				
Tyr	Tyr	Phe	Arg	Gly	Leu	Cys	Ala	Phe	Cys	Ser	Gln	Tyr	Val	Thr	Leu	
	50					55					60					
Ser	Glu	Ser	Glu	Glu	Ile	Val	Gln	Asp	Thr	Met	Met	Trp	Leu	Trp	Glu	
65					70					75					80	
Asn	Arg	Lys	Thr	Leu	Ile	Pro	Glu	Leu	Thr	Leu	Lys	Thr	Leu	Leu	Phe	
				85					90					95		
Thr	Ile	Val	Lys	Asn	Lys	Ala	Leu	Asn	Lys	Ile	Ser	His	Phe	Glu	Ile	
			100					105					110			
Lys	Arg	Lys	Val	His	Gln	Glu	Ile	Ala	Glu	Lys	Tyr	Glu	Thr	Glu	Phe	
		115					120					125				
Ser	Ser	Pro	Asp	Phe	Tyr	Leu	Glu	Asn	Glu	Leu	Phe	Arg	Leu	Tyr	Glu	
	130					135					140					

Glu Ala Leu Arg Lys Leu Pro Ala Glu Phe Arg Gln Ala Tyr Glu Met
 145 150 155 160
 Asn Arg Ser Leu Gln Met Thr His Lys Glu Ile Ala Glu Lys Leu Asn
 165 170 175
 Val Ser Pro Gln Thr Ile Asn Tyr Arg Ile Gly Gln Ala Leu Lys Ile
 180 185 190
 Leu Arg Ser Glu Leu Lys Asp Tyr Leu Pro Leu Ile Met Leu Phe Leu
 195 200 205
 Phe Leu Gln Gly His Lys
 210

<210> 9240

<211> 338

<212> PRT

<213> B.fragilis

<400> 9240

Asp Met Asn Arg His Leu Asn Phe Val Thr Leu Ile Cys Leu Ile Thr
 1 5 10 15
 Gly Phe Val Ser Leu Ala Ser Cys Ser Asn Asp Asp Asp Glu Met Asp
 20 25 30
 Lys Tyr Gln Lys Ile Tyr Ile Arg Thr Gly Val Ala Pro Gly Ala Glu
 35 40 45
 Met Gly Ala Ala Val Val Val Asp Cys Val Ser Asn Ser Ser Thr Ala
 50 55 60
 Asp Arg Ser Asp Phe Glu Ile Gln Leu Cys Ala Val Gln Pro Val Thr
 65 70 75 80
 Arg Asp Val Thr Ala Ala Leu Gly Val Asp Thr Leu Lys Val Asp Thr
 85 90 95
 Tyr Asn Ser Ala Asn Lys Thr Lys Cys Lys Leu Leu Pro Gln Asp Asn
 100 105 110
 Tyr Thr Ile Glu Thr Ser Glu Val Val Leu Lys Thr Gly Gln Thr Val
 115 120 125
 Ala Asp Ser Ser Phe Gln Val Val Leu Lys Asn Ile Glu Lys Leu Thr
 130 135 140
 Asn Pro Asp Gly Tyr Val Leu Pro Val Ala Leu Lys Gly Val Thr Gly
 145 150 155 160
 Met Asp Glu Gln Ala Val Ser Thr Ser Met Lys Thr Val Tyr Ile Arg
 165 170 175
 Ile Tyr Thr Ser Val Leu Tyr Thr Ser Tyr Thr Lys Pro Gly Asn Trp
 180 185 190
 Ser Ala Val Asp Arg Ser Ala Trp Ser Val Ser Cys Ser Asn Val Tyr
 195 200 205
 Ala Asp Asp Asp Ala Lys Tyr Gly Ala His Leu Ala Ile Asp Gly Glu
 210 215 220
 Ile Asn Thr Thr Trp Phe Thr Trp Gly Val Ala Asn Ala Gly Glu Cys
 225 230 235 240
 Trp Trp Asn Thr Val Leu Asp Arg Pro Val Thr Leu Thr Gly Phe Ser
 245 250 255
 Val Thr Lys Gln Ser Ala Tyr Gly Ser Gly Tyr Asn Leu Arg Ser Ala
 260 265 270
 Glu Ile Lys Val Arg Lys Glu Gly Glu Thr Glu Trp Val Thr Tyr Pro
 275 280 285
 Arg Val Leu Thr Phe Arg Asn Phe Lys Gly Ala Asp Pro Gln Tyr Ala
 290 295 300
 Ala Ile Glu Pro Pro Ile Pro Asn Val Lys Glu Phe Arg Ile Asn Cys
 305 310 315 320
 Leu Thr Pro Asp Asn Tyr Thr Gly Phe Ala Glu Ile Asn Leu Tyr Val
 325 330 335

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<210> 9241
<211> 483
<212> PRT
<213> B.fragilis
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Ala 1	Asp	Asn	Arg	Arg 5	Phe	His	Gln	Gln	Ser 10	Lys	Ser	Asn	Phe	Lys 15	Asn
Met	Ala	Thr	Lys 20	Ser	Ser	Ile	His	Ile	Lys 25	Pro	Cys	Arg	Val 30	Thr	Ser
Ser	Gly	Ala	His 35	Asn	Arg	Arg	Thr	Ala	Glu 40	Tyr	Met	Arg 45	Asn	Ile	Gly
Glu	Ser	Arg	Ile 50	Tyr	Ile	Val	Pro	Glu	Leu 55	Thr	Ser	Asn 60	Asn	Glu	Gln
Trp 65	Ile	Asn	Pro	Gly	Phe 70	Gly	Ser	Pro	Asp	Leu 75	Gln	Ala	His	Tyr	Asp
Ser	Ile	Lys	Arg	Met 85	Val	Lys	Glu	Lys	Thr 90	Gly	Arg	Ala	Met	Gln	Glu
Lys	Glu	Arg	Glu 100	Arg	Lys	Gly	Lys	Asn 105	Gly	Lys	Ile	Ile 110	Lys	Val	Ala
Gly	Cys	Ser	Pro 115	Ile	Arg	Glu	Gly	Val 120	Leu	Leu	Ile	Arg 125	Pro	Asp	Thr
Thr	Leu	Ala	Asp 130	Val	Arg	Lys 135	Phe	Gly	Glu	Glu	Cys 140	Gln	Arg	Arg	Trp
Gly 145	Ile	Thr	Pro	Leu 150	Gln	Ile	Phe	Leu	His 155	Lys	Asp	Glu	Gly	His	Trp
Leu	Ser	Gly	Gln 165	Pro	Lys	Thr	Gly	Asp	Arg 170	Glu	Ser	Phe	Gln	Val	Gly
Glu	Lys	Trp	Phe 180	Lys	Pro	Asn	Tyr	His 185	Ala	His	Ile	Val 190	Phe	Asp	Trp
Met	Asn	His 195	Asp	Thr	Gly	Lys	Ser 200	Gln	Lys	Leu	Asn 205	Asp	Asp	Asp	Met
Met	Glu	Met 210	Gln	Thr	Leu	Ala 215	Ser	Asp	Ile	Leu	Ser 220	Met	Gln	Arg	Gly
Gln 225	Ser	Lys	Ser	Glu 230	Thr	Gly	Lys	Glu	His 235	Leu	Glu	Arg	Asn	Asp	Phe
Ile	Ile	Glu	Lys 245	Gln	Arg	Ala	Glu	Leu	Gln 250	Arg	Met	Asp	Ala	Ala	Lys
Arg	His	Lys	Glu 260	Glu	Gln	Ile	Gly	Leu	Ala 265	Glu	Gln	Glu	Leu	Lys	Gln
Val	Lys	Ser 275	Glu	Ile	Arg	Thr	Asp 280	Lys	Leu	Lys	Lys	Thr 285	Ala	Thr	Asn
Ala	Ala	Thr 290	Ala	Ile	Ala	Ser 295	Gly	Val	Gly	Ser	Leu 300	Phe	Gly	Ser	Gly
Lys 305	Met	Lys	Glu	Leu 310	Glu	Arg	Thr	Asn	Glu	Asp 315	Leu	His	Gln	Glu	Ile
Ala	Lys	Arg	Asp 325	Lys	Gly	Ile	Asp	Thr	Leu 330	Lys	Ile	Gln	Met	Gln	Glu
Met	Gln	Glu	Arg 340	His	Gly	Lys	Gln	Ile 345	Arg	Asn	Leu	Gln	Ser	Ile	His
Asn	Gln	Glu 355	Leu	Glu	Ala	Lys	Asp 360	Arg	Glu	Ile	Ser	Arg 365	Leu	Asn	Thr
Leu	Leu	Glu 370	Lys	Ala	Phe	Lys 375	Trp	Phe	Pro	Met	Leu 380	Arg	Glu	Met	Leu
Arg 385	Met	Glu	Lys	Leu 390	Cys	Ala	Val	Ile	Gly	Phe 395	Thr	Lys	Asp	Met	Ile

Asp Cys Leu Leu Thr Arg Lys Glu Ala Ile Gln Cys Asn Gly Lys Ile
 405 410 415
 Tyr Ser Glu Glu His Arg Arg Lys Phe Glu Ile Lys Asn Asn Ile Phe
 420 425 430
 Lys Val Glu Lys Asn Pro Thr Asp Asp Ser Lys Leu Val Leu Thr Ile
 435 440 445
 Asn Arg Gln Pro Ile Ser Glu Trp Phe Lys Glu Gln Trp Glu Lys Leu
 450 455 460
 Arg Gln Gly Leu Arg Gln Pro Thr Glu Glu Pro Arg Lys Ser Arg Gly
 465 470 475 480
 Phe Lys Leu

<210> 9242
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 9242
 Ala Lys Ile Arg Asp Ile Lys Asn Ile Thr Gln Asp Tyr Asp Lys Lys
 1 5 10 15
 Leu Leu Ser Leu Phe Asn Asn Thr Thr His Pro Gly Lys Leu Leu Thr
 20 25 30
 Ser Ile Thr Leu Phe Leu Leu Asn Phe Ile Asn Thr Thr His Ala Lys
 35 40 45
 Lys His Arg Arg Leu Ser Ser Pro Met Pro Leu Ala Pro Leu Ser Thr
 50 55 60
 Ile
 65

<210> 9243
 <211> 137
 <212> PRT
 <213> B.fragilis

<400> 9243
 Leu Met Ala Ser Leu Lys Val Phe Ile Arg Lys Pro Gly Leu Thr Leu
 1 5 10 15
 Thr Ile Ser Leu Cys Arg His Thr Leu Thr Leu Ala Gly Asn Ser Asp
 20 25 30
 Ala Asn Leu Asp Arg Arg Leu Ala Gly Thr Ile Ala Asn Phe Lys Gly
 35 40 45
 Ile Leu Pro Pro Glu Lys Val Ala Asn Met Tyr Ile Val Thr Glu Asn
 50 55 60
 Phe Glu Ser Tyr Ala Pro Thr Gly Gly Gly Asp Tyr Val Asp Arg Tyr
 65 70 75 80
 Gly Asn Lys Met Arg Ala Leu Ala Gly Met Ala Arg Trp Thr Pro Thr
 85 90 95
 Ile Asp Gly Lys Gln Val Arg Lys Gly Gly Val Gly Thr Tyr His Met
 100 105 110
 Glu Tyr Asp Tyr Pro Gly Asp Ile Glu Tyr Lys Tyr Leu Arg Glu Ala
 115 120 125
 Ile Arg Ile Met Asn Pro Ala Val Lys
 130 135

<210> 9244
 <211> 327
 <212> PRT
 <213> B.fragilis

<400> 9244

Leu Pro Phe Gly Asn Phe Ser Phe Phe Pro Val Thr Tyr Leu Cys Ala
 1 5 10 15
 Gln Ile Leu Ile Leu Tyr Asp Met Lys Ser Leu Lys Gly Ile Ile Tyr
 20 25 30
 Ala Met Ile Ser Ser Gly Thr Phe Gly Leu Ile Pro Leu Phe Thr Ile
 35 40 45
 Pro Leu Met Gly Asn Met Glu Met Asn Glu Ser Asn Ile Leu Phe Tyr
 50 55 60
 Arg Phe Leu Phe Ser Thr Leu Met Met Gly Ala Val Cys Leu Leu His
 65 70 75 80
 Lys Ser Thr Leu Lys Ile Asn Met Lys His Leu Ile Ser Ile Ile Gly
 85 90 95
 Leu Gly Ala Leu Tyr Ala Leu Thr Ala Leu Phe Leu Ile Tyr Ser Tyr
 100 105 110
 His Tyr Ile Thr Ser Gly Val Ala Thr Thr Ile His Phe Leu Tyr Pro
 115 120 125
 Ile Cys Val Ser Phe Leu Met Val Val Phe Phe Lys Glu Gln Lys Ser
 130 135 140
 Lys Ser Leu Phe Leu Ala Ala Ser Leu Ser Leu Ile Gly Val Ala Leu
 145 150 155 160
 Met Cys Trp Ser Gly Gly Gly Ser Ile Arg Leu Met Gly Ile Gly Leu
 165 170 175
 Ala Ala Leu Thr Ile Leu Thr Tyr Gly Ile Tyr Ile Val Ala Leu Asn
 180 185 190
 Gln Leu Asp Ile Gly Lys Leu Pro Ala Glu Val Leu Thr Phe Tyr Val
 195 200 205
 Leu Leu Gly Gly Cys Val Ile Phe Phe Ile Tyr Ser Leu Phe Thr Ala
 210 215 220
 Gly Ile Ser Ser Ile Pro Ser Thr Lys Ala Gly Phe Tyr Ile Leu Ala
 225 230 235 240
 Leu Ala Phe Leu Ser Thr Val Ile Ser Asp Leu Thr Leu Ile Leu Ala
 245 250 255
 Val Lys Tyr Ala Gly Ser Thr Thr Thr Ala Ile Leu Gly Ser Met Glu
 260 265 270
 Pro Leu Val Ala Val Val Val Gly Val Leu Val Phe Ser Glu His Phe
 275 280 285
 Thr Leu Gln Ser Leu Ile Gly Leu Leu Leu Ile Leu Met Ser Val Ile
 290 295 300
 Ile Val Ile Leu Ala Asp Gln Gln Lys Lys Ser Lys Arg Ile Thr Glu
 305 310 315 320
 Gln Lys Ile Ile Lys Pro His
 325

<210> 9245

<211> 211

<212> PRT

<213> B.fragilis

<400> 9245

Ile Cys Phe Gly Lys Ser Ser Ala Leu Phe Ser Lys Lys Asn Ile Leu
 1 5 10 15
 Leu Ser Thr Met Pro Leu Ser Phe Gly Thr Arg Trp Pro Lys Glu Phe
 20 25 30
 Ala Ile Lys Met Val Pro Leu Phe Leu Lys Thr Ser Val Ala Gly Trp
 35 40 45
 Gly Leu Gly Leu Ser Thr Gln Asp Ile Gly Leu Val Tyr Gly Thr Phe
 50 55 60

Gly Ala Gly Ala Phe Ile Leu Gly Ser Leu Leu Ala Gly Tyr Tyr Ile
 65 70 75 80
 Ser Ala Phe Gly Leu Arg Lys Thr Leu Phe Ser Leu Cys Cys Ala Phe
 85 90 95
 Asn Ile Pro Phe Leu Val Tyr Phe Leu Leu Ala Leu Tyr Gln Pro Ser
 100 105 110
 Asp Leu Trp Ile Ile Gly Met Ala Ile Val Ser Glu Tyr Leu Gly Tyr
 115 120 125
 Gly Phe Gly Phe Val Gly Leu Met Leu Phe Met Met Gln Gln Val Ala
 130 135 140
 Pro Gly Lys His Gln Met Ala His Tyr Ala Phe Ala Thr Gly Ile Met
 145 150 155 160
 Asn Leu Gly Val Met Leu Pro Gly Met Met Ser Gly Tyr Leu Ser Asp
 165 170 175
 Trp Leu Gly Tyr Arg Asp Phe Phe Ile Trp Val Leu Ile Ala Thr Ile
 180 185 190
 Pro Ala Phe Ile Val Thr Trp Leu Val Pro Phe Thr Tyr Pro Asp Gly
 195 200 205
 Lys Lys Lys
 210

<210> 9246

<211> 301

<212> PRT

<213> B.fragilis

<400> 9246

Arg Glu Ala Gly Arg Gly Val Phe Val Leu Thr Leu Ser Ala His Ile
 1 5 10 15
 Thr Ile Glu Lys Gly Lys Ile Ile Glu Leu Ile Lys Ser Lys Arg Ile
 20 25 30
 Pro Ile Ile Glu Ile Ser Ser Leu Ser His Pro Gly Val Glu Ile Phe
 35 40 45
 Ser Thr Leu Thr Glu Ala Gln Leu Arg Asn Arg Ile Asp Ser Asp Arg
 50 55 60
 Gly Ile Phe Ile Ala Glu Ser Pro Lys Val Ile Gln Val Ala Leu Asp
 65 70 75 80
 Ala Gly Tyr Glu Pro Leu Ala Ile Leu Cys Glu Gln Lys His Ile Ile
 85 90 95
 Gly Asp Ala Ala Val Ile Ile Glu Arg Cys Gly Asp Ile Pro Val Tyr
 100 105 110
 Thr Gly Lys Arg Asp Ile Leu Ala Leu Leu Thr Gly Tyr Thr Leu Thr
 115 120 125
 Arg Gly Val Leu Cys Ala Met Arg Arg Pro Glu Leu Arg Ser Val Glu
 130 135 140
 Glu Val Cys Arg Glu Ala Lys Arg Ile Val Val Ile Asp Gly Val Val
 145 150 155 160
 Asp Thr Thr Asn Ile Gly Ala Ile Phe Arg Ser Ala Ala Ala Leu Gly
 165 170 175
 Ile Asp Ala Val Leu Leu Thr Arg Asn Ser Cys Asp Pro Leu Asn Arg
 180 185 190
 Arg Ala Val Arg Val Ser Met Gly Ser Ile Phe Leu Val Ser Trp Thr
 195 200 205
 Trp Ile Asp Gly Ser Leu Ser Arg Leu Gly Asp Leu Gly Phe Arg Thr
 210 215 220
 Ala Ala Met Ala Leu Thr Asp Asp Ser Ile Ser Ile Asp Asp Pro Val
 225 230 235 240
 Leu Lys Thr Glu Pro Lys Leu Ala Ile Ile Met Gly Thr Glu Gly Asp
 245 250 255

Gly Leu Pro Tyr Glu Thr Ile Ser Glu Ala Asp Tyr Val Val Arg Ile
 260 265 270
 Pro Met Ser His Ser Val Asp Ser Leu Asn Val Ala Ala Ala Ser
 275 280 285
 Val Ala Phe Trp Glu Leu Arg Ala Pro Thr Phe Lys Glu
 290 295 300

<210> 9247
 <211> 355
 <212> PRT
 <213> B.fragilis

<400> 9247
 Ala Asp Arg Gly Leu Leu Asp Gly Arg Pro Phe Leu Tyr Ile Ile Phe
 1 5 10 15
 Met Tyr Thr Ile Asn Ile Ile Pro Arg Val Leu His Phe Lys Gln Pro
 20 25 30
 Ala Gly Thr Ser Arg Gly Ser Tyr Thr Thr Arg Asn Val Trp Tyr Ile
 35 40 45
 His Leu Ser Ser Ile Glu Cys Pro Gly Arg Val Gly Val Gly Glu Cys
 50 55 60
 Ala Pro Leu Pro Lys Leu Ser Cys Asp Asp Leu Pro Asp Tyr Glu Gln
 65 70 75 80
 Val Leu Arg Ser Ala Cys Gln Arg Leu Glu Gln Thr Gly Glu Leu Asp
 85 90 95
 Ile Glu Ser Leu Arg Gly Tyr Pro Ser Ile Leu Phe Gly Leu Glu Thr
 100 105 110
 Ala Leu Arg His Tyr Glu Thr Gln Ser Trp Ala Leu Trp Asp Thr Pro
 115 120 125
 Phe Ser Arg Gly Glu Ala Gly Ile Pro Ile Asn Gly Leu Ile Trp Met
 130 135 140
 Gly Ser Phe Asp Arg Met Leu Gln Gln Ile Glu Val Lys Met Gln Ala
 145 150 155 160
 Gly Tyr Arg Cys Ile Lys Leu Lys Ile Gly Ala Ile Asn Phe Glu Glu
 165 170 175
 Glu Leu Ala Leu Leu Arg His Ile Arg Ala His Tyr Ser Ala Arg Glu
 180 185 190
 Ile Glu Leu Arg Val Asp Ala Asn Gly Ala Phe Ser Pro Ala Asp Ala
 195 200 205
 Met Asp Lys Leu Asn Arg Leu Ala Glu Leu Asp Leu His Ser Ile Glu
 210 215 220
 Gln Pro Ile Arg Thr Gly Gln Trp Glu Glu Met Ala Arg Leu Ala Ala
 225 230 235 240
 Glu Ser Pro Leu Pro Ile Ala Leu Asp Glu Glu Leu Ile Gly Cys Asn
 245 250 255
 Ala Leu Glu Arg Lys Arg Glu Leu Leu Ala Ala Ile His Pro Arg Tyr
 260 265 270
 Ile Ile Leu Lys Pro Ser Leu His Gly Gly Ile Ser Gly Gly Asn Glu
 275 280 285
 Trp Ile Ala Glu Ala Glu Lys Gln His Ile Gly Trp Trp Ile Thr Ser
 290 295 300
 Ala Leu Glu Ser Asn Ile Gly Leu Asn Ala Ile Ala Gln Trp Cys Ala
 305 310 315 320
 Thr Phe Arg Asn Pro Leu Pro Gln Gly Leu Gly Thr Gly Leu Leu Phe
 325 330 335
 Thr Asp Asn Val Glu Met Pro Leu Glu Ile Arg Lys Asp Cys Leu Trp
 340 345 350
 Phe Cys Lys
 355

5247
 B.fragilis
 9247
 355
 PRT
 B.fragilis

<210> 9248
 <211> 169
 <212> PRT
 <213> B.fragilis

<400> 9248
 Ile Asp Met Gly Lys Glu Lys Asn Lys Ile Ala Val Leu Asn Asn Pro
 1 5 10 15
 Ile Glu His Ala Ile Lys Ile Ile Val Ala Leu Lys Cys Ala Met Thr
 20 25 30
 Pro Leu Thr Arg Asp Arg Leu Val Ala Tyr Glu Tyr Phe Ala Leu His
 35 40 45
 Leu Thr Asp Leu Asn Lys Asn Ala Glu Ser Leu Phe Pro Gln Ile Pro
 50 55 60
 Tyr Arg Ala Cys Thr Tyr Val Cys Asn His Thr Asp Ile Thr Met Ala
 65 70 75 80
 Leu Glu Ile Leu Leu Ser Arg Asp Leu Ile Lys Tyr Ala Ile Lys Asn
 85 90 95
 Asp Arg Leu Cys Tyr Thr Leu Thr Glu Ala Gly Ile Leu Phe Glu Glu
 100 105 110
 Tyr Leu Gln Asn Glu Tyr Lys Gln Arg Leu Thr Ile Met Met Val Glu
 115 120 125
 Val Val Ser Leu Leu Lys Asn Lys Ser Asp Ala Asp Ile Gln Glu Tyr
 130 135 140
 Val Glu Gln Asn Ile Gly Lys Trp Gly Ser Glu Phe Glu Arg Glu Tyr
 145 150 155 160
 Ile Leu Ile Lys Asp Val Asn His Gly
 165

<210> 9249
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9249
 Glu Thr Ile Met Glu Pro Ile Ile Asn Ser Gln Met Pro Glu Phe Lys
 1 5 10 15
 Val Gln Ala Phe Gln Asn Gly Ser Phe Lys Thr Val Ser Ser Glu Asp
 20 25 30
 Val Lys Gly Lys Trp Ala Ile Phe Phe Tyr Pro Ala Asp Phe Thr
 35 40 45
 Phe Val Cys Pro Thr Glu Leu Val Asp Val Ala Glu Lys Tyr Glu Gln
 50 55 60
 Phe Gln Ala Met Gly Val Glu Val Tyr Ser Val Ser Thr Asp Ser His
 65 70 75 80
 Phe Val His Lys Ala Trp His Asp Ala Ser Glu Ser Ile Arg Lys Ile
 85 90 95
 Lys Tyr Pro Met Leu Ala Asp Pro Thr Gly Val Leu Ser Arg Gly Phe
 100 105 110
 Gly Val Met Ile Glu Glu Asp Gly Met Ala Tyr Arg Gly Thr Phe Leu
 115 120 125
 Val Asn Pro Glu Gly Lys Ile Lys Ile Ala Glu Ile Gln Asp Asn Asn
 130 135 140
 Ile Gly Arg Asn Ala Asp Glu Leu Leu Arg Lys Val Glu Ala Ala Gln
 145 150 155 160
 Phe Val Ala Thr His Asp Gly Glu Val Cys Pro Ala Lys Trp Lys Lys
 165 170 175
 Gly Glu Ala Thr Leu Lys Pro Ser Ile Asp Leu Val Gly Lys Ile

180

185

190

<210> 9250

<211> 400

<212> PRT

<213> B.fragilis

<400> 9250

Lys	Ser	Ile	Ile	Met	Arg	Gln	Thr	Phe	Ser	Leu	Leu	Phe	Phe	Leu	Lys
1				5					10					15	
Lys	Arg	Gln	Asn	His	Met	Asp	Gly	Leu	His	Pro	Ile	Met	Val	Arg	Ile
			20					25					30		
Thr	Ile	Asn	Gly	Lys	Ser	Val	Glu	Ile	Cys	Thr	Gly	Gln	Lys	Ala	Leu
		35					40					45			
Leu	Ala	Asn	Trp	Ser	Ile	Arg	Leu	His	Gln	Cys	Val	Gly	Ser	Cys	Ala
	50					55					60				
Lys	Gln	Thr	Asn	Leu	Phe	Leu	Lys	Ser	Ile	Arg	Phe	Arg	Leu	Asn	Gln
65					70					75					80
Ile	Phe	Tyr	Gln	Gln	Ser	Leu	Tyr	Gly	Glu	Thr	Thr	Thr	Pro	Gln	Lys
			85						90					95	
Ile	Lys	Asp	Thr	Phe	Thr	Gly	Ala	Asp	Lys	Lys	Asn	His	Tyr	Leu	Leu
		100						105					110		
Ser	Leu	Phe	Glu	Leu	His	Asn	Glu	Ser	Ile	Arg	Lys	Gln	Val	Gly	Ile
		115					120					125			
Ser	Lys	Ser	Pro	Thr	Thr	Phe	Arg	Lys	Tyr	Glu	Thr	Thr	Arg	Lys	Tyr
	130					135					140				
Leu	Gln	Gly	Tyr	Leu	Arg	Ser	Lys	Cys	Leu	Glu	Asp	Ile	Ile	Leu	Glu
145					150					155					160
Asn	Ile	Asn	His	Thr	Phe	Ile	Cys	Asp	Phe	Glu	Val	Tyr	Leu	Arg	Val
			165						170					175	
Thr	Ala	His	Cys	Ala	His	Asn	Thr	Thr	Ala	Lys	Phe	Met	Gln	Phe	Phe
			180						185				190		
Lys	Arg	Ile	Ile	Ile	Leu	Ala	Leu	Asn	Asn	Gly	Tyr	Ile	Thr	Lys	Asn
		195					200					205			
Pro	Phe	Ser	Glu	Tyr	Gln	Ile	Lys	Leu	Gln	Lys	Val	Asp	Arg	Gly	Tyr
	210					215					220				
Leu	Thr	Arg	Glu	Glu	Leu	Gln	Arg	Ile	Lys	Glu	Lys	Lys	Ile	Glu	Ile
225					230					235					240
Lys	Arg	Leu	Val	Leu	Val	Arg	Asp	Leu	Phe	Leu	Phe	Ala	Cys	Tyr	Thr
			245						250					255	
Gly	Leu	Ser	Tyr	Ile	Asp	Leu	Lys	Asn	Leu	Ser	Lys	His	His	Leu	Tyr
			260					265					270		
Ile	Ala	His	Asp	Gly	Asn	Leu	Trp	Leu	Arg	Met	Asn	Arg	Asn	Lys	Ser
		275					280					285			
Gly	Glu	Thr	Ala	Asn	Val	Tyr	Leu	Phe	Asn	Leu	Pro	Lys	Thr	Leu	Ile
	290					295					300				
Ala	Lys	Tyr	Glu	Asn	Pro	Asp	Ser	Ile	Tyr	Leu	Phe	Pro	Val	Pro	Ser
305					310					315					320
Asn	Gln	Lys	Val	Asn	Ala	Tyr	Leu	Lys	Glu	Ile	Ala	Asp	Ile	Cys	Gly
			325						330					335	
Ile	His	Lys	Asn	Leu	Thr	Phe	His	Val	Ala	Arg	His	Thr	Met	Ala	Thr
			340					345					350		
Thr	Val	Cys	Leu	Ala	Asn	Gly	Val	Pro	Ile	Glu	Ser	Leu	Ser	Lys	Val
		355				360						365			
Leu	Gly	His	Thr	Asn	Ile	Lys	Thr	Thr	Gln	Leu	Tyr	Ala	Lys	Ile	Thr
	370					375					380				
Asp	Glu	Lys	Leu	Ser	Asn	Asp	Leu	Ala	Ile	Leu	Met	Ser	Lys	Ile	Asp
385					390					395					400

<210> 9251
 <211> 445
 <212> PRT
 <213> B.fragilis

<400> 9251

Glu	Pro	Asn	Ile	Asp	Phe	Ile	Met	Glu	Leu	Tyr	Arg	Ser	Ile	Ile	Glu
1				5					10					15	
Asn	Leu	Lys	Asn	Trp	Lys	Ala	Ser	Pro	Asp	Arg	Lys	Pro	Leu	Ile	Leu
			20					25					30		
Lys	Gly	Ala	Arg	Gln	Thr	Gly	Lys	Thr	Trp	Ile	Leu	Glu	His	Phe	Gly
		35					40					45			
Arg	Thr	Glu	Phe	Glu	His	Val	Ala	Ser	Phe	Asn	Phe	Asp	Lys	Asp	Glu
	50					55				60					
Ser	Leu	Asn	Glu	Ile	Phe	Glu	Lys	Thr	Lys	Val	Pro	Glu	Arg	Ile	Ile
65					70					75					80
Ser	Gln	Leu	Lys	Leu	His	Thr	Asp	Ser	Pro	Ile	Leu	Pro	Gly	Lys	Thr
			85						90					95	
Leu	Ile	Ile	Phe	Asp	Glu	Ile	Gln	Glu	Cys	Asn	Lys	Ala	Leu	Asn	Ala
			100					105					110		
Leu	Lys	Tyr	Phe	Cys	Glu	Asp	Ala	Pro	Glu	Tyr	Ile	Val	Val	Ala	Ala
		115					120					125			
Gly	Ser	Leu	Leu	Gly	Val	Thr	Leu	Ser	Lys	Gly	Asp	Ser	Phe	Pro	Val
	130					135					140				
Gly	Lys	Val	Glu	Phe	Met	Asp	Leu	Tyr	Pro	Leu	Thr	Phe	Arg	Glu	Phe
145					150					155					160
Leu	Lys	Val	Asn	Asp	Glu	Lys	Ile	Tyr	Gln	Tyr	Ile	Glu	Glu	Ile	Ser
			165						170					175	
Met	Ile	Glu	Pro	Leu	Pro	Gln	Ile	Val	Thr	Asn	Lys	Leu	Thr	Glu	Tyr
			180					185					190		
Tyr	Arg	Gln	Tyr	Leu	Val	Val	Gly	Gly	Met	Pro	Ala	Ala	Val	Lys	Ala
		195					200					205			
Phe	Met	Glu	Asn	Lys	Gly	Met	Glu	Ala	Val	Lys	Arg	Glu	Gln	Arg	Phe
	210					215					220				
Ile	Leu	Asp	Ala	Tyr	Ala	Leu	Asp	Phe	Ser	Lys	His	Ala	Glu	Ser	Lys
225					230					235					240
Asp	Ile	Pro	Arg	Ile	Met	Asn	Ile	Trp	Asn	Ser	Ile	Pro	Gly	Gln	Leu
			245						250					255	
Ala	Lys	Glu	Asn	Arg	Lys	Phe	Ile	Tyr	Lys	Met	Val	Lys	Pro	Gly	Ala
			260					265					270		
Arg	Ala	Arg	Asp	Tyr	Glu	Asp	Ala	Leu	Leu	Trp	Leu	Glu	Ser	Ala	Gly
	275					280						285			
Leu	Ile	His	Arg	Val	Phe	Cys	Cys	Ser	Lys	Pro	Phe	Leu	Pro	Leu	Lys
	290					295					300				
Ser	Tyr	Asp	Asp	Leu	Ser	Ala	Phe	Lys	Ile	Tyr	Leu	Ser	Asp	Ile	Gly
305					310					315					320
Leu	Leu	Arg	Glu	Leu	Ala	Gly	Leu	Pro	Pro	Glu	Ala	Ile	Leu	Ser	Gly
			325					330					335		
Asn	Val	Val	Tyr	Thr	Glu	Phe	Lys	Gly	Ala	Leu	Ala	Glu	Asn	Tyr	Val
			340					345					350		
Leu	Gln	Ser	Leu	Val	Cys	Gln	Ile	Glu	Val	Leu	Pro	Arg	Tyr	Trp	Thr
	355					360						365			
Ser	Leu	Gly	Lys	Ala	Glu	Val	Asp	Phe	Ile	Ile	Gln	Leu	Asn	Met	Asp
	370					375					380				
Ile	Ile	Pro	Ala	Glu	Val	Lys	Ser	Glu	Thr	Arg	Leu	Gly	Gly	Lys	Ser
385					390					395					400
Leu	Ser	Val	Tyr	Asp	Asp	Asn	Tyr	Arg	Pro	Ala	Tyr	Lys	Ile	Arg	Tyr
			405						410				415		
Ser	Leu	Asn	Asn	Leu	Lys	Met	Asp	Gly	Asn	Leu	Ile	Asn	Ile	Pro	Leu

420	425	430
Tyr Leu Ala Asp Trp Thr Val Lys Leu Val Ser Ile Gln		
435	440	445

<210> 9252
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 9252

Lys Thr Asn Met Met Thr Lys His Lys Met Asn Leu Phe Cys Gly Met		
1 5 10 15		
Leu Leu Leu Ser Ala Ser Leu Phe Val Glu Lys Ala Gln Ala Met Phe		
20 25 30		
Pro Glu Arg Tyr Val Ser Glu Glu Ser Ala Ala Arg Ala Asp Thr Ile		
35 40 45		
Asn Phe Arg Leu Ala Ser Ala Gly Glu Ala Lys Arg Leu Ile Ala Ala		
50 55 60		
Lys Asp Ser Tyr Thr Ala Asn Trp Ser Pro Phe Asp Ile Ala Ala Arg		
65 70 75 80		
Leu Glu Asn Pro Glu Gly Lys Arg Glu Asp Leu Val Ser Leu Ala Val		
85 90 95		
Arg Glu Val Arg Glu Trp Thr Ala Glu Glu Ala Gln Gln Ile Glu Gln		
100 105 110		
Ile Arg Lys Asn Leu Asn Asp Thr Ile Arg Lys Tyr Gly Tyr Arg Ile		
115 120 125		
Pro Phe Pro Lys Glu Ile Val Leu Val Lys Thr Thr Met Lys Asp Glu		
130 135 140		
Gly Gly Ala Gly Gly Tyr Thr Arg Ser Asn Trp Ile Ala Leu Thr Asp		
145 150 155 160		
Ala Thr Phe Gln Arg Gly Thr Glu Ala Ser His Thr Arg Leu Leu Val		
165 170 175		
His Glu Thr Phe His Ile Leu Thr Arg Leu Asn Pro Gly Phe Lys Lys		
180 185 190		
Lys Leu Tyr Arg Ala Ile Asp Phe Asn Ile Leu Pro Lys Glu Ile Glu		
195 200 205		
Phe Pro Glu Asp Ile Arg Lys Ser Arg Ile Ser Asn Pro Asp Val Ser		
210 215 220		
Arg Cys Asp Ser Tyr Ala Thr Phe Thr Ile Asp Gly Lys Pro Gln Asn		
225 230 235 240		
Cys Thr Met Ile Ile Tyr Thr Asn Arg Pro Tyr Thr Thr Gly Lys Phe		
245 250 255		
Tyr Gln Tyr Ile Asn Val Gly Leu Ile Pro Leu Asp Glu Ser Phe Lys		
260 265 270		
Pro Leu Arg Glu Ser Gly Lys Thr Val Ile Tyr Pro Leu Gln Lys Ala		
275 280 285		
Thr Asp Phe Phe Asp Lys Val Gly Arg Asn Thr Gly Tyr Val Ile Asp		
290 295 300		
Pro Glu Glu Val Leu Ala Asp Asn Phe Ala Ile Ala Leu Leu Asn Thr		
305 310 315 320		
Pro Asn Val His Thr Pro Glu Leu Gln Lys Lys Val Gln Glu Leu Leu		
325 330 335		

Lys

<210> 9253
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 9253

Leu Ala Asn Met Lys Ser Ile Lys Glu Leu Tyr Arg Ile Gly Thr Gly
 1 5 10 15
 Pro Ser Ser Ser His Thr Met Gly Pro Arg Lys Ala Ala Glu Met Phe
 20 25 30
 Leu Thr Arg His Pro Glu Ala Ala Ser Phe Lys Val Thr Leu Tyr Gly
 35 40 45
 Ser Leu Ala Ala Thr Gly Lys Gly His Met Thr Asp Val Ala Ile Ile
 50 55 60
 Asp Thr Leu Lys Pro Thr Ala Pro Val Asp Ile Ile Trp Gln Pro Lys
 65 70 75 80
 Ile Phe Leu Pro Phe His Pro Asn Gly Met Asn Phe Val Ala Leu Asp
 85 90 95
 Ala Gly Gly Asn Glu Leu Glu Asn Trp Thr Val Tyr Ser Val Gly Gly
 100 105 110
 Gly Ala Leu Ala Glu Asp Asn Lys Gln Pro Ser Ile Glu Ser Pro Glu
 115 120 125
 Val Tyr Ser Met Asn Ser Met Thr Glu Ile Leu Asp Trp Cys Glu His
 130 135 140
 Thr Gly Lys Ser Tyr Trp Glu Tyr Val Lys Glu Cys Glu Asp Pro Asp
 145 150 155 160
 Ile Trp Asp Tyr Leu Lys Glu Val Trp Asp Thr Met Lys Glu Ser Val
 165 170 175
 Gln Arg Gly Leu Glu Gln Glu Gly Val Leu Pro Gly Pro Leu Asn Leu
 180 185 190
 Arg Arg Lys Ala Ser Thr Tyr Tyr Ile Arg Ala Thr Gly Tyr Lys Ala
 195 200 205
 Ser Leu Gln Ser Arg Gly Leu Val Phe Ala Tyr Ala Leu Ala Val Ser
 210 215 220
 Glu Glu Asn Ala Ser Gly Gly Lys Ile Val Thr Ala Pro Thr Cys Gly
 225 230 235 240
 Ser Cys Gly Val Met Pro Ala Val Leu Tyr His Leu Ala Lys Ser Arg
 245 250 255
 Glu Phe Ser Glu Met Arg Ile Leu Arg Ala Leu Ala Thr Ala Gly Leu
 260 265 270
 Ile Gly Asn Ile Val Lys Gln Asn Ala Ser Ile Ser Gly Ala Glu Val
 275 280 285
 Gly Cys Gln Gly Glu Val Gly Val Ala Cys Ala Met Ala Ser Ala Ala
 290 295 300
 Ala Asn Gln Leu Phe Gly Gly Ser Pro Ala Gln Ile Glu Tyr Ala Ala
 305 310 315 320
 Glu Met Gly Leu Glu His His Leu Gly Met Thr Cys Asp Pro Val Cys
 325 330 335
 Gly Leu Val Gln Ile Pro Cys Ile Glu Arg Asn Ala Tyr Ala Ala Ala
 340 345 350
 Arg Ala Leu Asp Ala Asn Leu Tyr Ser Ser Phe Thr Asp Gly Met His
 355 360 365
 Arg Val Ser Phe Asp Lys Val Ile Gln Val Met Lys Gln Thr Gly His
 370 375 380
 Asp Leu Pro Ser Leu Tyr Lys Glu Thr Ser Glu Gly Gly Leu Ala Lys
 385 390 395 400
 Asp Tyr Lys Pro Met
 405

<210> 9254

<211> 250

<212> PRT

<213> B.fragilis

<400> 9254

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Thr Asn Asp Met Asp Asn Phe Lys Val Ile Tyr Ser Ile Pro Phe Leu
1          5          10          15
Phe Phe Ile Ile Val Ser Cys Ser Asn Ser Ser Thr Glu Met Val Ala
          20          25          30
Lys Ser Lys Tyr Asp Ala Lys Ile Ala Glu Tyr Lys Glu Leu Asn Glu
          35          40          45
Gln Gln Ala Ala Val Ile Glu Asp Asn Leu Glu Lys Ser Lys Ile Ile
          50          55          60
Asn Asn Val Val Thr Glu Leu Asn Gln Ile Ala Gly Asn Thr His Ser
65          70          75          80
Leu Arg Val Asn Val Glu His Gly Val Gly Glu Leu Ser Gln Ala Glu
          85          90          95
Glu Ile Asn Gln Lys Leu Gln Thr Leu Lys Lys Arg Leu Ser Ala Val
          100          105          110
Glu Gly Lys Arg Ser Asp Gly Ser Lys Asn Leu Leu Ala Thr Met Asp
          115          120          125
Lys Leu Lys Ser Ile Ile Glu Gln Lys Glu Ile Glu Ile Asn Asn Leu
          130          135          140
Lys Gln Glu Ile Ala Asn Gln Gln Gln Thr Ile Ala Asn Gln Lys Asn
145          150          155          160
Thr Ile Ala Ser Gln Gln Val Thr Ile Asp Ala Gln Ser Gln Glu Leu
          165          170          175
Met Asn Lys Gln Gln Glu Met Trp Tyr Lys Leu Gly Thr Glu Leu His
          180          185          190
Ser Val Val Glu Glu Leu Pro Lys Val Lys Gly Arg Lys Asp Lys Arg
          195          200          205
Asn Ile Lys Asn Thr Arg Tyr Tyr Ile Leu Asn Lys Ala Lys Glu Cys
210          215          220
Phe Glu His Ala Ala Gln Leu Gly His Ser Leu Ala Gly Ser Lys Ala
225          230          235          240
Arg Gln Val Glu Gly Glu Met Ser Arg Leu
          245          250

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<210> 9255

<211> 592

<212> PRT

<213> B.fragilis

<400> 9255

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Leu Thr Ile Ile Tyr Ile Val Asn Leu Thr Gly Phe Tyr Met Lys Lys
1          5          10          15
Thr Ser Leu Phe Leu Ser Phe Phe Ile Ala Leu Phe Leu Phe Ser Ala
          20          25          30
Cys Thr Asp Asp Thr Glu Gln Cys Leu Tyr Ser Pro Lys Val Phe Asp
          35          40          45
Thr Gly Asn Leu Leu Ser Asn Arg Val Lys Glu Glu Phe Leu Asn Phe
          50          55          60
Asp Tyr Pro Ala Gly Ile Val Pro Ile Leu Phe Ala Val Asp Ser Ile
65          70          75          80
Glu Ala Ile Gln Met Gly Ala Tyr Ala Asp Glu Cys Phe Asn Asp Leu
          85          90          95
Val Asp Ser Ile Ser Glu Ser Arg Asp Phe Lys His Arg Gly Met Leu
          100          105          110
Val Leu Val Ser Lys Asn Pro Lys Leu Ile Gln Ile Arg Leu Gly Asn
          115          120          125
Arg Tyr Arg Val Tyr Cys Asn Met Thr Gly Ala Thr Ser Gly Leu Asp
130          135          140

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Tyr Leu Asp Leu Gln Lys Gln Ile Gln Glu Arg Gly Val Glu Glu Thr
145          150          155          160
Leu Pro Leu Phe Leu Gln Asn Thr Ser Val Arg Ile Gln Glu Leu Asn
          165          170          175
Glu Leu Pro Ser Tyr Lys Lys Tyr Arg Ile Asn Ser Ala Ile Ser Val
          180          185          190
Ile Ser Thr Cys Leu Glu Tyr Ile Gly Thr Pro Ser Glu Asn Phe Tyr
          195          200          205
Gly Lys Cys Val Leu Thr Pro Ile Leu Lys Ile Thr Ser Phe Gly Tyr
          210          215          220
Tyr Ile Phe Lys Ser Trp Leu Leu Thr Phe Met Phe Val Cys Leu Ile
225          230          235          240
Met Leu Leu Cys Arg Trp Met Ile Phe Leu Leu Val Lys Arg Leu Leu
          245          250          255
Gly Glu Asn Val Ile Ala Leu Met Trp Thr Gln Lys Ile Ile Asn Trp
          260          265          270
Gly Leu Gly Leu Leu Phe Ser Ile Ser Ala Ala Ala Ser Ala Ile Ile
          275          280          285
Leu Ser Ser Gly Arg Met Glu Asp Ala Ile Ala Leu Gln Ala Ile Gly
          290          295          300
Ile Pro Phe Met Glu Asn Phe Gln Ile Ala Ala Asp Tyr Val Leu
305          310          315          320
Lys Thr Ser Phe Val Ala Ala Phe Phe Phe Val Leu Met Tyr Ala Leu
          325          330          335
Lys Arg Asn Ile Val Ser Asp Ile Phe Leu Met Ser Leu Leu Glu Pro
          340          345          350
Ala Lys Gln Gln Glu Val Tyr Arg Ser Leu Ser Asp Ala Gln Lys Thr
          355          360          365
Ala Leu Val Ile Gly His Glu Ala Asp Leu Asn Glu Val Glu Thr Ser
          370          375          380
Ser Glu Pro Tyr Ser Glu Leu Phe Thr Ser Arg Val Ser Lys Gln Glu
385          390          395          400
Thr Val Thr Ile Val Ser Leu Ala Ile Ala Ala Leu Phe Leu Ile Pro
          405          410          415
Arg Pro Leu Ile Ile Met Gly Ile Ala Leu Thr Ile Tyr Pro Leu Val
          420          425          430
Gly Gln Cys Val Lys Ile Tyr His Val Val Ser Asn His Thr Leu Pro
          435          440          445
Ala Gln Ile Lys Gly Asp Arg Arg Ala Leu Ile Thr Asn Leu Leu
          450          455          460
Ile Ile Phe Ala Ile Ala Phe Ile Thr Val Leu Ile Gly Leu Phe Phe
465          470          475          480
Asn Pro Met Pro Asp Lys Lys Glu Ile Asp Arg Asn Glu Ile Lys Met
          485          490          495
Glu Leu Ile Ala Pro Asp Arg Leu Glu Gly Asn Tyr Thr Val Ser Lys
          500          505          510
Ser Ile Val Gly Gln Ile Gln Val Ser Ser Gly Ile Ile Lys Lys Val
          515          520          525
Lys Asp Gly Thr Phe Gln Leu Leu Ile Thr Gly Lys Ser Ser Pro Lys
          530          535          540
Val Tyr Lys Leu Asp Phe Asn Ser Asp Lys Met Ile Phe Val Ser Gly
545          550          555          560
Glu Leu Gly Asn Gly Ala Ile His Tyr Asp Lys Asp Leu Asp Lys Ile
          565          570          575
Lys Ile Val Phe Asn Ile Asn Glu Gln Thr Thr Trp Thr Ile Ser Lys
          580          585          590

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<210> 9256

<211> 512

<212> PRT

<213> B.fragilis

<400> 9256

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Leu Thr Thr Met Ser Asn Arg Ile Val Ser Arg Ser Leu Met Gly Ala
1      5      10      15
Leu Cys Ser Ala Cys Phe Thr Thr Ala Ser Ala Gln Glu Arg Pro Asn
20     25     30
Ile Ile Val Phe Leu Val Asp Asp Met Gly Leu Met Asp Thr Ser Val
35     40     45
Pro Phe Val Thr Asp Glu Asn Gly Asn Ala Gln Arg Gln Pro Leu Asn
50     55     60
Asp Trp Tyr Arg Thr Pro Asn Met Glu Arg Leu Ala Asn Gln Gly Ile
65     70     75     80
Arg Phe Ser Thr Phe Tyr Ala Gln Ser Val Ser Ser Pro Ser Arg Ala
85     90     95
Ser Ile Met Thr Gly Gln Asn Ala Ala Arg His Arg Thr Thr Asn Trp
100    105    110
Ile Asn Ala Glu Ser Asn Asn Arg Thr Pro Tyr Gly Pro Phe Asp Trp
115    120    125
Asn Trp Lys Gly Leu Thr His Gln Asp Met Ile Tyr Pro Tyr Leu Leu
130    135    140
Gln Gln Ala Gly Tyr Gln Thr Ile His Val Gly Lys Ala His Phe Gly
145    150    155    160
Cys Leu Lys Ser Glu Gly Glu Asn Pro Ala Asn Leu Gly Phe Asp Val
165    170    175
Asn Ile Ala Gly Ser Ala Ile Gly His Pro Gly Ser Tyr His Gly Glu
180    185    190
Asn Gly Tyr Gly Trp Ile Lys Gly Gln Arg Ala Arg Ala Val Pro Asp
195    200    205
Leu Glu Gln Tyr His Lys Thr His Thr Phe Leu Ser Asp Ala Leu Thr
210    215    220
Leu Glu Ala Asp Lys Glu Ile Glu Lys Ala Val Ala Glu Lys Lys Pro
225    230    235    240
Phe Tyr Leu Asn Met Ala His Tyr Ala Val His Ser Pro Phe Glu Thr
245    250    255
Asp Glu Arg Phe Ile Ser His Tyr Thr Asp Pro Asn Lys Ser Gln Gln
260    265    270
Ala Arg Ala Phe Ala Thr Leu Ile Glu Gly Met Asp Lys Ser Leu Gly
275    280    285
Asp Ile Leu Asp Lys Leu Glu Asp Met Gly Ile Ala Glu Asn Thr Leu
290    295    300
Ile Ile Phe Leu Gly Asp Asn Gly Gly Asp Ala Pro Leu Gly Asp Ala
305    310    315    320
Ala Asp Tyr Gly Ser Ser Ala Pro Phe Lys Gly Lys Lys Gly Ser Glu
325    330    335
Tyr Glu Gly Gly Val Arg Val Pro Phe Ile Val Ser Trp Ala His Pro
340    345    350
Asn Pro Asn Asn Lys Phe Gln Lys Ala Tyr Pro Ile Ala Arg Asn Ala
355    360    365
Ile Gln Thr Gln Met Gly Thr Val Met Asp Ile Tyr Pro Thr Val Leu
370    375    380
Ser Val Ala Gly Val Lys Pro Ala Pro Asn His Ile Leu Asp Gly Ala
385    390    395    400
Asp Leu Arg Lys Leu Leu Lys Gly Lys Arg Asp Lys Lys His Arg Asp
405    410    415
Asp Phe Leu Met His Phe Pro His Glu His Arg Gly Ser Tyr Phe Thr
420    425    430
Ser Tyr Arg Lys Gly Asp Trp Lys Phe Ile Tyr Tyr Tyr Asn Pro Gln

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435	440	445
Thr Pro Glu Ala Pro Thr	Tyr Lys Leu Phe Asn Leu Ser Glu Asp Pro	
450	455	460
Tyr Glu Lys Asn Asp Leu Ser Lys Thr Asn Gln Gln Lys Ala Lys Glu		
465	470	475
Leu Phe Arg Leu Met Val Gln Arg Leu Glu Lys Glu Gln Ala Leu Tyr		480
	485	490
Pro Val Asp Ala Asp Lys Asn Val Leu Ser Pro Ile Phe Val Ala Glu		495
500	505	510

<210> 9257
 <211> 336
 <212> PRT
 <213> B.fragilis

<400> 9257

Phe Asn Arg Ile Met Glu Glu Ile Lys Ile Ala Gly Ala Ala Leu Pro	
1	15
Ala Met Pro Trp Glu Glu Arg Pro Ala Gly Cys Lys Asp Val Val Trp	
20	30
Arg Cys Ser Ala Asn Pro Ile Ile Pro Arg Asp Leu Leu Pro Thr Ser	
35	45
Asn Ser Ile Phe Asn Ser Ala Val Val Pro Phe Lys Asp Gly Tyr Ala	
50	60
Gly Val Phe Arg Cys Asp Asp Thr Asn Arg Arg Met Arg Leu His Val	
65	80
Gly Phe Ser Lys Asp Ala Val His Trp Asp Ile Asn Glu Glu Pro Leu	
85	95
Lys Phe Gln Cys Asp Asp Ala Glu Val Gly Thr Trp Val Tyr Gly Tyr	
100	110
Asp Pro Arg Val Cys Phe Ile Glu Asp Arg Tyr Tyr Val Thr Trp Cys	
115	125
Asn Gly Tyr His Gly Pro Thr Ile Gly Val Ala Tyr Thr Tyr Asp Phe	
130	140
Val Thr Phe His Gln Leu Glu Asn Ala Phe Ile Pro Phe Asn Arg Asn	
145	160
Gly Val Leu Phe Pro Arg Lys Ile Asn Gly Arg Phe Ala Met Leu Ser	
165	175
Arg Pro Ser Asp Asn Gly His Thr Pro Phe Gly Asp Ile Phe Tyr Ser	
180	190
Glu Ser Pro Asp Met Glu Phe Trp Gly Arg His Arg His Val Met Ser	
195	205
Pro Ala Pro Phe Glu Asp Ser Ala Trp Gln Cys Thr Lys Ile Gly Ala	
210	220
Gly Pro Ile Pro Ile Glu Thr Ser Glu Gly Trp Leu Leu Ile Tyr His	
225	240
Gly Val Leu Ala Ser Cys Asn Gly Phe Val Tyr Ser Phe Gly Ser Ala	
245	255
Leu Leu Asp Ile Asp Gln Pro Trp Lys Val Lys Phe Arg Ser Gly Pro	
260	270
Tyr Leu Ile Ser Pro Gln Lys Asp Tyr Glu Cys Met Gly Asp Val Pro	
275	285
Asn Val Cys Phe Pro Cys Ala Ala Leu His Asp Ser Glu Thr Gly Arg	
290	300
Ile Ala Ile Tyr Tyr Gly Cys Ala Asp Thr Val Thr Gly Leu Ala Phe	
305	320
Gly Tyr Ile Pro Glu Ile Ile Glu Phe Thr Lys Arg Thr Ser Ile Ile	
325	335

<210> 9258
 <211> 679
 <212> PRT
 <213> B.fragilis

<400> 9258

Ile	Ser	Leu	Ile	Leu	Phe	Pro	Ile	Glu	Phe	Cys	Asn	Phe	Val	Ala	Leu
1				5					10					15	
Glu	Asn	Tyr	Tyr	Leu	Cys	Ile	Ile	Asn	Leu	Ile	Val	Asp	Trp	Ile	Met
			20					25					30		
Gly	His	Cys	Lys	Cys	Glu	Met	Asn	Ala	Asn	Val	Arg	Val	Glu	Ser	Cys
		35					40					45			
Gln	Glu	Ala	Asn	Gly	Phe	Ile	Lys	Glu	Tyr	Trp	Lys	Val	Ile	Leu	Ser
	50					55					60				
Leu	Leu	Met	Leu	Ile	Ala	Gly	Ala	Ile	Met	Asn	Gln	Leu	Asp	Val	Ala
65					70					75					80
Phe	Phe	Arg	Asp	Asn	Thr	Ile	Ser	Leu	Val	Trp	Tyr	Ile	Leu	Ala	Tyr
			85						90					95	
Leu	Pro	Val	Gly	Leu	Pro	Val	Ile	Lys	Glu	Ala	Trp	Glu	Ser	Ile	Leu
			100					105					110		
Gln	Lys	Asp	Phe	Phe	Ser	Glu	Phe	Thr	Leu	Met	Ser	Val	Ala	Thr	Leu
	115					120						125			
Gly	Ala	Phe	Tyr	Ile	Gly	Glu	Tyr	Pro	Glu	Gly	Val	Ala	Val	Met	Leu
	130				135						140				
Phe	Tyr	Ser	Val	Gly	Glu	Leu	Phe	Gln	Asp	Lys	Ala	Ile	Asp	Lys	Ala
145				150						155					160
Lys	Arg	Asn	Ile	Ser	Ala	Leu	Leu	Asp	Val	Arg	Pro	Glu	Lys	Ala	Val
			165					170						175	
Val	Val	Arg	Ser	Asn	Glu	Ile	Val	Thr	Val	Asp	Pro	Arg	Ser	Val	Leu
			180					185					190		
Ile	Asn	Glu	Ile	Ile	Glu	Ile	Lys	Ala	Gly	Glu	Arg	Val	Pro	Leu	Asp
	195					200						205			
Gly	Val	Met	Leu	Asp	Glu	Val	Ala	Ala	Phe	Asn	Thr	Ala	Ala	Leu	Thr
	210				215						220				
Gly	Glu	Ser	Val	Pro	Arg	Asp	Ile	Ser	Arg	Gly	Glu	Glu	Val	Leu	Ala
225				230						235					240
Gly	Met	Ile	Val	Thr	Asp	Lys	Val	Ile	Arg	Met	Lys	Val	Thr	Lys	Pro
			245						250					255	
Phe	Asp	Lys	Ser	Ala	Leu	Ala	Arg	Ile	Leu	Glu	Leu	Val	Glu	Asp	Ala
			260					265					270		
Ser	Glu	Arg	Lys	Ala	Pro	Ala	Glu	Leu	Phe	Ile	Arg	Lys	Phe	Ala	Arg
	275					280						285			
Val	Tyr	Thr	Pro	Ile	Val	Ile	Gly	Phe	Ala	Phe	Leu	Ile	Val	Leu	Ile
	290				295						300				
Pro	Tyr	Ile	Tyr	Ser	Phe	Ile	Asn	Pro	Leu	Phe	Gly	Phe	Val	Phe	Asn
305				310						315					320
Asp	Trp	Leu	Tyr	Lys	Ala	Leu	Val	Phe	Leu	Val	Ile	Ser	Cys	Pro	Cys
			325						330					335	
Ala	Leu	Val	Ile	Ser	Ile	Pro	Leu	Gly	Tyr	Phe	Gly	Gly	Ile	Gly	Ala
			340					345					350		
Ala	Ser	Arg	Leu	Gly	Ile	Leu	Phe	Lys	Gly	Gly	Asn	Tyr	Leu	Asp	Ala
	355					360						365			
Ile	Thr	Arg	Val	Asn	Thr	Val	Val	Phe	Asp	Lys	Thr	Gly	Thr	Leu	Thr
	370					375						380			
Lys	Gly	Val	Phe	Glu	Val	Glu	Ser	Cys	Arg	Val	Val	Pro	Gly	Thr	Ser
385				390						395					400
Glu	Glu	Asp	Leu	Leu	Arg	Val	Val	Ala	Ser	Ile	Glu	Lys	Asn	Ser	Asn
			405					410					415		
His	Pro	Ile	Ala	Arg	Ala	Ile	Val	Ala	Tyr	Ala	Gln	Asp	Lys	Gly	Ile

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      420      425      430
Asp Leu Ile Val Thr Lys Asn Ile Glu Glu Ile Ala Gly Tyr Gly Leu
      435      440      445
Met Thr Glu Ile Asp Gly Lys Arg Val Leu Val Gly Asn Thr Arg Leu
      450      455      460
Leu Ser Lys Tyr Ser Ile Glu Phe Pro Lys Ala Val Phe Ser Ile Thr
465      470      475      480
Glu Thr Thr Val Val Cys Ala Val Gly Asp Lys Tyr Ile Gly Cys Ile
      485      490      495
Ile Leu Ser Asp Val Leu Lys Asp Asp Ala Ser Asp Thr Val Lys Ala
      500      505      510
Leu Lys Glu Leu Asn Ile Lys Asn Ile Gln Ile Leu Ser Gly Asp Lys
      515      520      525
Gln Ser Ile Val Thr Ile Phe Ala Asn Lys Leu Gly Ile Thr Gln Ala
      530      535      540
Tyr Gly Asp Leu Leu Pro Glu Gly Lys Val Glu His Ile Glu Arg Leu
545      550      555      560
Lys Glu Glu Lys Gly Asn Gln Ile Ala Phe Val Gly Asp Gly Met Asn
      565      570      575
Asp Ala Pro Val Leu Ala Leu Ser Asp Val Gly Ile Ala Met Gly Gly
      580      585      590
Leu Gly Ser Asp Ala Ala Ile Glu Thr Ala Asp Val Val Ile Gln Thr
      595      600      605
Asp Gln Pro Ser Lys Val Ala Thr Ala Ile Lys Val Gly Arg Cys Thr
      610      615      620
Arg Arg Ile Ile Trp Gln Asn Val Leu Leu Ala Phe Gly Val Lys Leu
625      630      635      640
Leu Val Leu Ile Leu Gly Ala Ser Gly Ile Ala Thr Leu Trp Glu Ala
      645      650      655
Val Phe Ala Asp Val Gly Val Thr Leu Ile Ala Ile Met Asn Ala Val
      660      665      670
Arg Ile Gln Lys Met Ile Lys
      675

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<210> 9259

<211> 171

<212> PRT

<213> B.fragilis

<400> 9259

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Lys Lys Thr Leu Ile Met Lys Phe Leu Lys Phe Ser Leu Leu Thr Ala
1      5      10      15
Val Leu Leu Ser Val Val Phe Ala Phe Ser Ser Cys Gly Asp Asp Asp
      20      25      30
Asp Thr Gly Tyr Leu Pro Pro Ser Gln Ala Ile Gln Asp Ala Leu Lys
      35      40      45
Lys Leu Tyr Pro Asn Ala Thr Ala Ile Lys Trp Glu Gln Lys Gly Val
      50      55      60
Tyr Tyr Val Ala Asp Cys Gln Ala Asp Gly Arg Glu Lys Glu Val Trp
65      70      75      80
Phe Asp Ala Asn Ala Asn Trp Leu Met Thr Glu Thr Glu Leu Asn Ser
      85      90      95
Ile Asn Asn Leu Pro Pro Ala Val Leu Thr Ala Phe Met Glu Ser Ser
      100      105      110
Tyr Asn Asn Trp Val Val Asp Asp Val Val Ile Leu Glu Tyr Pro Asn
      115      120      125
Glu Pro Ser Thr Glu Phe Val Val Thr Val Glu Gln Gly Lys Lys Val
      130      135      140
Asp Leu Tyr Phe Ser Glu Gly Gly Gly Leu Leu His Glu Lys Asp Val

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145 150 155 160
 Thr Asn Gly Asp Asp Thr His Trp Pro Arg Ile
 165 170

<210> 9260
 <211> 422
 <212> PRT
 <213> B.fragilis

<400> 9260
 Asn Arg Met Met Lys Glu Asp Glu Lys Trp Ile Lys Ala Phe Lys Asp
 1 5 10 15
 Lys Leu Glu Asp Tyr Ser Glu Pro Met Pro Ala Ser Gly Trp Glu Arg
 20 25 30
 Leu Glu Arg Glu Leu Met Pro Val Thr Glu Lys Arg Ile Tyr Pro Tyr
 35 40 45
 Arg Arg Trp Ala Val Ala Ala Ala Val Val Leu Val Leu Thr Thr
 50 55 60
 Ala Val Ser Leu Tyr Phe Leu Asn Ser Pro Val Ala Asp Glu Ile Arg
 65 70 75 80
 Tyr Ala Thr Ala Pro Ser Leu Ala Val Asn Pro Asp Val Leu Pro Glu
 85 90 95
 Pro Ala Leu Pro Asp Val Gln Val Ala Val Ser Glu Pro Val Lys Pro
 100 105 110
 Val Gly Thr Thr Ser Ile Asn Pro Val Ser Gly Tyr Leu Ala Lys Asn
 115 120 125
 Thr Asp Pro Val Ile Val Pro Glu Val Ser Ser Leu Val Glu Lys Arg
 130 135 140
 Pro Glu Ala Val Thr Glu Glu Lys Arg Ser Glu Pro Gln Gln Glu Ala
 145 150 155 160
 Ile Ala Ala Ile Glu Lys Lys Glu Ser Ala Thr Ala Gln Pro Pro Lys
 165 170 175
 Arg Lys Glu Ala Arg Arg Pro Ser Gly Lys Asp Lys Tyr Gln Leu Pro
 180 185 190
 Ile Gly Asp Ser Ser Ala Lys Arg Gly Gly Lys Trp Ser Met Gly Val
 195 200 205
 Gly Ile Gly Asn Gly Gly Gly Leu Pro Thr Asn Gly Ser Glu Asn Phe
 210 215 220
 Ala Pro Arg Pro Met Thr Asn Arg Val Asp Leu Met Thr Ile Met Asn
 225 230 235 240
 Gly Ala Val Ser Ile Pro Ala Asp Gln Glu Val Ile Phe Glu Glu Gly
 245 250 255
 Val Pro Tyr Leu Lys Ser Asn Thr Thr Ala Val Val Asp Tyr Glu His
 260 265 270
 His Gln Pro Val Ser Phe Gly Leu Ser Val Arg Lys Ser Leu Pro Lys
 275 280 285
 Gly Phe Ser Val Glu Thr Gly Leu Thr Tyr Thr Leu Leu Ser Ser Asp
 290 295 300
 Ile Lys Arg Gln Gly Asp Thr Lys Met Gln Ser Gln Lys Leu His Tyr
 305 310 315 320
 Ile Gly Ile Pro Val Arg Gly Asn Trp Asn Phe Leu Glu Lys Lys Tyr
 325 330 335
 Phe Thr Leu Tyr Val Ser Ala Gly Gly Met Val Glu Lys Cys Val Tyr
 340 345 350
 Gly Lys Leu Ala Asp Asp Lys Val Asn Val Lys Pro Leu Gln Phe Ser
 355 360 365
 Val Ala Gly Ala Val Gly Ala Gln Phe Asn Ala Thr Asp His Val Gly
 370 375 380
 Leu Tyr Val Glu Pro Gly Val Ser Tyr Phe Phe Asp Asp Gly Ser Lys

385 390 395 400
 Val Gln Thr Ile Arg Lys Glu Arg Pro Cys Asn Phe Asn Leu Gln Ala
 405 410 415
 Gly Leu Arg Phe Thr Tyr
 420

<210> 9261
 <211> 518
 <212> PRT
 <213> B.fragilis

<400> 9261
 Asn Gln Ser Ile Met Lys Lys Lys Ile Leu Asn Ile Val Leu Ala Ala
 1 5 10 15
 Ala Val Thr Pro Phe Leu Cys Cys Cys Thr Asp Asn Phe Glu Glu Tyr
 20 25 30
 Asn Thr Asn Pro Tyr Glu Pro His Ser Leu Asn Pro Pro Met Leu Phe
 35 40 45
 Ala Thr Met Ile Thr Thr Gly Ile Asn Val Gln Gln Asn Asp Asn Gln
 50 55 60
 Met Ile Asp Gln Met Val Ala Gly Pro Phe Ser Gly Tyr Leu Thr Met
 65 70 75 80
 Ala Asn Ser Trp Gly Gly Ser Asn Phe Asn Thr Phe Asn Gln Thr Glu
 85 90 95
 Ser Trp Asn Gln Ile Pro Phe Asn Thr Pro Phe Glu Lys Phe Tyr Cys
 100 105 110
 Asn Tyr Phe Lys Leu Glu Thr Ala Thr Gly Gly Lys Gly His Tyr Trp
 115 120 125
 Ala Met Ala Lys Leu Leu Arg Val Asn Thr Met Leu Arg Val Thr Asp
 130 135 140
 Cys Tyr Gly Pro Ile Pro Tyr Ser Gln Val Ala Asn Gly Lys Thr Ala
 145 150 155 160
 Val Ala Tyr Asp Ser Gln Glu Asp Val Tyr Lys His Met Phe Glu Asp
 165 170 175
 Leu Asp Tyr Ala Ile Gln Met Leu Gly Glu Phe Val Asp Glu Val Gly
 180 185 190
 Gly Leu Lys Pro Leu Glu Gly Tyr Asp Pro Val Tyr Asn Gly Asp Tyr
 195 200 205
 Asn Lys Trp Met Arg Phe Ala Asn Ser Leu Lys Leu Arg Leu Ala Val
 210 215 220
 Arg Ile Ser Asn Val Ser Pro Glu Leu Ala Arg Thr Lys Ala Glu Glu
 225 230 235 240
 Ala Val Lys Ser Thr Arg Gly Leu Ile Asp Thr Asn Asp Asn Asn Ala
 245 250 255
 Tyr Val Gly Val Gly Ala Glu Pro Asn Pro Leu Trp Leu Val Ala Ser
 260 265 270
 Ser Trp Gly Glu Ile Arg Ile Asn Ala Thr Ile Ala Ser Tyr Met Lys
 275 280 285
 Gly Tyr Ser Asp Pro Arg Ser Ala Val Tyr Phe Thr Thr Ser Lys Leu
 290 295 300
 Gly Gly Asp Ser Pro Tyr Met Gly Met Arg Ser Gly Leu Glu Gly Val
 305 310 315 320
 Lys Pro Ala Thr Tyr Ser Gly Tyr Ser Met Pro Asn Tyr Glu Gln Lys
 325 330 335
 Asp Asp Met Leu Met Phe Cys Ala Ala Glu Thr Ala Phe Leu Arg Ala
 340 345 350
 Glu Gly Ala Leu Arg Gly Trp Asp Met Gly Gly Ser Ala Arg Asp Phe
 355 360 365
 Tyr Glu Gln Gly Val Lys Leu Ser Phe Asp Gln Arg Lys Val Ser Gly

370 375 380
 Ala Asp Glu Tyr Leu Ala Asn Ala Val Ala Val Pro Glu Pro Phe Val
 385 390 395 400
 Asp Pro Val Asn Pro Ala Lys Cys Asn Tyr Thr Pro Lys Thr Lys Ile
 405 410 415
 Thr Ile Ala Trp Asn Glu Gly Ala Ser Thr Glu Glu Lys Leu Glu Arg
 420 425 430
 Ile Ile Thr Gln Lys Trp Ile Ala Asn Phe Pro Leu Gly Phe Glu Gly
 435 440 445
 Trp Ala Asp Tyr Arg Arg Thr Gly Tyr Pro Glu Val Phe Pro Ser Val
 450 455 460
 Ser Asn Leu Ser Asn Gly Val Ile Asp Thr Asn Arg Gln Leu Arg Arg
 465 470 475 480
 Leu Pro Phe Pro Leu Ser Glu Lys Gln Gly Asn Ser Ala Asn Val Ser
 485 490 495
 Ala Ala Val Ser Met Leu Gly Gly Pro Asp Thr Gly Ala Thr Asp Leu
 500 505 510
 Trp Trp Ala Lys Lys Asn
 515

<210> 9262

<211> 148

<212> PRT

<213> B.fragilis

<400> 9262

Ile Glu Lys Met Lys Thr Val Lys Leu Ile Thr Cys Asp Asp Ala Phe
 1 5 10 15
 Gln Ala His Ile Ile Gln Gly Ala Leu Ala Asn Glu Gly Ile Asp Ser
 20 25 30
 Leu Leu His Asn Glu Asn Met Ser Thr Leu Leu Arg Gly Phe Val His
 35 40 45
 Asp Ile Ser Arg Val Asp Val Leu Val Ala Asp Cys Asp Tyr Glu Ala
 50 55 60
 Ala Ile Gln Leu Leu Lys Gln Asn Gln Met Ile Pro Glu Glu Gln Lys
 65 70 75 80
 Phe Cys Pro Phe Cys Gly Ser Asp Arg Ile Lys Phe Val Leu Lys Lys
 85 90 95
 Glu His Arg Val Arg Ala Val Ser Ala Ala Ile Val Ser Met Leu Ala
 100 105 110
 Thr Val Pro Pro Gly Gly Asn His Trp Glu Tyr Ile Cys Asp His Cys
 115 120 125
 Gly Lys Ala Phe Glu Lys Pro Val Thr Glu Phe Asn Pro Ser Ala Leu
 130 135 140
 Glu Glu Lys Asp
 145

<210> 9263

<211> 380

<212> PRT

<213> B.fragilis

<400> 9263

Arg Tyr Gly Ile Tyr Arg Lys Glu Leu Leu Ile Arg Lys Ser Ile Asp
 1 5 10 15
 Leu Pro Thr Leu Pro Cys Pro Lys Lys Arg Tyr Thr Met Lys Val Lys
 20 25 30
 Leu Leu Phe Leu Val Phe Val Leu Tyr Ala Cys Gly Thr Lys Thr Val
 35 40 45

```

Ser Glu Glu Lys Ser Tyr Asp Arg Ile Thr Met Thr Thr Tyr Glu Asn
 50          55          60
Lys Tyr Asp Glu Asn Asn Arg Leu Ser Glu Val Gln Leu Thr Arg Thr
 65          70          75          80
Ser His His Arg Tyr Glu Glu Asp Ser Glu Thr Ile Asp Leu Ile Asp
          85          90          95
Asp Lys Ser Thr Tyr Tyr Tyr Thr Tyr Ile Asn Asn Glu Glu Phe Thr
          100          105          110
Val Arg Arg Lys Ser Lys Arg Ser Gly Asn Ile Lys Ile Met Arg Tyr
          115          120          125
Ala Pro Gln Arg Glu Glu Val Leu Thr Leu Asn Ala Gln Gly Asp Thr
          130          135          140
Ile Asp Tyr Leu Leu Gln Lys Tyr Tyr Asp Lys Ser Lys Leu Lys Leu
          145          150          155          160
Val Tyr Val Arg Asn Ile Asn Asn Asp Tyr Val Leu His Glu Asp Asn
          165          170          175
Asp Tyr Glu Glu Lys Asn Glu Tyr Asp Gly Asn Gly Asn Leu Thr Lys
          180          185          190
Arg Val Gln Tyr Tyr Phe Asp Ile Gly Lys Lys Arg Thr Thr Tyr Phe
          195          200          205
Phe Arg Gly Leu Ser Tyr Glu Glu Ala Lys Lys Arg Ile Pro Arg Thr
          210          215          220
Asp Glu Asp Tyr Asp Ile Val Cys Asp Ile Glu Lys Met Ala Gly Asp
          225          230          235          240
Thr Leu Ile Arg Lys Cys Ile Lys Asn Gly Ile Val Ser Ser Ile Asn
          245          250          255
Lys Thr Ile Val Asp Glu Lys Gly Lys Lys Glu Phe Ile Phe Asp Ala
          260          265          270
Asp Met Lys Phe Thr Gly Ser Phe Thr Glu Phe Lys Ser Asp Gly Phe
          275          280          285
Asp Ile His Val Asp Arg Ile Val Leu Asp Asp Cys Thr Asp Ile Asp
          290          295          300
Ser Thr Tyr Tyr Lys Asn Gly Lys Glu Val Arg Cys Val Tyr Leu Ser
          305          310          315          320
Asp Thr Ser Lys Arg Ile Val Leu Ser Lys Tyr Asp Lys Trp Gly Asn
          325          330          335
Met Val Glu Arg Val Glu Lys Thr Lys Tyr Phe Tyr Ser Gln Asp Gly
          340          345          350
Glu Ala Leu Ile Asn Glu Met Leu Gln Val Val Arg Glu Asn Glu Lys
          355          360          365
Lys Lys Glu Ser Arg Lys Arg Leu Lys Ile Ser Lys
          370          375          380

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<210> 9264

<211> 90

<212> PRT

<213> B.fragilis

<400> 9264

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Leu Ile Asn Phe Asp Asn Val Cys Cys Ser Leu Lys Ser Asn Val Gln
 1          5          10          15
Ala Asn Gly Leu Tyr Lys Arg Pro Gln Leu Leu His Leu Gln Leu Asp
          20          25          30
Thr Gly Gly Val Val Met Thr Ser Ala Gln Val Ala Glu Gln Ile Lys
          35          40          45
Ser Ile Phe Pro Leu Phe Tyr Ile Gln Gly Arg Ser Ser Arg Val Ile
          50          55          60
Ile Asp Leu Arg Cys Ser Ser Phe Phe Ile Met Gln Thr Asp Met Leu
          65          70          75          80

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Tyr Thr Lys Lys Arg Lys Ser Leu Asn Tyr
 85 90

<210> 9265
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9265
 Gly Lys His Val Phe Arg Arg Met Asn Glu Leu Glu Leu Ser Glu Arg
 1 5 10 15
 Cys Arg Gln Gly Asp Asn Arg Ala Arg Lys Glu Leu Tyr Glu Gln Tyr
 20 25 30
 Ala Gly Arg Met Leu Gly Val Cys Leu Arg Tyr Ala Gly Asp Arg Asp
 35 40 45
 Met Ala Gln Asp Leu Val His Asp Gly Phe Leu Lys Ile Phe Asp Ser
 50 55 60
 Phe Asp Lys Phe Thr Trp Arg Gly Glu Gly Ser Leu Arg Ala Trp Met
 65 70 75 80
 Glu Arg Val Met Val Asn Thr Ala Leu Gln Phe Leu Arg Lys Asn Asp
 85 90 95
 Val Met Asn Gln Thr Thr Ala Leu Asp Glu Val Pro Glu Thr Tyr Glu
 100 105 110
 Glu Pro Asp Ala Ser Ala Val Glu Ala Ile Pro Gln Lys Val Leu Met
 115 120 125
 Gln Phe Ile Asn Glu Leu Pro Ala Gly Tyr Arg Thr Val Phe Asn Leu
 130 135 140
 Tyr Thr Phe Glu Asp Lys Ser His Lys Glu Ile Ala Gln Met Leu Gly
 145 150 155 160
 Ile Asn Glu Lys Ser Ser Ala Ser Gln Leu Phe Arg Ala Lys Ser Val
 165 170 175
 Leu Ala Lys Lys Val Lys Glu Trp Leu Val Thr Asn Gly
 180 185

<210> 9266
 <211> 241
 <212> PRT
 <213> B.fragilis

<400> 9266
 Met Ile Asn Val His Ser Tyr Glu Ser Met Gly Thr Phe Asp Gly Pro
 1 5 10 15
 Gly Leu Arg Leu Val Val Phe Leu Gln Gly Cys Asn Phe Arg Cys Leu
 20 25 30
 Tyr Cys Ala Asn Pro Asp Thr Ile Glu Ala Lys Gly Gly Thr Ala Thr
 35 40 45
 Asp Pro Glu Glu Ile Val Arg Met Ala Val Ser Gln Lys Ala Phe Phe
 50 55 60
 Gly Lys Lys Gly Gly Ile Thr Phe Ser Gly Gly Glu Pro Thr Phe Gln
 65 70 75 80
 Ala Lys Ser Leu Ile Pro Leu Phe Lys Arg Leu Lys Glu Ala Gly Ile
 85 90 95
 His Ile Cys Leu Asp Thr Asn Gly Gly Leu Trp Asn Asn Asp Val Glu
 100 105 110
 Glu Leu Leu Glu Leu Thr Asp Leu Val Leu Leu Asp Ile Lys Glu Phe
 115 120 125
 Asn Pro Glu His His Gln Ser Leu Thr Gly Arg Ser Asn Glu Gln Thr
 130 135 140
 Leu Lys Thr Ala Ala Trp Leu Glu Thr Asn His Lys Pro Phe Trp Leu

145		150		155		160									
Arg	Tyr	Val	Leu	Val	Pro	Gly	Tyr	Ser	Asp	Phe	Glu	Asp	Asp	Ile	Arg
		165							170					175	
Gln	Leu	Gly	Glu	His	Leu	Gly	Thr	Tyr	Gln	Met	Ile	Gln	Arg	Val	Glu
		180						185					190		
Ile	Leu	Pro	Tyr	His	Thr	Leu	Gly	Val	His	Lys	Tyr	Glu	Ala	Met	Asn
		195					200					205			
Lys	Glu	Tyr	Met	Leu	Lys	Gly	Val	Lys	Glu	Asn	Thr	Pro	Glu	Gln	Ile
		210				215				220					
Glu	Lys	Ala	Glu	Lys	Leu	Phe	Arg	Gln	Tyr	Phe	Arg	Thr	Val	Gln	Val
225					230					235					240
Asn															

<210> 9267

<211> 387

<212> PRT

<213> B.fragilis

<400> 9267

Leu	Ile	Val	Val	Asn	Thr	Lys	Val	Ile	Leu	Leu	Asn	Gln	Phe	Thr	Met
1				5					10					15	
His	Thr	Asp	Leu	Lys	Pro	Ile	Asn	Lys	Asp	Ala	Ser	Asn	His	Val	Leu
			20					25					30		
Thr	Asn	Leu	Glu	Lys	Leu	Glu	Lys	Lys	Thr	Ala	Glu	Glu	Arg	Leu	Lys
			35				40					45			
Phe	Met	Asp	Glu	Asp	Arg	Tyr	Glu	Glu	Met	Ile	Thr	Lys	Trp	Ala	Tyr
			50			55				60					
Phe	Cys	Leu	Lys	Glu	Asp	Ser	Asn	Lys	Lys	Tyr	Glu	Asp	Val	Phe	Arg
65					70					75				80	
Tyr	Gly	Gly	Ser	Gly	Asp	Gly	Gly	Ile	Asp	Val	Ile	Ala	Phe	Tyr	Asp
				85					90					95	
Phe	Lys	Asn	Gln	Ile	Cys	Asp	Ile	Tyr	Gln	Cys	Lys	His	Tyr	Lys	Asp
		100						105					110		
Ser	Ile	Gly	Tyr	Ser	Asp	Ile	Asn	Lys	Glu	Leu	Cys	Lys	Phe	Leu	Tyr
		115					120					125			
Asn	Thr	Phe	Ile	Asp	Tyr	Ile	Pro	Phe	Pro	Lys	Thr	Tyr	Tyr	Leu	Val
		130				135					140				
Ala	Pro	Gln	Asn	Ile	Thr	Gly	Pro	Leu	Gly	Ser	Leu	Phe	Asn	Asp	His
145				150					155					160	
Glu	Lys	Leu	Arg	Asn	Arg	Leu	Trp	Glu	Asp	Trp	Glu	Lys	Ser	Ile	Lys
				165					170					175	
Lys	Lys	Leu	Ala	Val	Asn	Ile	Thr	Asn	Asp	Glu	Asn	Asp	Lys	Phe	Lys
			180					185				190			
Lys	His	Val	Asp	Thr	Phe	Asp	Leu	Ser	Ile	Ile	Lys	Pro	Leu	Ser	Pro
		195				200						205			
Asp	Lys	Ile	Ile	Glu	Gly	Leu	Arg	Lys	Glu	Tyr	Trp	Leu	Tyr	Phe	Gln
	210					215				220					
Tyr	Leu	Gly	Ile	Asp	Arg	Thr	Leu	Ile	Pro	Arg	Ile	His	Ala	Ala	Pro
225					230					235					240
Pro	Ser	Thr	Val	Ala	Asp	Tyr	Glu	Ser	Thr	Tyr	Ile	Asn	His	Leu	Val
				245					250					255	
Asp	Ala	Tyr	Ser	Asp	Ala	Asn	Lys	Ser	Ser	Ile	Thr	Gln	Ile	Asn	Leu
		260					265						270		
Asn	Asp	Glu	Asn	Met	Ala	Met	Tyr	Lys	Ala	His	Phe	Thr	Ala	Ser	Arg
	275						280					285			
Glu	Gln	Phe	Tyr	Leu	Ala	Glu	Ser	Ala	Ala	Met	Ile	Gly	Lys	Glu	Ile
	290					295				300					
Cys	Ser	Gly	Gly	Asn	Asp	Glu	Tyr	Ser	Glu	Ile	Lys	Asp	Asn	Ile	Glu

305 310 315 320
 Glu His Val Ile Asp Glu Tyr Tyr Ser Gln Tyr His Thr Asp Gly Phe
 325 330 335
 Glu Lys Val Lys Ala Val Thr Lys Ser Ala Ser Gln Tyr Gln Val Glu
 340 345 350
 Glu Met Asn Ser Val Lys Pro Ile Ile Ser Ser Arg Val Leu Lys Gly
 355 360 365
 Met Cys Phe Gln Leu Ser Asn Glu Asn Lys Leu Ile Trp Val Lys Lys
 370 375 380
 Lys Ile Lys
 385

<210> 9268

<211> 135

<212> PRT

<213> B.fragilis

<400> 9268

Thr Phe Ser Val Phe Met Gly Tyr Phe Ile Lys Ile Gly Leu Gly Met
 1 5 10 15
 Thr Glu Ile Lys Ile Lys Arg Val Tyr Glu Asp Pro Ser Asp Thr Asp
 20 25 30
 Gly Tyr Arg Val Leu Val Asp Arg Leu Trp Pro Arg Gly Met Lys Lys
 35 40 45
 Glu His Leu Lys Tyr Asp Tyr Trp Ala Lys Glu Leu Thr Pro Ser Ser
 50 55 60
 Asp Leu Arg Lys Trp Phe His Asp Asp Val Pro Gly His Trp Lys Glu
 65 70 75 80
 Phe Ala Glu Met Tyr Arg Lys Glu Leu Glu Thr Ser Asp Lys Thr Ser
 85 90 95
 Glu Phe Leu Ser Arg Ile Arg Ser Cys Glu Ser Val Thr Leu Leu Tyr
 100 105 110
 Ala Ser Lys Glu Pro Val Tyr Asn His Ala Arg Ile Leu Gln Ala Phe
 115 120 125
 Leu Glu Glu Arg Leu Lys Lys
 130 135

<210> 9269

<211> 348

<212> PRT

<213> B.fragilis

<400> 9269

Ile Asn Ser Phe Met Leu Ser Glu Lys Arg Asn Ser Met Leu His Gly
 1 5 10 15
 Val Leu Leu Ile Ala Leu Phe Ser Cys Ala Ala Phe Tyr Ile Gly Asp
 20 25 30
 Met Glu Phe Ile Lys Lys Leu Ser Phe Ser Pro Met Ile Val Gly Ile
 35 40 45
 Ile Leu Gly Met Leu Tyr Ala Asn Ser Leu Arg Asn Asn Leu Pro Glu
 50 55 60
 Thr Trp Val Pro Gly Ile Gln Phe Cys Ser Lys Arg Ile Leu Arg Ile
 65 70 75 80
 Gly Ile Ile Leu Tyr Gly Phe Lys Leu Thr Phe Gln Asp Val Leu Ala
 85 90 95
 Val Gly Leu Pro Ala Ile Leu Ile Asp Thr Ile Val Val Thr Ile Thr
 100 105 110
 Ile Leu Gly Gly Ile Leu Ile Gly Arg Met Leu Lys Met Asp Arg Gly
 115 120 125

Val Ala Leu Leu Thr Ser Ile Gly Ser Gly Ile Cys Gly Ala Ala Ala
 130 135 140
 Ile Leu Gly Ala Glu Ser Thr Ile Gln Thr Lys Pro Tyr Lys Thr Ala
 145 150 155 160
 Val Ala Val Ser Thr Val Val Ile Phe Gly Thr Leu Ser Met Phe Ile
 165 170 175
 Tyr Pro Ile Leu Tyr Arg Asn Gly Thr Phe Val Leu Ser Pro Asn Glu
 180 185 190
 Met Gly Ile Phe Thr Gly Ala Thr Leu His Glu Val Ala His Thr Val
 195 200 205
 Gly Ala Gly Asn Ala Met Gly Lys Glu Val Ser Asp Val Ala Ile Ile
 210 215 220
 Val Lys Met Ile Arg Val Met Met Leu Val Pro Val Leu Leu Ile Thr
 225 230 235 240
 Ser Phe Met Val Ser Arg Ala Ala Val Lys Ala Gly Gly Gln Gly Gly
 245 250 255
 Ser Met Lys Asp Ile Ser Ile Pro Trp Phe Ala Ile Gly Phe Leu Ala
 260 265 270
 Val Ile Gly Phe Asn Ser Phe Asp Leu Leu Pro Gln Ser Leu Ile Ala
 275 280 285
 Phe Ile Asn Asn Leu Asp Thr Phe Leu Leu Thr Met Ala Met Thr Ala
 290 295 300
 Leu Gly Ala Glu Thr Ser Ile Asp Lys Phe Lys Lys Ala Gly Ala Lys
 305 310 315 320
 Pro Phe Val Leu Ala Ser Leu Leu Tyr Leu Trp Leu Ile Val Gly Gly
 325 330 335
 Tyr Phe Leu Val Lys Leu Leu Ala Pro Val Leu Met
 340 345

<210> 9270

<211> 351

<212> PRT

<213> B.fragilis

<400> 9270

Ser Pro Lys Leu Lys Ser Met Ala Gly Glu Ile Asn Lys Leu Ile Pro
 1 5 10 15
 Gln Tyr Gly Glu Leu Asn Arg Ile Tyr Asn Asp Trp Val Thr Asn Tyr
 20 25 30
 Ala Phe Ser Phe Asp Lys Gln Lys Phe Ile Thr Asp Phe Tyr Arg Gln
 35 40 45
 His Asn Asp Thr Lys Ala Phe Glu Ala Ala Ile Leu Glu Leu Val Leu
 50 55 60
 Asp Lys Gln Lys Glu Gln Tyr Thr Leu Ile Leu Asn Ser Leu Lys Ile
 65 70 75 80
 Glu Ile Glu Lys Asn Ile Arg Ala Tyr Glu Thr Lys Pro Leu Asn Asp
 85 90 95
 Asp Val Ile Lys Arg Val Cys Phe His Tyr Ala Asp Arg His Asn Ser
 100 105 110
 Ala Ile Lys Asp Gln Leu Glu Ile Thr Thr Lys Leu His Glu Pro Leu
 115 120 125
 Asn Asp Ala Tyr His Arg Tyr Asp Phe Ile Gly Phe Arg Glu His Thr
 130 135 140
 Asp Glu Glu Glu Ile Gln Ala Glu Lys Glu Tyr Glu Arg Cys Lys Ala
 145 150 155 160
 Glu Tyr Asp Lys Glu Lys Lys Glu Leu Asp Lys Leu Tyr Glu Leu Gln
 165 170 175
 Lys Gln Asp Arg Lys Glu Ala Phe Gln Tyr Ile Glu Asn Leu Ser Gly
 180 185 190

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Asn Val Tyr Arg Leu Ser Leu Leu Phe Met Glu Val Leu Lys Lys Tyr
    195                200                205
Leu Pro Asn Asp Arg Glu Glu Lys Gln Gln Asp Glu Pro Val Lys Gln
    210                215                220
Asn Glu Gln Glu Glu Val Gln Asn Ser Pro Glu Gly Gln His Glu Tyr
    225                230                235                240
Phe Asp Met Lys Gln Leu Ser Pro Ile His Glu Thr Cys Val Gly Glu
    245                250                255
Gln Phe Glu Ala Ile Thr Ile Ala Asp Phe Tyr Ala Asn Ile Asn Leu
    260                265                270
Tyr Pro Cys Lys Asn Lys Leu Lys Ile Lys Ala Arg Glu Lys Ile Arg
    275                280                285
Val Cys Tyr Leu Ile Phe Leu Met Ser Glu Lys Leu Ser Lys Gln Tyr
    290                295                300
Arg Asp Glu Trp Arg Ser Gln Ile Leu Lys Leu Leu Asp Ile Asp Glu
    305                310                315                320
Ser Tyr Tyr Arg Ser Lys Tyr Lys Glu Pro Val Ser Asp Phe Pro Ser
    325                330                335
Asp Ser Asn Gln Lys Phe Ala Lys Glu Met Glu Ser Ile Phe Gly
    340                345                350

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<210> 9271
<211> 63
<212> PRT
<213> B.fragilis

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<400> 9271
Ser Gly Tyr Ser Phe Ile Ser Val Phe Cys Tyr Pro Leu Ile His Tyr
  1          5          10          15
Thr Thr Phe Phe Phe Thr Phe Phe Tyr Ile Ser Val Ile Asp Leu Arg
    20          25          30
Ser Thr Leu Phe Lys Arg Phe Ser Val Val Val Ile Cys Glu Ile Tyr
    35          40          45
Thr Asn Gly Trp Leu Phe Phe Lys Glu Thr Ile Asn Gly Asn Gly
    50          55          60

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<210> 9272
<211> 189
<212> PRT
<213> B.fragilis

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<400> 9272
Thr Asp Asn Ser Asn Met Lys Lys Leu Ile Tyr Leu Leu Gly Leu Ala
  1          5          10          15
Met Leu Met Ala Val Ala Ala Cys Ser Gly Ser Ala Glu Lys Lys Lys
    20          25          30
Ser Asp Ile Arg Val Leu Met Gln Asp Ser Thr Asp Ala His Gly Val
    35          40          45
Gln Arg Met Thr Ala Arg Lys Ser Glu Val Asp Ile Lys Tyr Lys Gly
    50          55          60
Lys Glu Tyr His Ser Phe Ile Ser Arg Thr Pro Asn Asp Ser Leu Pro
    65          70          75          80
Arg Val Val Ser Gln Met Gly Asn Thr Tyr Val Asp Asn Gln Ile Val
    85          90          95
Leu Arg Leu Thr Arg Gly Asn Glu Arg Val Phe Ser Arg Thr Phe Thr
    100         105         110
Lys Lys Gln Phe Glu Ser Leu Ile Gly Asp Asp Phe Met Ala Lys Ser
    115         120         125
Ile Leu Glu Gly Ile Val Tyr Asp Lys Thr Thr Pro Glu Gly Ile Val

```

130		135		140
Tyr Ala Ala Ser Ile Cys Tyr Pro Gln Thr Asp Leu Tyr Val Pro Ile				
145		150		155
Ser Ile Thr Ile Ser Pro Asp Gly Lys Ile Ser Met Lys Lys Glu Glu				
	165		170	
Leu Leu Glu Glu Val Tyr Asp Glu Asp Thr Ser Ala Arg				175
	180		185	

<210> 9273

<211> 367

<212> PRT

<213> B.fragilis

<400> 9273

Phe Leu Asn Ser His Phe Met Lys Thr Thr Pro Phe Thr Glu Lys His				
1	5	10	15	
Ile Ala Leu Gly Ala Lys Met His Glu Phe Ala Gly Tyr Asn Met Pro				
	20	25	30	
Ile Glu Tyr Ser Gly Ile Ile Asp Glu His Leu Thr Val Cys Asn Ser				
	35	40	45	
Val Gly Val Phe Asp Val Ser His Met Gly Glu Phe Trp Val Lys Gly				
	50	55	60	
Pro His Ala Leu Asp Phe Leu Gln Lys Val Thr Ser Asn Asn Val Ala				
65	70	75	80	
Ala Leu Val Pro Gly Lys Ile Gln Tyr Thr Cys Phe Pro Asn Glu Asp				
	85	90	95	
Gly Gly Ile Val Asp Asp Leu Leu Val Tyr Gln Tyr Glu Leu Glu Lys				
	100	105	110	
Tyr Leu Leu Val Val Asn Ala Ser Asn Ile Glu Lys Asp Trp Asn Trp				
	115	120	125	
Cys Ile Ser His Asn Thr Glu Gly Ala Glu Leu Glu Asn Ser Ser Asp				
	130	135	140	
Asn Met Ala Gln Leu Ala Val Gln Gly Pro Lys Ala Ile Gln Ala Leu				
145	150	155	160	
Gln Lys Leu Thr Asp Ile Asn Leu Ala Asp Ile Pro Tyr Tyr Thr Phe				
	165	170	175	
Lys Val Gly Glu Phe Ala Gly Glu Lys Asn Val Ile Ile Ser Asn Thr				
	180	185	190	
Gly Tyr Thr Gly Ala Gly Gly Phe Glu Leu Tyr Phe Tyr Pro Asp Ala				
	195	200	205	
Ala Met Lys Ile Trp Asp Ala Val Phe Glu Ala Gly Ala Glu Phe Gly				
	210	215	220	
Ile Lys Pro Ile Gly Leu Gly Ala Arg Asp Thr Leu Arg Leu Glu Met				
225	230	235	240	
Gly Phe Cys Leu Tyr Gly Asn Asp Leu Asp Asp Thr Thr Ser Pro Ile				
	245	250	255	
Glu Ala Gly Leu Gly Trp Ile Thr Lys Phe Val Asp Gly Lys Asn Phe				
	260	265	270	
Thr Asn Arg Ser Met Leu Glu Lys Gln Lys Ala Glu Gly Thr Val Arg				
	275	280	285	
Lys Leu Val Gly Phe Glu Met Ile Asp Arg Gly Ile Pro Arg His Gly				
	290	295	300	
Tyr Glu Leu Thr Thr Ala Glu Gly Asp Lys Ile Gly Val Val Thr Ser				
305	310	315	320	
Gly Thr Met Ser Pro Ile Arg Lys Ile Gly Met Gly Tyr Val				
	325	330	335	
Lys Pro Glu Tyr Ser Lys Ile Gly Thr Glu Ile Cys Ile Asp Met Arg				
	340	345	350	
Gly Arg Lys Leu Lys Ala Val Val Val Lys Pro Pro Phe Arg Lys				

355

360

365

<210> 9274

<211> 74

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (67),(68),(69),(70),(71)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9274

Met	Ser	Gln	Gln	Gln	Glu	Tyr	Trp	Phe	Ala	Ala	Arg	Thr	Arg	Lys	Asp
1				5					10					15	
Gln	Glu	Leu	Thr	Thr	Arg	Asp	Ala	Leu	Glu	Lys	Ile	Gly	Val	Glu	Tyr
			20					25					30		
Phe	Leu	Pro	Thr	Gln	Phe	Val	Ile	Arg	Gln	Leu	Lys	Tyr	Arg	Arg	Arg
		35					40					45			
Arg	Val	Glu	Val	Pro	Ala	Ile	Arg	Leu	His	Gln	Gly	Cys	Lys	Gly	Pro
	50					55					60				
Gln	Gly	Xaa	Xaa	Xaa	Xaa	Xaa	Gly	Val	Leu						
65						70									

<210> 9275

<211> 634

<212> PRT

<213> B.fragilis

<400> 9275

Arg	Ser	Leu	Ser	Tyr	Arg	Leu	Leu	Ile	Ile	Asn	His	Leu	Lys	Lys	Arg
1				5					10					15	
Met	Asp	Lys	Asn	Thr	Ile	Thr	Gly	Leu	Val	Leu	Ile	Gly	Ile	Leu	Leu
			20					25					30		
Val	Gly	Phe	Ser	Phe	Leu	Ser	Arg	Pro	Ser	Glu	Glu	Gln	Ile	Ala	Ala
		35					40					45			
Gln	Lys	Arg	Tyr	Tyr	Asp	Ser	Ile	Ala	Val	Val	Gln	Gln	Glu	Glu	
	50					55					60				
Ala	Leu	Arg	Ala	Lys	Thr	Glu	Ala	Ala	Leu	Ala	Asn	Glu	Lys	Glu	Glu
65					70					75					80
Thr	Ala	Ala	Asp	Ser	Ala	Ser	Leu	Phe	Phe	Ser	Ala	Thr	Lys	Gly	Lys
			85						90					95	
Glu	Ala	Phe	Thr	Thr	Ile	Gln	Asn	Asn	Leu	Val	Glu	Ile	Thr	Leu	Asp
			100					105					110		
Asn	Lys	Gly	Gly	Arg	Val	Tyr	Ser	Ala	Leu	Leu	Lys	Asn	Tyr	Met	Gly
		115					120					125			
Gln	Asp	Lys	Lys	Pro	Val	Val	Leu	Phe	Asn	Gly	Ser	Asp	Ala	Ser	Met
	130					135						140			
Asn	Phe	Asn	Phe	Tyr	Asn	Lys	Lys	Gly	Ala	Leu	Gln	Thr	Lys	Asp	Phe
145					150					155					160
Tyr	Phe	Glu	Ala	Val	Asn	Lys	Thr	Asp	Ser	Ser	Val	Thr	Met	Arg	Leu
				165					170					175	
Ala	Ala	Asp	Ser	Ala	Ser	Tyr	Ile	Asp	Phe	Ile	Tyr	Thr	Leu	Lys	Pro
			180					185					190		
Asp	Asn	Tyr	Leu	Met	Ser	Phe	Val	Ile	Lys	Ala	Thr	Gly	Met	Asp	Gly
		195					200					205			
Lys	Leu	Ala	Ala	Ser	Thr	Asn	Tyr	Val	Asp	Ile	Ser	Trp	Ser	Gln	Arg
	210					215						220			
Ala	Arg	Gln	Ile	Glu	Lys	Gly	Tyr	Thr	Tyr	Glu	Asn	Arg	Leu	Ala	Asp

225 230 235 240
 Leu Thr Tyr Lys Tyr Thr Gly Asp Asp Val Asp Asn Leu Ser Ala Ser
 245 250 255
 Lys Asp Asp Glu Lys Ser Val Ser Glu Arg Leu Asp Trp Ile Ala Phe
 260 265 270
 Lys Asn Gln Phe Phe Ser Ser Val Phe Ile Ala Glu Gln Asp Phe Glu
 275 280 285
 Lys Thr Thr Val Lys Ser Lys Met Glu Lys Gln Gly Ser Gly Tyr Ile
 290 295 300
 Lys Asp Tyr Ser Ala Glu Met Ser Thr Phe Phe Asp Pro Thr Gly Lys
 305 310 315 320
 Gln Pro Thr Asp Met Tyr Phe Tyr Phe Gly Pro Asn His Tyr Lys Thr
 325 330 335
 Leu Thr Ala Leu Asp Lys Gly Arg Glu Glu Lys Trp Glu Leu Asn Asn
 340 345 350
 Leu Val Tyr Leu Gly Trp Pro Leu Ile Arg Trp Ile Asn Lys Trp Ile
 355 360 365
 Thr Ile Asn Val Phe Asp Trp Leu Ser Gly Trp Gly Leu Ser Met Gly
 370 375 380
 Ile Val Leu Leu Leu Leu Thr Ile Met Val Lys Ile Val Val Phe Pro
 385 390 395 400
 Ala Thr Trp Lys Thr Tyr Met Ser Ser Ala Lys Met Arg Val Leu Lys
 405 410 415
 Pro Lys Ile Asp Glu Ile Asn Lys Lys Tyr Pro Lys Gln Glu Asp Ala
 420 425 430
 Met Lys Lys Gln Gln Glu Val Met Gly Leu Tyr Ser Gln Tyr Gly Val
 435 440 445
 Ser Pro Met Gly Gly Cys Leu Pro Met Leu Leu Gln Phe Pro Ile Leu
 450 455 460
 Met Ala Leu Phe Met Phe Val Pro Ser Ala Ile Glu Leu Arg Gln Gln
 465 470 475 480
 Ser Phe Leu Trp Ala Asp Asp Leu Ser Thr Tyr Asp Ala Phe Ile Thr
 485 490 495
 Phe Pro Phe His Ile Pro Phe Leu Gly Asn His Leu Ser Leu Phe Cys
 500 505 510
 Leu Leu Met Thr Val Thr Asn Ile Leu Asn Thr Lys Tyr Thr Met Gln
 515 520 525
 Gln Gln Asp Thr Gly Ala Gln Pro Gln Met Ala Ala Met Lys Trp Met
 530 535 540
 Met Tyr Leu Met Pro Ile Met Phe Leu Phe Val Leu Asn Asp Tyr Pro
 545 550 555 560
 Ser Gly Leu Asn Tyr Tyr Tyr Phe Ile Ser Thr Leu Ile Ser Val Val
 565 570 575
 Thr Met Ile Ile Leu Arg Arg Thr Thr Asp Glu Asn Lys Leu Leu Thr
 580 585 590
 Glu Leu Glu Ala Lys Lys Lys Asp Pro Lys Gln Met Lys Lys Thr Gly
 595 600 605
 Phe Ala Ala Arg Leu Glu Ala Met Gln Lys Gln Gln Glu Gln Leu Ala
 610 615 620
 Lys Glu Arg Ala Asn Lys Gln Asn Lys Lys
 625 630

<210> 9276

<211> 191

<212> PRT

<213> B.fragilis

<400> 9276

Arg Ile Lys Ser Leu Ser Pro Tyr Tyr Lys Cys Lys Leu Ser Leu Tyr

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1           5           10           15
Leu Pro Tyr Lys Leu Lys Asn Thr Thr Asn Met Phe Thr Ile Arg Lys
20           25           30
Ala Thr Ser Asp Asp Cys Lys Leu Ile Asn Glu Leu Ala Asn Gln Val
35           40           45
Phe Pro Ala Thr Tyr Lys Glu Ile Leu Ser Thr Glu Gln Leu Asp Tyr
50           55           60
Met Met Glu Trp Met Tyr Ala Pro Glu Asn Ile Arg Lys Gln Met Glu
65           70           75           80
Glu Glu Gly His Val Tyr Phe Ile Ala Tyr Gln Gly Asp Glu Pro Cys
85           90           95
Gly Tyr Val Ser Val Gln Pro Gln Asp Ala Asp Val Phe His Leu Gln
100          105          110
Lys Ile Tyr Val Leu Pro Gly Phe Gln Gly Ala His Leu Gly Ser Lys
115          120          125
Leu Phe Asp His Ala Val Gln Tyr Ile Lys Glu Ile His Pro Ser Pro
130          135          140
Cys Leu Met Glu Leu Asn Val Asn Arg Asn Asn Lys Ala Leu His Phe
145          150          155          160
Tyr Glu His Lys Gly Met Lys Lys Leu Arg Glu Gly Asp Phe Pro Ile
165          170          175
Gly Asn Gly Tyr Tyr Met Asn Asp Tyr Ile Met Gly Leu Glu Leu
180          185          190

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<210> 9277
 <211> 143
 <212> PRT
 <213> B.fragilis

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<400> 9277
Ile Met Met Pro Val Arg Arg Ser Gln Asn Trp Leu Pro Ser Ile Phe
1           5           10           15
Asn Asp Phe Phe Asp Asn Glu Leu Met Ala Lys Ala Asn Ala Thr Ala
20           25           30
Pro Ala Ile Asn Val Ile Glu Thr Asp Lys Ala Tyr Lys Leu Glu Leu
35           40           45
Ala Ala Pro Gly Met Thr Lys Glu Asp Phe Ser Val Arg Ile Asp Glu
50           55           60
Glu Asn Asn Leu Val Ile Ser Met Glu Lys Lys Ala Glu Asn Lys Glu
65           70           75           80
Glu Lys Lys Asp Gly Arg Tyr Leu Arg Arg Glu Phe Ser Tyr Ser Lys
85           90           95
Phe Gln Gln Thr Met Ile Leu Pro Glu Asn Val Asp Lys Asp His Ile
100          105          110
Ser Ala Gln Val Glu Asn Gly Val Leu Asn Ile Glu Leu Pro Lys Leu
115          120          125
Ser Glu Glu Glu Val Lys Lys Pro Asp Arg Thr Ile Glu Val Lys
130          135          140

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<210> 9278
 <211> 113
 <212> PRT
 <213> B.fragilis

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<400> 9278
Phe Tyr Asn Thr Met Lys Arg Tyr Cys Gln Thr Leu Glu Leu Tyr Asn
1           5           10           15
Asp Ser Glu Leu Ile Arg Ala Tyr Val Ala Glu His Gln His Val Trp
20           25           30

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Ile Trp Val Arg Met Gly Arg Ile Leu Asp Val Ser Ala Asp Met Leu
 325 330 335
 Ile Ile Arg Gly Val Asn Val Phe Pro Thr Gln Ile Glu Ser Val Ile
 340 345 350
 Leu Glu Met Ala Glu Phe Glu Pro His Tyr Leu Leu Thr Ile Asp Arg
 355 360 365
 Lys Asn Asn Thr Asp Thr Met Glu Leu Lys Val Glu Val Arg Pro Asp
 370 375 380
 Tyr Tyr Ser Asp Glu Ile Asn Lys Met Leu Ala Leu Lys Lys Lys Leu
 385 390 395 400
 Thr Gly Arg Leu Gln Ser Val Leu Gly Leu Gly Val Asp Val Lys Leu
 405 410 415
 Val Glu Pro Arg Ser Ile Glu Arg Ser Val Gly Lys Ala Lys Arg Val
 420 425 430
 Ile Asp Asn Arg Lys Leu
 435

<210> 9280

<211> 1033

<212> PRT

<213> B.fragilis

<400> 9280

Lys Glu Lys Thr Asp Ile Leu Ser Tyr Tyr Ile Met Asn Lys Gln Thr
 1 5 10 15
 Ser Thr Pro Ser Gln Ile His Arg Leu Gln Gln Thr Ile Tyr Glu Asn
 20 25 30
 Leu Pro Val Gly Met Glu Leu Tyr Asp Gly Asp Gly Tyr Leu Ile Glu
 35 40 45
 Ile Asn Ser Val Gly Leu Lys Met Met Gly Val Lys Asp Lys Gln Asp
 50 55 60
 Met Leu Gly Ile Asn Ile Phe Glu Asn Pro Asn Ile Pro Val Glu Met
 65 70 75 80
 Lys Arg Arg Leu Arg Ala Gly Glu Asn Ile Arg Phe Thr Val Lys Tyr
 85 90 95
 Asp Phe Asp Leu Ala Lys Ala His Tyr Pro Thr Val Leu Ser Gly Ile
 100 105 110
 Ser Tyr Phe Glu Ile Ala Val Ser Val Val Leu Asp Glu Asn Lys Glu
 115 120 125
 Ile Asp Lys Phe Leu Phe Ile Ala Gln Asp Val Thr Glu Ala Val His
 130 135 140
 Thr Gln Glu Ile Leu Arg Gln Ser Lys Gln Lys Thr Ala Leu Ala Met
 145 150 155 160
 Gln Ala Ala Glu Val Met Leu Trp Glu Phe Asp Val Cys Thr Arg Leu
 165 170 175
 Phe Tyr Ala Glu Asn Glu Pro Leu Asn Gly Tyr Asp Pro Thr Gln Ala
 180 185 190
 Leu Thr Ile Glu Asp Tyr Lys Lys Gln Ile His Pro Glu Asp Trp Lys
 195 200 205
 Lys Ala Glu Ile Ile Leu Leu Asp Met Leu Ser Gly Cys Asp Cys Leu
 210 215 220
 Tyr Glu Ile Asp Phe Arg Ile Arg Leu Ser Asp Thr Ser Glu Trp Gln
 225 230 235 240
 Tyr Cys Lys Leu Asn Cys Thr Pro Tyr Glu Arg Gly Thr Asp Gly Lys
 245 250 255
 Val Ile Lys Tyr Val Gly Phe Arg Lys Asn Asn Thr Glu Leu Gln Arg
 260 265 270
 Arg Lys Leu Leu Gln Glu Asn Ile Leu Asn Ser Ile Pro Leu Pro Ile
 275 280 285

His	Ile	Lys	Asp	Val	Glu	Asp	Asp	Phe	Arg	Tyr	Val	Phe	Cys	Asn	Glu
290						295					300				
Glu	Ser	Met	Arg	Met	Phe	Gly	Thr	His	Glu	Gly	Glu	Thr	Val	Cys	Ser
305					310					315					320
Val	Leu	Asp	Ser	Glu	Gln	Ala	Glu	Arg	Met	Gln	Lys	Thr	Asp	Leu	Glu
				325					330					335	
Val	Phe	Thr	Thr	Gly	Lys	Pro	Tyr	Phe	Gly	Val	Glu	Arg	Ile	Ile	Leu
				340				345					350		
Lys	Asp	Gly	Arg	Ser	Tyr	Asp	Thr	Ile	Val	Arg	Lys	Asn	Ile	Ile	Tyr
		355					360					365			
Asp	Gly	Thr	Lys	Arg	Leu	Leu	Leu	Asn	Ile	Arg	Trp	Asp	Gln	Lys	Leu
		370				375					380				
Gln	Asn	Asp	Leu	Lys	Arg	Arg	Ala	Lys	Val	Leu	Ser	Met	Ser	Met	Glu
385					390					395					400
Val	Met	Asn	Ala	Tyr	Thr	Trp	Phe	Tyr	Glu	Pro	Ser	Lys	Gln	Arg	Val
				405					410					415	
Ser	Phe	Gly	Glu	Gly	Phe	Asp	Lys	Ile	Gly	Arg	Asn	Ala	Leu	Asp	Ile
			420					425					430		
Asn	Ser	Phe	Glu	Lys	Phe	Ala	Glu	Cys	Val	His	Pro	Asp	Asp	Arg	Gln
		435					440					445			
Arg	Phe	Val	Asp	Thr	Met	Asp	Ala	Val	Leu	Lys	Gln	Asp	Ser	Gly	Glu
		450				455					460				
Trp	Asp	Ile	Glu	Tyr	Arg	Ala	Asp	Leu	Arg	Gly	Asn	Gly	Asn	Tyr	Glu
465					470					475					480
Trp	Trp	Lys	Thr	Arg	Gly	Val	Leu	Glu	Thr	Ser	Ile	Leu	Asn	Asp	His
				485					490					495	
Pro	Tyr	Gln	Tyr	Val	Ser	Gly	Met	Ser	Ile	Ser	Ile	Glu	Ser	Tyr	Lys
			500					505				510			
Gln	Thr	Glu	Leu	Thr	Leu	Leu	Lys	Asn	Lys	Glu	Lys	Leu	Asn	Lys	Leu
		515					520					525			
Ile	Arg	Gln	Asn	Glu	Leu	Val	Leu	Asn	Asn	Thr	Asn	Ser	Gly	Leu	Ala
		530				535						540			
Tyr	Ile	Thr	Thr	Asp	Tyr	Val	Val	Gln	Trp	Glu	Asn	Val	Ser	Val	Cys
545					550					555					560
Ser	Ser	Ser	Leu	Ser	Phe	Glu	Ala	Tyr	Lys	Arg	Gly	Glu	Cys	Cys	Tyr
				565					570				575		
Lys	Ser	Ala	His	Asn	Arg	Thr	Ser	Pro	Cys	Asp	Asn	Cys	Val	Leu	Ser
			580					585					590		
Lys	Val	Leu	Val	Ser	Arg	Gln	Met	Glu	Lys	Ile	Lys	Phe	His	Leu	Glu
		595					600					605			
Asn	Asn	Arg	Ile	Val	Glu	Val	Leu	Ala	Thr	Pro	Val	Phe	Asn	Glu	Ser
		610				615					620				
Glu	Glu	Ile	Asp	Gly	Ile	Val	Ile	Arg	Val	Asp	Asp	Ile	Thr	Asp	Arg
625					630					635					640
Glu	Arg	Met	Ile	Glu	Glu	Leu	Arg	Gln	Ala	Lys	Leu	Leu	Ala	Glu	Gln
				645					650					655	
Ser	Asp	Lys	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu	Ile
			660					665					670		
Arg	Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Asp	Leu	Leu	Met	Asn
		675					680					685			
Ser	Glu	Glu	Gln	Gly	Asp	Lys	Glu	Glu	Tyr	Met	Gln	Ile	Ile	Asn	Thr
		690				695					700				
Asn	Asn	Glu	Leu	Leu	Leu	Lys	Leu	Ile	Asn	Asp	Ile	Leu	Asp	Leu	Ser
705					710				715						720
Lys	Leu	Glu	Ser	Gly	Ser	Val	Glu	Leu	Lys	Tyr	Glu	Glu	Phe	Asp	Leu
				725					730					735	
Ala	Glu	Tyr	Phe	Asp	Ser	Met	Ala	Ser	Ser	Met	Lys	Gln	Arg	Val	Thr
			740					745					750		
Asn	Pro	Lys	Val	Gln	Leu	Val	Ala	Val	Asn	Pro	Tyr	Ser	Val	Cys	Arg

755	760	765
Val Arg Leu Asp Lys Asn Arg	Val Ala Gln Val	Val Thr Asn Tyr Val
770	775	780
Thr Asn Ala Ile Lys Tyr Thr	Pro Gln Gly Thr	Ile Glu Met Gly Tyr
785	790	795
Glu Val Val Asp Ala Gly Ile	Arg Leu Tyr Val	Arg Asp Thr Gly Ile
805	810	815
Gly Ile Pro Glu Glu Lys Lys	Arg Lys Val Phe His	Arg Phe Glu Lys
820	825	830
Leu Asp Glu Phe Ala Gln Gly	Thr Gly Leu Gly Leu	Ser Ile Cys Lys
835	840	845
Ala Ile Thr Glu Ser Met Gly	Gly Ser Val Gly Phe	Glu Ser Glu Tyr
850	855	860
Ser Arg Gly Ser Leu Phe Trp	Ala Val Leu Pro Cys	Asp Pro Glu Val
865	870	875
Gln Met Arg Arg Glu Ser Asn	Ile Ala Ile Gly Gln	Asn Thr Gly Lys
885	890	895
Asp Asp Leu Ile Arg Ser Gly	Asn Gln Tyr Ser Ala	Leu Asp Arg Lys
900	905	910
Thr Val Leu Val Val Glu Asp	Ile Ser Ser Asn Tyr	Leu Leu Ile Ser
915	920	925
Ala Met Leu Ser Lys His Tyr	Asn Leu Leu His Ala	Val Asn Gly Glu
930	935	940
Gln Ala Val Ala Met Val Lys	Glu Tyr Lys Ile Asp	Leu Leu Leu Met
945	950	955
Asp Met Lys Met Pro Val Met	Asp Gly Leu Thr Ala	Thr Ala Glu Ile
965	970	975
Arg Lys Phe Asp Thr Asn Ile	Pro Ile Val Ala Leu	Thr Ala His Ala
980	985	990
Phe Glu Ser Asp Lys Val Ala	Ala Leu Lys Ser Gly	Cys Asn Asp Tyr
995	1000	1005
Leu Val Lys Pro Val Asp Lys	Ala Arg Leu Met Ser	Val Leu Arg Lys
1010	1015	1020
Tyr Cys His Pro Ser Thr Leu	Val Leu	
1025	1030	

<210> 9281

<211> 737

<212> PRT

<213> B.fragilis

<400> 9281

Arg Lys Glu Thr Gly Arg Lys Ser Arg	Phe Asp Leu Ile Phe Ala Tyr
1	5
Leu Arg Ser Thr Ile Met Glu Glu Asn Thr Ser Lys Leu Leu Ile Ile	10
20	25
Lys Ile Thr Met Arg Gln Val Asn Leu Phe Ile Met Ser Ala Ala Met	30
35	40
Met Leu Ala Ser Cys Gly Gly Thr Lys Asp Ala Gly Lys Thr Asp Gln	45
50	55
Ala Leu Ile Gly Lys Ser Asp Ile Lys Ile Glu Gly Lys Arg Met Thr	60
65	70
Pro Glu Ala Leu Trp Ala Met Gly Arg Ile Gly Gly Leu Ala Val Ser	75
85	90
Pro Asp Gly Lys Gln Ile Ala Tyr Thr Val Ala Tyr Tyr Ser Val Pro	95
100	105
Glu Asn Lys Ser Asn Arg Glu Val Phe Val Met Asn Ala Asp Gly Thr	110
115	120
Asp Asn Arg Gln Ile Thr His Thr Pro Tyr Gln Glu Asn Glu Val Thr	125

130	135	140
Trp Ala Ala Asp Gly Ser Lys Leu Leu Phe Leu Ser Asn Asp Asn Gly		
145	150	155
Ser Ser Gln Leu Tyr Glu Met Asn Pro Asp Gly Ser Gly Arg Lys Gln		
	165	170
Ile Ser Lys Tyr Asp Gly Asp Ile Glu Gly Tyr Ser Ile Ser Pro Asp		
	180	185
Gly Lys Lys Ile Leu Phe Ile Ala Gln Val Lys Thr Val Lys Ser Thr		
	195	200
Ala Asp Lys Tyr Pro Asp Leu Asp Lys Ala Thr Gly Ile Ile Ile Thr		
	210	215
Asp Leu Met Tyr Lys His Trp Asp Glu Trp Val Thr Thr Ala Pro His		
225	230	235
Pro Phe Ile Ala Asp Phe Asp Gly Lys Ser Ile Ser Asn Ile Ile Asp		
	245	250
Val Leu Glu Gly Glu Pro Tyr Glu Ser Pro Met Lys Pro Trp Gly Gly		
	260	265
Ile Glu Gln Leu Ala Trp Asn Thr Thr Ser Asp Lys Val Ala Tyr Thr		
	275	280
Cys Arg Lys Lys Thr Gly Leu Ala Tyr Ala Ile Ser Thr Asn Ser Asp		
	290	295
Ile Tyr Val Tyr Asp Leu Asn Thr Lys Lys Thr Val Asn Ile Thr Glu		
305	310	315
Gly Met Met Gly Tyr Asp Thr Asn Pro Gln Tyr Ser Pro Asp Gly Lys		
	325	330
Ser Ile Ala Trp Gln Ser Met Glu Arg Asp Gly Tyr Glu Ala Asp Gln		
	340	345
Asn Arg Leu Phe Val Met Asn Leu Glu Thr Gly Glu Lys Arg Phe Val		
	355	360
Ser Lys Ala Phe Asp Ser Asn Val Asp Ala Phe Val Trp Ser Arg Asp		
	370	375
Ala Lys Thr Ile Tyr Phe Thr Gly Val Trp His Gly Glu Thr Gln Ile		
385	390	395
Tyr Ser Leu Asp Leu Ser Asn Asp Ser Val Arg Pro Val Thr Ser Gly		
	405	410
Met Tyr Asp Tyr Glu Gly Val Ala Leu Phe Gly Asp Lys Leu Ile Ala		
	420	425
Lys Arg His Ser Met Ser Met Gly Asp Glu Ile Tyr Ala Ile Ala Leu		
	435	440
Asp Gly Gln Thr Thr Gln Leu Thr Gln Glu Asn Lys Gln Ile Tyr Asp		
	450	455
Gln Ile Glu Met Gly Lys Val Glu Gly Arg Trp Met Lys Thr Thr Asp		
465	470	475
Ser Lys Glu Met Leu Thr Trp Val Ile Tyr Pro Pro Gln Phe Asp Pro		
	485	490
Asn Lys Lys Tyr Pro Thr Leu Leu Phe Cys Glu Gly Gly Pro Gln Ser		
	500	505
Pro Val Ser Gln Phe Trp Ser Tyr Arg Trp Asn Met Gln Ile Met Ala		
	515	520
Ala Asn Gly Tyr Ile Val Val Ala Pro Asn Arg Arg Gly Leu Pro Gly		
	530	535
Phe Gly Leu Glu Trp Asn Glu Ala Ile Ser Gly Asp Tyr Gly Gly Gln		
545	550	555
Cys Met Lys Asp Tyr Phe Thr Ala Ile Asp Glu Met Ala Lys Glu Pro		
	565	570
Phe Val Asp Ser Asp Arg Leu Gly Cys Val Gly Ala Ser Phe Gly Gly		
	580	585
Phe Ser Val Tyr Trp Leu Ala Gly His His Asp Lys Arg Phe Lys Ala		
	595	600
		605

Phe Ile Ala His Asp Gly Ile Phe Asn Met Glu Met Gln Tyr Leu Glu
 610 615 620
 Thr Glu Glu Lys Trp Phe Ala Asn Trp Asp Met Gly Gly Ala Tyr Trp
 625 630 635 640
 Glu Lys Gln Asn Pro Thr Ala Gln Arg Thr Phe Ala Asn Ser Pro His
 645 650 655
 Leu Phe Val Glu Lys Trp Asp Thr Pro Ile Leu Cys Ile His Gly Glu
 660 665 670
 Lys Asp Tyr Arg Ile Leu Ala Asn Gln Ala Met Ala Ala Phe Asp Ala
 675 680 685
 Ala Val Met Arg Gly Val Pro Ala Glu Leu Leu Ile Tyr Pro Asp Glu
 690 695 700
 Asn His Trp Val Leu Lys Pro Gln Asn Gly Val Leu Trp Gln Arg Thr
 705 710 715 720
 Phe Phe Glu Trp Leu Asp Gln Trp Leu Lys Pro Asn Glu Thr Ala Gln
 725 730 735
 Lys

<210> 9282
 <211> 556
 <212> PRT
 <213> B.fragilis

<400> 9282
 Tyr Ser Asn Phe Met Phe Glu Gly Gln Pro Lys Gly Leu Tyr Ala Leu
 1 5 10 15
 Ala Leu Ala Asn Thr Gly Glu Arg Phe Gly Tyr Tyr Thr Met Leu Ala
 20 25 30
 Ile Phe Thr Leu Phe Leu Gln Ala Lys Phe Gly Tyr Thr Ala Ala Glu
 35 40 45
 Thr Ser Thr Ile Phe Gly Cys Phe Leu Ala Ala Val Tyr Phe Ile Pro
 50 55 60
 Phe Phe Gly Gly Ile Leu Ala Asp Lys Phe Gly Tyr Gly Lys Met Val
 65 70 75 80
 Thr Met Gly Ile Val Val Met Phe Ile Gly Tyr Ala Leu Leu Ala Ile
 85 90 95
 Pro Thr Ser Asp Asn Ser Gly Lys Ile Met Met Phe Gly Ala Leu Ala
 100 105 110
 Leu Ile Ala Cys Gly Thr Gly Leu Phe Lys Gly Asn Leu Gln Val Met
 115 120 125
 Val Gly Asn Leu Tyr Asp Ala Pro Glu Tyr Ser Ser Lys Arg Asp Thr
 130 135 140
 Ala Phe Ser Ile Phe Tyr Met Ala Ile Asn Ile Gly Ala Met Tyr Ala
 145 150 155 160
 Pro Thr Ala Ala Thr Lys Val Thr Asn Tyr Met Leu Gly Lys Ala Gly
 165 170 175
 Leu Ser Tyr Val Pro Gln Ile Pro Ser Leu Ala His Gln Tyr Leu Asp
 180 185 190
 Gly Thr Ile Thr Pro Ala Asn Gln Ala Thr Leu Glu Ser Leu Gln Ala
 195 200 205
 Ala Gln Asn Phe Thr Gly Asp Ile Ala Thr Phe Cys Thr Thr Tyr Ile
 210 215 220
 Asp Lys Leu Ser Glu Ala Tyr Asn Tyr Gly Phe Gly Val Ala Cys Val
 225 230 235 240
 Ser Leu Ile Ile Ser Met Leu Ile Tyr Val Ala Phe Arg Ser Thr Phe
 245 250 255
 Lys His Ala Asp Tyr Asn Ser Lys Gln Ala Lys Pro Ala Asn Val Val
 260 265 270

Glu Glu Lys Leu Thr Pro Glu Gln Thr Lys Gln Arg Ile Val Ala Leu
 275 280 285
 Leu Leu Val Phe Ala Val Val Ile Phe Phe Trp Met Ala Phe His Gln
 290 295 300
 Asn Gly Leu Thr Leu Thr Phe Phe Ala Arg Asp Tyr Thr Ala Gln Glu
 305 310 315 320
 Val Thr Gly Leu Asp Arg Leu Gly Phe Asn Ile Val Asn Leu Thr Phe
 325 330 335
 Leu Leu Ile Val Ile Tyr Gly Leu Phe Ser Leu Phe Gln Gly Lys Thr
 340 345 350
 Gly Lys Ser Lys Thr Ile Ala Gly Val Val Val Met Val Ala Leu Leu
 355 360 365
 Cys Leu Gly Trp Ser Tyr Thr Ser Met Asp Pro Thr Ile Asn Ile Leu
 370 375 380
 Pro Gln Ile Phe Gln Gln Phe Asn Pro Phe Phe Val Ile Ala Leu Thr
 385 390 395 400
 Pro Val Ser Leu Ala Val Phe Gly Tyr Leu Ala Arg Lys Gly Lys Glu
 405 410 415
 Pro Ser Ala Pro Arg Lys Ile Gly Ile Gly Met Met Ile Ala Val Cys
 420 425 430
 Gly Phe Leu Ile Met Ala Ile Gly Ser Ile Gly Leu Pro Thr Pro Asp
 435 440 445
 Ala Leu Ala Ala Ser Gly Ile Glu Lys Asp Ala Leu Val Ser Pro Asn
 450 455 460
 Trp Leu Ile Ser Thr Tyr Leu Val Leu Thr Phe Ala Glu Leu Phe Leu
 465 470 475 480
 Ser Pro Met Gly Ile Ser Phe Val Ser Lys Val Ala Pro Pro Lys Tyr
 485 490 495
 Lys Gly Met Met Met Gly Gly Trp Phe Ala Ala Thr Ala Ile Gly Asn
 500 505 510
 Tyr Leu Val Ala Ile Ile Gly Tyr Leu Trp Gly Gly Met Gln Leu Trp
 515 520 525
 Met Val Trp Ser Val Leu Ile Val Cys Cys Leu Leu Ala Ala Leu Phe
 530 535 540
 Ile Phe Ser Ile Met Lys Lys Leu Glu Lys Val Ala
 545 550 555

<210> 9283

<211> 207

<212> PRT

<213> B.fragilis

<400> 9283

Thr Ile His Tyr Met Ser Lys Lys Glu Thr Leu Lys Gln Gln Ile Leu
 1 5 10 15
 Asp Leu Thr Arg Glu Tyr Tyr Lys Glu Val His Gly Ser Ser Arg Ser
 20 25 30
 Phe Glu Pro Gly Lys Ser Phe Val Asn Tyr Gly Gly Arg Tyr Phe Asp
 35 40 45
 Asp Arg Glu Leu Val Asn Leu Val Asp Ser Ser Leu Asp Phe Trp Leu
 50 55 60
 Thr Ala Gly Pro Trp Ala Arg Lys Phe Glu Ile Arg Phe Ala Glu Trp
 65 70 75 80
 Leu Gly Val Lys Tyr Cys Ser Leu Thr Asn Ser Gly Ser Ser Ala Asn
 85 90 95
 Leu Leu Ala Phe Met Ala Leu Thr Ser Pro Gln Leu Gly Glu Arg Arg
 100 105 110
 Ile Arg Arg Gly Asp Glu Val Ile Thr Val Ala Cys Gly Phe Pro Thr
 115 120 125

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Thr Val Thr Pro Cys Ile Gln Tyr Gly Ala Val Pro Val Phe Val Asp
 130          135          140
Val Thr Ile Pro Glu Tyr Asn Ile Asp Val Thr Gln Leu Glu Ala Ala
145          150          155          160
Leu Ser Pro Lys Thr Lys Ala Val Met Ile Ala His Ser Leu Gly Asn
          165          170          175
Pro Phe Asp Leu Gln Ala Val Lys Asp Phe Cys Asp Lys His Asn Leu
          180          185          190
Trp Leu Val Glu Asp Asn Cys Asp Ala Leu Gly Ser Thr Val Phe
          195          200          205

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<210> 9284
 <211> 189
 <212> PRT
 <213> B.fragilis

```

<400> 9284
Arg Lys Asp Tyr Cys Arg Asn Ile Leu Ser Val His Val Arg Val Leu
1      5      10      15
Ser Leu His His Gln Leu Ser Lys Lys Tyr Leu Thr Lys Lys Arg Lys
20     25     30
Met Lys Lys Lys Ala Ile Phe Leu Leu Thr Ile Leu Leu Met Ala Ser
35     40     45
Phe Val Thr Ser Cys Ser Ser Asp Asp Asn Glu Lys Thr Glu Phe
50     55     60
Thr Ser Thr Leu Thr Ala Asn Gly Ser Ala Val Lys Ile Thr Asn Leu
65     70     75     80
Glu Gly Lys Ala Ile Ala Gly Ser Ile Tyr Glu Phe Trp Ile Asn Asp
85     90     95
Ala Thr Ser Asp Phe Tyr Ile Gln Gly Asn Ile Thr Ser His Glu Val
100    105    110
His Thr Ser Gly Lys Asp Val Thr Lys Asp Cys Lys Met Met Ile Ala
115    120    125
Leu Val Asn Asn Glu Glu Trp Tyr Thr Ser Glu Lys Glu Tyr Val Ser
130    135    140
Gly Thr Val Thr Ile Glu Lys Trp Asp Leu Glu Asn Phe Lys Val Thr
145    150    155    160
Leu Val Phe Lys Asp Tyr Lys Cys Lys Ser Gly Ser Lys Ser Ile Val
165    170    175
Leu Asn Gly Ser Val Thr Phe Pro Thr Ser Ile Asn Ile
180    185

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<210> 9285
 <211> 476
 <212> PRT
 <213> B.fragilis

```

<400> 9285
Arg Asn Arg Tyr Gly Glu Val Glu Ala Leu Lys Ser Ala Thr Phe Ser
1      5      10      15
Val Asn Pro Gly Glu Leu Phe Gly Ile Ile Gly Pro Asp Gly Ala Gly
20     25     30
Lys Ser Thr Leu Phe Arg Ile Leu Thr Thr Leu Leu Leu Ala Asp Ser
35     40     45
Gly Thr Ala Thr Val Asn Gly Leu Asp Val Val Lys Asp Tyr Lys Gln
50     55     60
Ile Arg Gln Gln Val Gly Tyr Met Pro Gly Arg Phe Ser Leu Tyr Gln
65     70     75     80
Asp Leu Thr Val Glu Glu Asn Leu Asp Phe Phe Ala Thr Val Phe His

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      85              90              95
Thr Thr Ile Arg Glu Asn Tyr Asp Leu Val Lys Asp Ile Tyr Gln Gln
      100              105              110
Ile Glu Pro Phe Arg Lys Arg Arg Ala Gly Ala Leu Ser Gly Gly Met
      115              120              125
Lys Gln Lys Leu Ala Leu Ser Cys Ala Leu Ile His Lys Pro Glu Ile
      130              135              140
Leu Phe Leu Asp Glu Pro Thr Thr Gly Val Asp Pro Val Ser Arg Lys
      145              150              155              160
Glu Phe Trp Glu Met Leu Arg His Leu Lys Asp Gln Gly Ile Thr Ile
      165              170              175
Leu Val Ser Thr Pro Ile Met Asp Glu Ala Arg Gln Cys Asp Arg Ile
      180              185              190
Ala Phe Ile Asn Glu Gly Glu Ile Gln Gly Ile Asp Val Pro Glu Arg
      195              200              205
Ile Leu Gln Arg Phe Ser His Ile Leu Cys Pro Pro Gly Leu Glu Arg
      210              215              220
Thr Glu Val His Ala Gly Asn Asp Phe Ala Ile Glu Val Asp Gln Leu
      225              230              235              240
Thr Lys Cys Phe Gly His Phe Thr Ala Val Asp His Ile Ser Phe Arg
      245              250              255
Val Asn Arg Gly Glu Ile Phe Gly Phe Leu Gly Ala Asn Gly Ala Gly
      260              265              270
Lys Thr Thr Ala Met Arg Met Leu Cys Gly Leu Ser Lys Pro Thr Ser
      275              280              285
Gly Met Ala Arg Val Ala Gly Phe Asp Val Ala Ala His Pro Glu Glu
      290              295              300
Val Lys Lys Asn Ile Gly Tyr Met Ser Gln Lys Phe Ser Leu Tyr Glu
      305              310              315              320
Asp Leu Lys Val Trp Glu Asn Ile Arg Leu Phe Ala Gly Ile Tyr Gly
      325              330              335
Met Gln Asp Arg Glu Ile Ala Glu Lys Thr Asp Ala Leu Leu Asp Arg
      340              345              350
Leu Gly Phe Ser Gly Glu Arg Asp Thr Leu Val Lys Ser Leu Pro Leu
      355              360              365
Gly Trp Lys Gln Lys Leu Ala Phe Ser Val Ser Ile Phe His Asn Pro
      370              375              380
Arg Ile Val Phe Leu Asp Glu Pro Thr Gly Gly Val Asp Pro Ala Thr
      385              390              395              400
Arg Arg Gln Phe Trp Glu Leu Ile Tyr Gln Ala Ala Asp Arg Gly Ile
      405              410              415
Thr Val Phe Val Thr Thr His Tyr Met Asp Glu Ala Glu Tyr Cys Asn
      420              425              430
Arg Val Ser Ile Met Val Asp Gly Arg Ile Glu Ala Leu Asp Thr Pro
      435              440              445
Arg Gly Leu Lys Ala His Phe His Ala Asp Thr Met Asp Asp Val Phe
      450              455              460
Gln Gln Leu Ala Arg Lys Ala Val Arg Lys Ala Asp
      465              470              475

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<210> 9286

<211> 112

<212> PRT

<213> B.fragilis

<400> 9286

```

Thr Lys Ile Leu Trp Met Ser Cys Leu Gly Arg Met Leu Pro Gln Thr
1      5      10      15
Ile Arg Met Asp Gly Ser Arg Pro Pro Ile Arg Lys Lys Leu Val Thr

```



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<210> 9287
<211> 452
<212> PRT
<213> B.fragilis
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<400>	9287														
Ile	Lys	Ser	Tyr	Tyr	Ala	His	Asn	Lys	Met	Phe	Lys	Asn	Ser	Lys	Lys
1				5					10					15	
Lys	Ile	Thr	Leu	Gly	Val	Ser	Val	Gln	Lys	Phe	Glu	Asn	Lys	Pro	Asn
			20					25					30		
Asn	Trp	Lys	Ile	Leu	Thr	Tyr	Lys	Arg	His	Thr	Ile	Thr	Ile	Glu	Glu
		35					40					45			
Leu	Val	Asn	Leu	Ile	Cys	Lys	Gly	His	Cys	Ile	Cys	Gln	Asn	Phe	Lys
	50					55					60				
Thr	Thr	Ser	Glu	Ile	Phe	Gly	Leu	Arg	Glu	Lys	Thr	Ile	Ala	Asn	Phe
65					70					75					80
Asp	Phe	Ala	Asp	Cys	Val	Ile	Leu	Asp	Ile	Asp	Asp	Thr	Phe	Leu	Ser
				85					90					95	
Met	Asn	Asp	Phe	Tyr	Leu	Ser	Leu	Lys	Asp	Glu	His	Lys	Pro	Thr	Ile
			100					105					110		
Ile	Tyr	Thr	Thr	Tyr	Ser	Asn	Ile	Asp	Asn	Ile	Asn	Asn	Arg	Phe	Arg
		115					120					125			
Pro	Ile	Tyr	Val	Phe	Asn	Glu	Pro	Ile	Arg	Ser	Asn	Glu	Tyr	Tyr	Arg
	130					135					140				
Gly	Ile	Ala	Asn	Thr	Ile	Val	Tyr	Asn	Ile	Gln	Lys	Glu	Ile	Glu	Gly
145					150					155					160
Phe	Asp	Leu	Lys	Asp	Lys	Thr	Cys	Leu	Asn	Ala	Ser	Gln	Gln	Phe	Ala
				165					170					175	
Gly	Asn	Gly	Asn	Asp	Asn	Ile	Val	Tyr	Tyr	Tyr	Asn	Asp	Asn	Ile	Phe
			180					185					190		
Cys	Pro	Thr	Asp	Phe	Gly	Phe	Asp	Glu	Asn	Ser	Phe	Ser	Asn	Ser	Asp
		195					200					205			
Ser	Ile	Leu	Lys	Arg	Glu	Arg	Lys	Asn	Asn	Ile	Gln	Ile	Asp	Leu	Glu
	210					215					220				
Ser	Leu	Ile	Gly	Asn	Ser	Glu	Phe	Met	Lys	Asp	Phe	Trp	Ser	Met	Gly
225				230						235					240
Tyr	Lys	Lys	Asn	Glu	Glu	Ile	Phe	Ile	Arg	Lys	Tyr	Ala	Gln	Ile	Tyr
			245						250					255	
Pro	Phe	Ile	Glu	Ala	Thr	Pro	Leu	Pro	Glu	Thr	Asp	Ser	Asp	Thr	Pro
			260					265					270		
Tyr	Ile	Leu	Leu	Pro	Asp	Asn	Tyr	Val	Lys	Ile	Ala	Arg	Tyr	Trp	Tyr
		275					280					285			
Lys	Glu	Pro	Leu	Thr	Lys	Gly	Asp	Gly	Thr	Ile	Val	Tyr	Lys	Ser	His
	290					295					300				
Ala	Val	Lys	Leu	Lys	Ser	Gly	His	Arg	Arg	Lys	Leu	Leu	Tyr	Asp	Gly
305					310					315					320
Cys	Leu	Leu	Arg	Lys	Ile	Met	Leu	Pro	Lys	Ile	Thr	Met	Glu	His	Leu

325 330 335
 Leu Tyr Cys Leu Val Cys Glu Arg Arg Tyr Tyr Val Asp Asn Gln Asp
 340 345 350
 Lys Val Ile Thr Asn Lys Ile Leu Tyr Gln Ile Ala Lys Asp Ala Trp
 355 360 365
 Asn Asp Thr Lys Arg Ser Ile Asn Pro Lys Lys Glu Glu Arg Gln Phe
 370 375 380
 Val Val Asn Pro Lys Tyr Cys Glu Lys Tyr Gly Ile Ser Lys Gln Ala
 385 390 395 400
 Ala Arg Asn Ile Ala Ala Lys Ile Leu Leu Asp Leu Gln Leu Lys Gln
 405 410 415
 Leu Tyr Asp Thr Asn Leu Ser Val Lys Glu Asn Leu Glu Ser Leu Lys
 420 425 430
 Asn Gln Gly Ile Lys Ile Gly Lys Ser Ser Leu Tyr Asn Trp Val Lys
 435 440 445
 Ser Gln Lys Ile
 450

<210> 9288
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9288
 Cys Gly Leu Tyr Pro Ser Pro Pro Met Thr Leu Leu Tyr Ile Asn Gly
 1 5 10 15
 Ile Pro Ser Leu Lys Ile Asn Leu Pro Tyr Ile Val Gly Ile Ile Asn
 20 25 30
 Val Phe Ser Ala Ile Gly Asn Ile Leu Val Ile Trp Val Ala Ser Asp
 35 40 45
 Glu Tyr Ala Val Leu Val Cys Lys Ser Val Cys Ile Val
 50 55 60

<210> 9289
 <211> 958
 <212> PRT
 <213> B.fragilis

<400> 9289
 Trp Asn Val Tyr Leu Asn Ser Asp Asn Met Gln Lys Leu Leu Ser Leu
 1 5 10 15
 Pro Pro Asn Leu Val Gln Ser Phe His Glu Leu Glu Arg Val Asn Arg
 20 25 30
 Thr Asp Trp Phe Cys Thr Ser Asp Pro Val Gly Lys Lys Leu Gly Ser
 35 40 45
 Gly Gly Gly Thr Ser Trp Leu Leu Glu Glu Cys Tyr Asn Glu Tyr Ser
 50 55 60
 Asp Gly Ala Thr Phe Gly Glu Trp Leu Glu Lys Glu Lys Arg Ile Leu
 65 70 75 80
 Leu His Ala Gly Gly Gln Ser Arg Arg Leu Pro Gly Tyr Ala Pro Ser
 85 90 95
 Gly Lys Ile Leu Thr Pro Val Pro Val Phe Arg Trp Glu Arg Gly Gln
 100 105 110
 His Leu Gly Gln Asn Leu Leu Ser Leu Gln Leu Pro Leu Tyr Glu Lys
 115 120 125
 Ile Met Ser Leu Ala Pro Asp Lys Leu His Thr Leu Ile Ala Ser Gly
 130 135 140
 Asp Val Tyr Ile Arg Ser Glu Lys Pro Leu Gln Ser Ile Pro Glu Ala
 145 150 155 160

Asp	Val	Val	Cys	Tyr	Gly	Leu	Trp	Val	Asp	Pro	Ser	Leu	Ala	Thr	His	
				165					170						175	
His	Gly	Val	Phe	Ala	Ser	Asp	Arg	Lys	His	Pro	Glu	Gln	Leu	Asp	Phe	
			180					185					190			
Met	Leu	Gln	Lys	Pro	Ser	Leu	Ala	Glu	Leu	Glu	Ser	Leu	Ser	Lys	Thr	
		195					200					205				
His	Leu	Phe	Leu	Met	Asp	Ile	Gly	Ile	Trp	Leu	Leu	Ser	Asp	Arg	Ala	
	210					215					220					
Val	Glu	Ile	Leu	Met	Lys	Arg	Ser	His	Lys	Glu	Ser	Ser	Glu	Glu	Leu	
225					230					235					240	
Lys	Tyr	Tyr	Asp	Leu	Tyr	Ser	Asp	Phe	Gly	Leu	Ala	Leu	Gly	Thr	His	
			245						250					255		
Pro	Arg	Ile	Glu	Asp	Glu	Glu	Val	Asn	Thr	Leu	Ser	Val	Ala	Ile	Leu	
			260					265					270			
Pro	Leu	Pro	Gly	Gly	Glu	Phe	Tyr	His	Tyr	Gly	Thr	Ser	Lys	Glu	Leu	
		275					280					285				
Ile	Ser	Ser	Thr	Leu	Ser	Val	Gln	Asn	Lys	Val	Tyr	Asp	Gln	Arg	Arg	
	290					295					300					
Ile	Met	His	Arg	Lys	Val	Lys	Pro	Asn	Pro	Ala	Met	Phe	Val	Gln	Asn	
305					310					315					320	
Ala	Val	Val	Arg	Ile	Pro	Leu	Cys	Ala	Glu	Asn	Ala	Asp	Leu	Trp	Ile	
			325						330					335		
Glu	Asn	Ser	His	Ile	Gly	Pro	Lys	Trp	Lys	Ile	Ala	Ser	Arg	His	Ile	
			340					345						350		
Ile	Thr	Gly	Val	Pro	Glu	Asn	Asp	Trp	Ser	Leu	Ala	Val	Pro	Ala	Gly	
		355					360					365				
Val	Cys	Val	Asp	Val	Val	Pro	Met	Gly	Asp	Lys	Gly	Phe	Val	Ala	Arg	
	370					375					380					
Pro	Tyr	Gly	Leu	Asp	Asp	Val	Phe	Lys	Gly	Asp	Leu	Arg	Asp	Ser	Lys	
385				390						395					400	
Thr	Thr	Leu	Thr	Gly	Ile	Pro	Phe	Gly	Glu	Trp	Met	Ser	Lys	Arg	Gly	
			405						410					415		
Leu	Ser	Tyr	Thr	Asp	Leu	Lys	Gly	Arg	Thr	Asp	Asp	Leu	Gln	Ala	Ala	
			420					425					430			
Ser	Val	Phe	Pro	Met	Val	Asn	Ser	Val	Glu	Glu	Leu	Gly	Leu	Val	Leu	
		435					440					445				
Arg	Trp	Met	Leu	Ser	Glu	Pro	Glu	Leu	Glu	Glu	Gly	Lys	Asn	Ile	Trp	
	450					455					460					
Leu	Arg	Ser	Glu	His	Phe	Ser	Ala	Asp	Glu	Ile	Ser	Ala	Gly	Ala	Asn	
465				470						475					480	
Leu	Lys	Arg	Leu	Tyr	Ala	Gln	Arg	Glu	Glu	Phe	Arg	Lys	Gly	Asn	Trp	
			485						490					495		
Lys	Ala	Leu	Ala	Val	Asn	His	Glu	Lys	Ser	Val	Phe	Tyr	Gln	Leu	Asp	
			500					505					510			
Leu	Ala	Asp	Ala	Ala	Glu	Asp	Phe	Val	Arg	Leu	Gly	Leu	Asp	Met	Pro	
		515					520					525				
Glu	Leu	Leu	Pro	Glu	Asp	Ala	Leu	Gln	Met	Ser	Arg	Ile	His	Asn	Arg	
	530					535					540					
Met	Leu	Arg	Ala	Arg	Ile	Leu	Lys	Leu	Asp	Gly	Lys	Asp	Tyr	Arg	Pro	
545					550					555					560	
Glu	Glu	Gln	Ala	Ala	Phe	Asp	Leu	Leu	Arg	Asp	Gly	Leu	Leu	Asp	Gly	
			565						570					575		
Ile	Ser	Asn	Arg	Lys	Ser	Thr	Pro	Lys	Leu	Asp	Val	Tyr	Ser	Asp	Gln	
		580						585					590			
Ile	Val	Trp	Gly	Arg	Ser	Pro	Val	Arg	Ile	Asp	Met	Ala	Gly	Gly	Trp	
		595					600					605				
Thr	Asp	Thr	Pro	Pro	Tyr	Ser	Leu	Tyr	Ser	Gly	Gly	Asn	Val	Val	Asn	
	610					615					620					
Leu	Ala	Ile	Glu	Leu	Asn	Gly	Gln	Pro	Pro	Leu	Gln	Val	Tyr	Val	Lys	

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625          630          635          640
Pro Cys Lys Asp Phe His Ile Val Leu Arg Ser Ile Asp Met Gly Ala
          645          650          655
Met Glu Ile Val Ser Thr Phe Asp Glu Leu Gln Asp Tyr Lys Lys Ile
          660          665          670
Gly Ser Pro Phe Ser Ile Pro Lys Ala Ala Leu Ser Leu Ala Gly Phe
          675          680          685
Ala Pro Ala Phe Ser Ala Val Ser Tyr Ala Ser Leu Glu Glu Gln Leu
          690          695          700
Lys Asp Phe Gly Ala Gly Ile Glu Val Thr Leu Leu Ala Ala Ile Pro
705          710          715          720
Ala Gly Ser Gly Leu Gly Thr Ser Ser Ile Leu Ala Ser Thr Val Leu
          725          730          735
Gly Ala Ile Asn Asp Phe Cys Gly Leu Ala Trp Asp Lys Asn Glu Ile
          740          745          750
Cys Gln Arg Thr Leu Val Leu Glu Gln Leu Leu Thr Thr Gly Gly Gly
          755          760          765
Trp Gln Asp Gln Tyr Gly Gly Val Leu Gln Gly Val Lys Leu Leu Gln
          770          775          780
Thr Glu Ala Gly Phe Ala Gln Ser Pro Leu Val Arg Trp Leu Pro Asp
785          790          795          800
His Leu Phe Thr His Pro Glu Tyr Lys Asp Cys His Leu Leu Tyr Tyr
          805          810          815
Thr Gly Ile Thr Arg Thr Ala Lys Gly Ile Leu Ala Glu Ile Val Ser
          820          825          830
Ser Met Phe Leu Asn Ser Ser Leu His Leu Asn Leu Leu Ser Glu Met
          835          840          845
Lys Ala His Ala Leu Asp Met Asn Glu Ala Ile Gln Arg Gly Ser Phe
          850          855          860
Val Glu Phe Gly Arg Leu Val Gly Lys Thr Trp Glu Gln Asn Lys Ala
865          870          875          880
Leu Asp Ser Gly Thr Asn Pro Pro Ala Val Glu Ala Ile Ile Asp Leu
          885          890          895
Ile Lys Asp Tyr Thr Leu Gly Tyr Lys Leu Pro Gly Ala Gly Gly Gly
          900          905          910
Gly Tyr Leu Tyr Met Val Ala Lys Asp Pro Gln Ala Ala Val Arg Ile
          915          920          925
Arg Lys Ile Leu Thr Glu Asn Ala Pro Asn Pro Arg Ala Arg Phe Val
930          935          940
Glu Met Thr Leu Ser Asp Lys Gly Phe Gln Val Ser Arg Ser
945          950          955

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<210> 9290

<211> 409

<212> PRT

<213> B.fragilis

<400> 9290

```

Leu Tyr Gly Tyr Trp Leu Ser Leu Phe Leu Ser Ser Thr Ser Leu Thr
1          5          10          15
Trp Asp Gly Leu Ile Leu Ser Phe Gly Ser Asp Asp Val Lys Cys Gln
          20          25          30
Leu Val Asp Asp His Arg Asn Ala Ser Arg Ser Val Ser Gly Arg His
          35          40          45
Phe Phe Ser His Lys Asn Thr Val Leu Cys Asn Glu Pro Gln Ile Phe
          50          55          60
Cys Tyr Phe Cys Leu Leu Ile Glu Lys Asn Thr Tyr His Met Gly
65          70          75          80
Glu His Ile Cys Phe Arg Arg Asn Glu Arg Leu Ala Thr Val Asn Pro

```

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<210> 9291
<211> 142
<212> PRT
<213> B.fragilis
```

Val	Leu	Ile	Gln	Lys	Glu	Asp	Ile	Met	Ile	Lys	Gln	Asp	Tyr	Leu	Ile
1				5					10					15	
Arg	Met	Ile	Gln	Glu	Ile	Ile	Ser	Leu	Ile	Val	Asn	Ala	Ile	Leu	Asn
			20					25					30		
Lys	Lys	Lys	Phe	Arg	Lys	Asp	Glu	Trp	Thr	Glu	Tyr	Asp	Cys	Leu	Thr
		35				40						45			
Arg	Gln	Ile	Leu	Gly	Val	Ser	Gln	Glu	Glu	Leu	Leu	Ser	Met	Ser	Leu
	50					55					60				
Asp	Glu	Met	Ile	Asp	Cys	Tyr	Glu	Gly	Asp	Pro	Asn	Arg	Met	Gly	Lys
65				70						75				80	
Ile	Glu	Leu	Ala	Ala	Val	Thr	Leu	Leu	Lys	Val	Ser	Asp	Glu	Ala	Glu

			85					90				95			
Ser	Asp	Ile	Leu	Gln	Lys	Ser	Lys	Leu	Arg	Gln	Asp	Gly	Leu	Ser	Leu
			100					105					110		
Leu	Lys	Tyr	Val	Gln	Lys	Glu	Ser	Ser	Thr	Phe	Ser	Ile	Gln	Arg	Thr
			115				120					125			
Asn	Leu	Ile	Arg	Met	Ile	Glu	Ile	Asn	Glu	Ser	Leu	Lys	Met		
	130						135					140			

<210> 9292
 <211> 172
 <212> PRT
 <213> B.fragilis

<400> 9292															
Met	Ser	Gln	Gln	Gln	Glu	Tyr	Trp	Phe	Ala	Ala	Arg	Thr	Arg	Lys	Asp
1				5				10						15	
Gln	Glu	Leu	Thr	Thr	Arg	Asp	Ala	Leu	Glu	Lys	Ile	Gly	Val	Glu	Tyr
			20				25						30		
Phe	Leu	Pro	Thr	Gln	Phe	Val	Ile	Arg	Gln	Leu	Lys	Tyr	Arg	Arg	Arg
	35					40						45			
Arg	Val	Glu	Val	Pro	Ala	Ile	Arg	Asn	Leu	Ile	Phe	Val	His	Ala	Thr
	50					55					60				
Lys	Glu	Phe	Ala	Cys	Ala	Ile	Ala	Asn	Glu	Tyr	Gly	Val	Arg	Leu	Phe
65				70					75					80	
Tyr	Met	Arg	Asp	Phe	Asp	Thr	Lys	Ser	Met	Leu	Ile	Val	Pro	Asp	Lys
				85				90					95		
Gln	Met	Lys	Asp	Phe	Met	Phe	Val	Met	Asn	Leu	Asp	Pro	Ala	Ala	Val
			100					105					110		
Ile	Leu	Asn	Asp	Asp	Cys	Phe	Ala	Val	Gly	Thr	Lys	Val	Gln	Val	Ile
		115				120						125			
Lys	Gly	Asp	Phe	Cys	Gly	Val	Glu	Gly	Glu	Leu	Ala	Ser	Leu	Ser	Asn
	130					135					140				
Arg	Thr	Tyr	Val	Thr	Ile	Arg	Ile	Arg	Gly	Val	Leu	Ser	Ala	Ser	Val
145					150				155						160
Lys	Val	Pro	Lys	Ser	Tyr	Leu	Arg	Ile	Leu	Ala	Pro				
				165					170						

<210> 9293
 <211> 367
 <212> PRT
 <213> B.fragilis

<400> 9293															
Tyr	Met	Lys	Gln	Phe	Ile	Ala	Phe	Val	Lys	Lys	Glu	Phe	Phe	His	Ile
1				5				10						15	
Phe	Arg	Asp	Arg	Arg	Thr	Met	Leu	Ile	Leu	Leu	Gly	Met	Pro	Val	Val
			20					25					30		
Gln	Ile	Ile	Leu	Phe	Gly	Phe	Ala	Ile	Thr	Thr	Glu	Val	Lys	Asn	Val
		35				40						45			
Arg	Val	Gly	Val	Leu	Asp	Pro	Ser	Asn	Asp	Ile	Val	Thr	Arg	Lys	Ile
	50					55					60				
Ile	Asp	Arg	Leu	Asp	Ala	Ser	Glu	Tyr	Phe	Ser	Val	Lys	Cys	Leu	Leu
65				70					75					80	
His	Ser	Pro	Gln	Glu	Met	Glu	Arg	Ala	Phe	Gln	Glu	Asn	Glu	Ile	Asp
				85				90					95		
Met	Ala	Leu	Val	Phe	Ser	Glu	Gln	Phe	Ala	Asp	Arg	Leu	Tyr	Thr	Gly
			100					105					110		
Asp	Ala	Arg	Val	Gln	Val	Val	Ser	Asp	Ala	Thr	Asp	Pro	Asn	Met	Ala
		115					120					125			

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Thr Thr Gln Ala Gly Tyr Ala Thr Gly Val Ile Ala Ala Val Arg Gln
 130      135      140
Glu Met Leu Pro Pro Gly Met Ser Val Pro Ser Val Val Pro Asn Val
145      150      155      160
Lys Leu Leu Tyr Asn Pro Gln Met Lys Ser Ala Tyr Asn Phe Val Pro
      165      170      175
Gly Val Met Gly Leu Ile Leu Met Leu Ile Cys Ala Met Met Thr Ser
      180      185      190
Ile Ser Ile Val Arg Glu Lys Glu Thr Gly Thr Met Glu Ile Leu Leu
      195      200      205
Val Ser Pro Val Lys Pro Leu Phe Ile Ile Leu Ala Lys Ala Val Pro
      210      215      220
Tyr Phe Val Leu Ser Phe Val Asn Leu Thr Thr Ile Leu Leu Leu Ser
225      230      235      240
Val Tyr Val Leu Asp Val Pro Val Ala Gly Ser Leu Phe Trp Leu Ile
      245      250      255
Met Val Ser Leu Leu Leu Ile Phe Val Ser Leu Ser Leu Gly Leu Leu
      260      265      270
Ile Ser Thr Val Thr Arg Thr Gln Val Ala Ala Met Leu Ala Ser Gly
      275      280      285
Leu Val Leu Met Met Pro Thr Met Leu Leu Ser Gly Met Ile Phe Ser
      290      295      300
Ile Glu Ser Met Pro Leu Val Leu Gln Leu Ile Ser Asp Ile Leu Pro
305      310      315      320
Ala Arg Trp Tyr Ile Gln Ala Ala Arg Lys Leu Met Ile Glu Gly Val
      325      330      335
Asp Ile Ser Leu Val Trp Thr Glu Val Ser Ile Leu Ala Leu Met Ala
      340      345      350
Val Leu Leu Ile Thr Ile Ser Phe Lys Lys Phe Lys Asn Arg Leu
      355      360      365

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<210> 9294

<211> 179

<212> PRT

<213> B.fragilis

<400> 9294

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Leu Gly Arg His Arg Ser Gln Trp Leu Glu Thr Ala Ser Leu Leu Pro
 1      5      10      15
Lys Met Trp Ser Leu Gln Asp Gln Tyr Asp Gln Phe Ala Gly Asn Arg
      20      25      30
Gly Ser Ser Ser Arg Ile Ser Arg Leu Ala Thr Ser Arg Gly Thr Ile
      35      40      45
Gly Glu Ser Val Thr Ser Phe Arg Leu Ser Val Val Leu Tyr Leu Gln
      50      55      60
Asn Met Pro Lys Pro Gly Lys Leu Ala Ala Val Gly Asn Pro Leu Leu
65      70      75      80
Lys Val Ala Asp Ile Asp Gln Met Tyr Leu Arg Ala Tyr Ile Thr Ser
      85      90      95
Glu Gln Leu Ser Leu Val Lys Leu Gly Asn Arg Val Thr Val Phe Ser
      100      105      110
Asp Met Arg Gly Glu Glu Arg Lys Glu Tyr Pro Gly Val Val Thr Trp
      115      120      125
Ile Ser Asp Arg Ser Glu Phe Thr Pro Lys Thr Ile Leu Thr Lys Glu
      130      135      140
Glu Arg Ala Asn Leu Val Tyr Ala Val Lys Ile Ala Val Lys Asn Glu
145      150      155      160
Trp Thr Ser Glu Asp Arg Tyr Val Arg Arg Ser Glu Val Ile Asn Asp
      165      170      175

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Ala Cys Leu

<210> 9295

<211> 117

<212> PRT

<213> B.fragilis

<400> 9295

```

His Ile Leu Asn Thr Cys Asn Leu Phe Thr Leu Glu Ile Val Lys Asn
1           5           10           15
Met Thr Phe Ile His Phe Met Gln Tyr Asn Ser Tyr Phe Cys Asn Lys
           20           25           30
Ala Ile Leu Ile Met Thr Glu Lys Glu Lys Lys Glu Arg Thr Val Ile
           35           40           45
His Leu Tyr Ile Lys Glu Asn Asp Thr His His Tyr Phe Gly Ser Ile
           50           55           60
Ala Asn Val Phe Glu Tyr Phe Ser Pro Glu Glu Leu Gly Ile Thr Tyr
65           70           75           80
Gly Ser Leu Arg Asn Tyr Gly Leu Ser Asn Glu Asn Ser Tyr Gln Asn
           85           90           95
Ser Lys Cys Ile Arg Lys Gly Ile Leu Leu Ser Lys Ser Gly Asn
           100          105          110
Arg Gly Lys Lys Asn Arg
           115

```

<210> 9296

<211> 93

<212> PRT

<213> B.fragilis

<400> 9296

```

Phe Val Ser Lys Ser Phe Asp Leu Asn Leu Lys Asn Arg Lys Ile Thr
1           5           10           15
Lys Lys Trp Gly Arg Thr Asp Ala Phe Tyr Lys Thr Asn Leu Leu Lys
           20           25           30
Asn Ala Ile Pro Gly Thr Glu Met Phe Glu Arg Gln Thr Val Thr Cys
           35           40           45
Leu Pro Ala Tyr Lys His Ala Phe Ile Gln Leu Ala Leu Ser Ser Arg
           50           55           60
Gly Lys Ala Val Leu Ser Ser Ile Cys Ile Val Leu Arg Asp Asn Ala
65           70           75           80
Arg Ser Asn Lys Thr Ala Glu Leu Leu Tyr Arg Phe Ile
           85           90

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<210> 9297

<211> 116

<212> PRT

<213> B.fragilis

<400> 9297

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Ser Ile Tyr Asn Asn Asp Met Gln Ala Ile Ile Leu Ser Ser Asn Thr
1           5           10           15
Ala Ile Arg Ala Glu Val Ile Thr Ile Arg Thr Asn Ala Arg Lys Ile
           20           25           30
Asp Gly Ile Ser Lys Ala Val Leu Ile Glu Gln Leu Lys Glu Lys Leu
           35           40           45
Lys Ser Gly Lys Ile Val Lys Phe Thr Tyr Leu Lys Ser Asn Gly Glu
           50           55           60

```


Val Arg Val Ala Phe Gly Thr Thr His Pro Asp Phe Val Lys Asp Lys
 65 70 75 80
 Val Cys Gly Trp Gly Ala Ser Arg Glu Ser Tyr Ala Thr Thr Ala Tyr
 85 90 95
 Phe Asp Leu Glu Lys Cys Asp Trp Arg Ser Phe Arg Trp Glu Asn Leu
 100 105 110
 Ile Ala Val Phe
 115

<210> 9298
 <211> 424
 <212> PRT
 <213> B.fragilis

<400> 9298
 Leu Asn Asp Lys Asn Met Lys Arg Gln Ile Val Ser Cys Gly Ile Phe
 1 5 10 15
 Ala Met Leu Leu Leu Ala Ser Cys Asn Gly Ala Gln Gln Thr Ser Glu
 20 25 30
 Val Asp Leu Ile Asp Ile Ala Gly Met Glu Lys Leu Thr Glu Leu
 35 40 45
 Lys Val Ser Asp Leu Gly Lys Thr Ile Arg Tyr Ile Pro Leu Glu Thr
 50 55 60
 Thr Asp Ser Cys Leu Ile Gly Asp Phe Pro Asn Ile Lys Leu Leu Asp
 65 70 75 80
 Asp Lys Ile Met Val Tyr Asn Gly Lys Gln Cys Leu Leu Phe Asp Lys
 85 90 95
 Glu Thr Gly Lys Phe Ile Cys Ser Val Gly His Arg Gly Asp Asp Pro
 100 105 110
 Glu Ala Tyr Ser Ser Thr Cys Gly Tyr Leu Asn Ser Lys Asn Gln Leu
 115 120 125
 Leu Tyr Phe Asn Arg Asp Pro Asn Gln Leu Val Lys Tyr Asp Gln Lys
 130 135 140
 Gly Asn Phe Ala Gly Val Ile Thr Ile Pro Ser Pro Glu Thr Ser Thr
 145 150 155 160
 Gly Asn Ile Gln Ile Asn Arg Pro Gly Met Asn Gly Phe Val Phe Ser
 165 170 175
 Asp Ser Ile Ile Ile Gly His Tyr Val Gly Gly Leu Gly Gln Arg Cys
 180 185 190
 Pro Ser Ser Val Leu Tyr Phe Ser Asp Lys Gly Asn Tyr Ile Asp Thr
 195 200 205
 Ile Pro Asn Ile Ile Pro Glu Leu Gly Thr Gly Gln Val Gly Asp Ile
 210 215 220
 Asn Asn Ile Ser Val Arg Lys Gly Phe Gly Leu Leu Glu Gly Ile Ile
 225 230 235 240
 Gln Ile Gln Tyr Asn Asn Gly Lys Gln Ser Ile Cys Val Pro Gly Tyr
 245 250 255
 Thr Ala Leu Trp Lys Cys Asn Asp Glu Ile Arg Phe Lys Glu Leu Phe
 260 265 270
 Thr Asp Thr Ile Tyr Thr Leu Lys His Asn Gln Leu Glu Lys Tyr Ile
 275 280 285
 Ile Phe Asn Thr Gly Lys Tyr Tyr Trp Pro Ala Ser Glu Arg Thr Leu
 290 295 300
 Thr Asp Asn Asn Ser Asp Arg Ile Met Ile Ser Tyr Ala Ile Glu Asn
 305 310 315 320
 Asp Lys Leu Leu Tyr Phe Gln Phe Ile Arg Gly Leu Tyr Thr Asp Lys
 325 330 335
 His Ile Leu Tyr Asn Gly Ile Tyr Asp Lys Asn Thr Lys Val Thr Asn
 340 345 350

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<210> 9299
<211> 485
<212> PRT
<213> B.fragilis
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<400>	9299															
Ile	Cys	Pro	Lys	Phe	Val	Ile	Lys	Met	Lys	Thr	Ser	His	Ile	Ser	Thr	
1				5					10					15		
Leu	Ala	Phe	Ala	Ile	Leu	Phe	Ser	Ser	Ser	Val	Met	Ala	Gln	Lys	Thr	
			20					25					30			
Asn	Lys	Pro	Val	Ser	Glu	Thr	Val	Gln	Ser	Glu	Val	Lys	Ala	Asp	Thr	
		35					40					45				
Leu	Ser	Glu	Thr	Leu	Gln	Gln	Tyr	Leu	Val	Leu	Lys	Leu	Asn	Leu	Asp	
	50					55					60					
Gly	Pro	Lys	Pro	Lys	Ile	Asp	Thr	Val	Ser	Ile	Leu	Tyr	Asn	Lys	Tyr	
65					70						75				80	
Ile	Gly	Glu	Leu	Glu	Tyr	Leu	Asn	Asp	Pro	Ser	Val	Pro	Met	Arg	Tyr	
				85					90					95		
Ile	Lys	Thr	Asp	Pro	Asp	Tyr	Tyr	Arg	Leu	Phe	Val	Pro	Leu	Thr	Tyr	
			100					105						110		
Tyr	Asn	Ser	Pro	Ile	Ala	Glu	Tyr	Ser	Thr	Met	His	Trp	Lys	Phe	Lys	
		115					120					125				
Glu	Pro	Phe	Val	Thr	Pro	Ser	Leu	Ser	Ser	Gln	Leu	Leu	Pro	Pro	Tyr	
	130						135					140				
Asp	Thr	Leu	Gln	Phe	Ser	Lys	Ala	Glu	Arg	Ala	Ser	Arg	Leu	Val	Asn	
145					150					155					160	
Val	Ala	Leu	Met	Asp	Leu	Tyr	Leu	Asn	His	Pro	Asn	Leu	Val	Val	Asn	
				165					170					175		
Thr	Glu	Asp	His	Ile	Met	Ser	Arg	Lys	Leu	Tyr	His	Gly	Asp	Lys	Lys	
			180					185					190			
Ile	Glu	Val	Pro	Lys	Thr	Glu	Val	Lys	Ser	Leu	Phe	Arg	Ala	Asp	Lys	
		195					200					205				
Val	Glu	Asp	Asn	Val	Gly	Glu	Ala	Glu	Met	Val	Ile	Ser	Lys	Pro	Asn	
	210					215					220					
Trp	Trp	Val	Thr	Gly	Gly	Asn	Gly	Ser	Leu	Gln	Ile	Thr	Gln	Asn	Tyr	
225					230					235					240	
Ile	Ser	Asp	Asn	Trp	Tyr	Lys	Gly	Gly	Glu	Ser	Asn	Asn	Ala	Val	Met	
			245						250					255		
Ala	Asn	Leu	Gln	Leu	Phe	Ala	Asn	Tyr	Asn	Asp	Arg	Glu	Lys	Val	Gln	
			260					265					270			
Phe	Glu	Asn	Leu	Phe	Glu	Ala	Lys	Leu	Gly	Phe	Asn	Ser	Ser	Pro	Ser	
		275					280					285				
Asp	Glu	Tyr	His	Lys	Tyr	Leu	Val	Asn	Thr	Asp	Gln	Leu	Arg	Leu	Tyr	
	290					295					300					
Ser	Lys	Leu	Gly	Ile	Gln	Ala	Ala	Asn	Asn	Trp	Tyr	Tyr	Thr	Ile	Thr	
305					310					315					320	
Gly	Glu	Phe	Lys	Thr	Gln	Phe	Val	Lys	Gly	Tyr	Lys	Ala	Asn	Ser	Glu	
				325					330					335		

Glu Leu Val Ala Ala Phe Leu Ala Pro Ala Asp Val Ile Val Ser Val
 340 345 350
 Gly Met Asp Tyr Lys Leu Lys Lys Lys Phe Asn Leu Ser Val Phe
 355 360 365
 Met Ser Pro Leu Thr Tyr Asn Leu Arg Tyr Ile Gly Asn Lys Asn Val
 370 375 380
 Asp Glu Thr Lys Phe Gly Leu Asp Lys Gly Lys Cys Ser Lys Asn Asp
 385 390 395 400
 Phe Gly Ala Gln Val Gln Pro Thr Ile Ser Trp Thr Ile Ile Pro Ser
 405 410 415
 Ile Val Val Asp Ser Arg Leu Asn Tyr Leu Thr Asn Tyr Lys Trp Val
 420 425 430
 Arg Val Glu Trp Glu Asn Thr Phe Asn Phe Val Leu Asn Arg Tyr Leu
 435 440 445
 Ser Thr Lys Leu Phe Val His Ala Arg Phe Asp Asp Ser Ala Lys Pro
 450 455 460
 Thr Thr Gly Ser Ser Tyr Phe Gln Leu Lys Glu Leu Leu Ser Phe Gly
 465 470 475 480
 Leu Asn Tyr Lys Trp
 485

<210> 9300

<211> 447

<212> PRT

<213> B.fragilis

<400> 9300

Thr Asp Tyr Asn Met Thr Thr Lys Tyr Thr Tyr Lys Glu Ile Trp Ile
 1 5 10 15
 Ile Ala Tyr Pro Ile Leu Ile Ser Leu Ile Met Glu Gln Leu Ile Gly
 20 25 30
 Met Thr Asp Thr Ala Phe Leu Gly Arg Val Gly Glu Val Glu Leu Gly
 35 40 45
 Ala Ser Ala Ile Ala Gly Val Tyr Tyr Leu Ala Ile Phe Met Met Ala
 50 55 60
 Phe Gly Phe Ser Ile Gly Ala Gln Ile Leu Ile Ala Arg Arg Asn Gly
 65 70 75 80
 Glu Gln Gln Tyr Gln Ala Ile Gly Pro Ile Phe Tyr Gln Gly Val Tyr
 85 90 95
 Phe Leu Leu Ser Leu Ala Val Val Ala Phe Thr Leu Ser Leu Cys Phe
 100 105 110
 Ser Pro His Ile Leu Lys Lys Val Ile Ser Ser Glu His Ile Tyr Asp
 115 120 125
 Ala Ser Ile Ser Tyr Ile Asn Trp Arg Val Phe Gly Phe Phe Phe Ser
 130 135 140
 Phe Val Gly Val Met Phe Arg Ala Phe Phe Val Gly Thr Thr Gln Thr
 145 150 155 160
 Lys Thr Leu Thr Leu Asn Ser Val Val Met Val Leu Ser Asn Val Val
 165 170 175
 Phe Asn Tyr Ile Leu Ile Phe Gly Lys Phe Gly Ala Pro Gln Leu Gly
 180 185 190
 Ile Ala Gly Ala Ala Ile Gly Ser Ser Leu Ala Glu Met Val Ser Val
 195 200 205
 Ile Phe Phe Val Ile Tyr Thr Trp Lys Arg Ile Asp Cys Lys Lys Tyr
 210 215 220
 Ala Leu Asn His Leu Pro Gly Phe Arg Pro Glu Met Leu Lys Arg Ile
 225 230 235 240
 Leu Asn Val Ser Phe Trp Thr Met Ile Gln Asn Phe Phe Ser Leu Ser
 245 250 255

Thr Trp Phe Met Phe Phe Leu Phe Val Glu His Leu Gly Glu Arg Ala
 260 265 270
 Leu Ala Ile Thr Asn Ile Ile Arg Asn Val Ser Gly Ile Pro Phe Met
 275 280 285
 Val Thr Met Ala Phe Ala Ala Thr Cys Gly Ser Leu Val Ser Asn Leu
 290 295 300
 Ile Gly Ala Gly Glu Ile Lys Cys Val Pro Gly Thr Ile Arg Gln His
 305 310 315 320
 Ile Arg Ile Gly Tyr Ile Phe Val Leu Pro Leu Val Ile Leu Phe Ala
 325 330 335
 Leu Phe Pro Asn Leu Ile Leu Ser Ile Tyr Thr Asp Ile Pro Asp Leu
 340 345 350
 Arg Glu Ala Ser Ile Pro Ser Leu Trp Val Leu Cys Ser Ala Tyr Leu
 355 360 365
 Ile Leu Val Pro Ala Asn Val Tyr Phe Gln Ala Val Ser Gly Thr Gly
 370 375 380
 Asn Thr Arg Thr Ala Leu Gly Leu Glu Leu Cys Val Leu Ala Ile Tyr
 385 390 395 400
 Leu Ile Tyr Ile Thr Tyr Met Ile Leu Tyr Leu Arg Val Asp Val Ala
 405 410 415
 Val Cys Trp Thr Glu His Leu Tyr Gly Ile Cys Ile Leu Phe Leu
 420 425 430
 Ser Tyr Leu Tyr Ile Lys Lys Gly Asn Trp Gln Lys Lys Gln Ile
 435 440 445

<210> 9301

<211> 150

<212> PRT

<213> B.fragilis

<400> 9301

Arg Ile Leu Asn Ile Lys Ser Phe Ile Met Val Ala Lys Gln Leu Ser
 1 5 10 15
 Ile Phe Leu Glu Asn Lys Ser Gly Arg Leu Thr Glu Val Thr Glu Val
 20 25 30
 Leu Ala Lys Glu Gly Ile Asn Leu Ser Ala Leu Cys Ile Ala Glu Asn
 35 40 45
 Ala Asp Phe Gly Ile Leu Arg Gly Ile Val Ser Asp Pro Asp Lys Ala
 50 55 60
 Tyr Lys Ala Leu Lys Asp Asn His Phe Ala Val Asn Val Thr Glu Val
 65 70 75 80
 Val Gly Ile Asn Cys Pro Asn Val Pro Gly Ala Leu Ala Lys Val Leu
 85 90 95
 Gln Tyr Leu Ser Asn Glu Gly Val Phe Ile Glu Tyr Met Tyr Ser Phe
 100 105 110
 Ala Asn Asn Asn Ser Ala Asn Val Ile Ile Arg Pro Asn Asp Met Glu
 115 120 125
 Asn Cys Ile Arg Val Leu Thr Glu Lys Lys Val Asp Leu Leu Ala Ala
 130 135 140
 Ser Asp Leu Tyr Lys Leu
 145 150

<210> 9302

<211> 363

<212> PRT

<213> B.fragilis

<400> 9302

Lys Glu Ile Lys Met Lys Lys Thr Leu Thr Val Asn Leu Gly Gly Thr

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1           5           10           15
Val Phe His Ile Asp Glu Asp Ala Tyr Arg Leu Leu Asp Asn Tyr Leu
20           25           30
Cys Asn Leu Arg Leu His Phe Arg Lys Gln Glu Gly Ala Glu Glu Ile
35           40           45
Val Asn Asp Ile Glu Asn Arg Ile Ser Glu Leu Phe Ala Glu Lys Leu
50           55           60
Ser Ala Gly Ser Gln Val Ile Thr Ile Ala Asp Val Glu Glu Val Ile
65           70           75           80
Ala Arg Met Gly Lys Pro Glu Asp Phe Gly Glu Asp Thr Glu Glu Glu
85           90           95
Glu Pro Lys Lys Thr Thr Gly Gln Thr Gly Ala Gln Gln Gly Ala Thr
100          105          110
Ile Arg Arg Arg Leu Tyr Arg Asn Pro Asp Asp Lys Ile Leu Gly Gly
115          120          125
Val Ile Ser Gly Leu Ala Ala Tyr Leu Asn Trp Asp Val Thr Val Leu
130          135          140
Arg Leu Ile Met Phe Val Val Leu Ile Cys Gly Tyr Gly Val Leu Ile
145          150          155          160
Pro Ile Tyr Ile Ile Cys Gly Val Val Ile Pro Glu Ala Arg Thr Ala
165          170          175
Ala Asp Lys Leu Asn Met Pro Gly Glu Asp Ile Thr Ile Glu Asn Ile
180          185          190
Gly Thr Thr Val Thr Asp Gly Phe Asp Arg Met Ala Asn Gly Val Asn
195          200          205
Asn Tyr Val Asn Ser Gly Lys Pro Arg Ser Phe Leu Gln Lys Val Arg
210          215          220
Asp Ala Leu Val Ser Ile Ala Gly Phe Leu Leu Lys Ala Cys Leu Val
225          230          235          240
Val Leu Ala Ile Ile Cys Ser Pro Val Leu Phe Val Leu Ala Ile Asp
245          250          255
Val Val Ala Leu Val Ile Ala Ala Ile Ala Val Ala Ile Gly Gly Gly
260          265          270
Ala Ala Leu Tyr Gln Met Leu Pro Ser Val Asp Trp Ser Pro Leu Ile
275          280          285
Ser Thr Ser Pro Met Met Thr Ile Ala Gly Ser Ile Ala Gly Val Val
290          295          300
Leu Ala Gly Ile Pro Leu Thr Ala Ile Ile Phe Val Ile Leu Arg Gln
305          310          315          320
Ile Phe Asn Trp Ser Pro Met Ser Ser Gly Leu Lys Trp Ser Leu Leu
325          330          335
Ile Ile Trp Ile Leu Ala Val Val Ile Phe Val Ile Asn Leu Ser Tyr
340          345          350
Leu Gly Trp Pro Tyr Pro Phe Leu Trp Val Gly
355          360

```

<210> 9303

<211> 259

<212> PRT

<213> B.fragilis

<400> 9303

```

Tyr Met Gln Lys Leu Leu Phe Leu Phe Leu Leu Pro Leu Ile Pro Phe
1           5           10           15
Ser Phe Pro Cys His Ala Gln Thr Thr Tyr Arg Met Val Thr Arg Asn
20           25           30
Tyr Ser Pro Val Thr Asp Ser Tyr Pro Gln Glu Val Ser Asn Phe Lys
35           40           45
Lys Ala Asp Ser Val Tyr Tyr Phe Thr Val Lys Val Ser Lys Ala Tyr

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```

      50              55              60
Asp Asp Thr Leu Lys Arg Lys Val Ala Glu Lys Val Leu Tyr Ser Pro
65              70              75              80
Asn Asp Ile Tyr Asp Gly Glu Val Ala Ser Tyr Leu Asn Pro Thr Arg
      85              90              95
Leu Ile Asp Tyr Ser Ser Pro Thr Ile Glu Leu Ile Thr Asp Ser Leu
      100              105              110
Phe Lys Gly Glu Asp Ser Ile Met Thr Ile Ile Arg Lys Gly Leu Glu
      115              120              125
Phe Val Ser His Tyr Ile Ser Phe Asp Asp Ser Leu Ala Met Ala Ile
      130              135              140
Ser Arg Gly Asp Cys Lys Thr Leu Asp Val Asn His Ile Leu Gln Arg
145              150              155              160
Lys Lys Gly Thr Cys Ser Glu Tyr Thr Asn Leu Phe Thr Ala Leu Met
      165              170              175
Arg Lys Lys Gly Ile Pro Cys Arg Phe Val Ala Gly Phe Ile Phe Ile
      180              185              190
Pro Glu Gln Lys Phe Tyr Gly Cys His Ala Trp Ala Glu Cys Tyr Leu
      195              200              205
Lys Gln Tyr Gly Trp Met Ala Val Asp Pro Gln Ser Gly Lys Ser Trp
      210              215              220
Leu Pro Thr Thr Ile Ile Arg Leu Phe Ala Gly Thr Asp Tyr Thr Asp
225              230              235              240
Cys Gly Leu Asn Ser Phe Met Asp Leu Val Pro Lys Ser Ile Glu Ile
      245              250              255
Val Lys Glu

```

<210> 9304

<211> 237

<212> PRT

<213> B.fragilis

<400> 9304

```

Leu Arg Met Lys Arg Asp Gln Leu Lys Ser Leu Leu Leu Gly Ala Ile
1              5              10              15
Leu Leu Ala Gly Ile Thr Leu Pro Ala Lys Ala Gln Ile Gly Glu Gln
      20              25              30
Arg His Asn Phe Ala Ile Gly Ile Asn Gly Gly Ala Asn Tyr Ser Thr
      35              40              45
Val Ser Phe Gln Pro Thr Ile Lys Gln Asn Gly Leu Leu Gly Ile Thr
      50              55              60
Gly Gly Val Thr Ala Arg Tyr Ile Ser Glu Lys Tyr Phe Ala Met Ile
65              70              75              80
Cys Gly Ala Gln Leu Glu Leu Asn Phe Ser Gln Arg Gly Trp Asp Glu
      85              90              95
Lys Phe Asp Pro Glu Gln Gly Phe Ser Ser Glu Asp Ser Tyr Val Arg
      100              105              110
Thr Met Asn Tyr Leu Glu Ile Pro Phe Leu Ala His Leu Ala Phe Gly
      115              120              125
Lys Asp Lys Gly Val Gln Phe Phe Val Asn Leu Gly Pro Gln Ile Gly
      130              135              140
Leu Leu Leu Asn Glu Ser Glu Lys Arg Lys Gly Thr Trp Glu Thr Ala
145              150              155              160
Asn Arg Ala Pro Asn Glu Gln Tyr Gly Lys Trp Val Glu Asn Lys Phe
      165              170              175
Asp Tyr Gly Ile Val Gly Gly Gly Gly Ile Glu Val Arg Thr Lys Ala
      180              185              190
Gly Asn Phe Leu Leu Glu Gly Arg Tyr Tyr Phe Gly Leu Ala Asp Phe

```

```

      195                200                205
Tyr Asn Ser Thr Lys Lys Asp Tyr Phe Ser Arg Ser Ala Asn Ser Thr
  210                215                220
Ile Thr Ala Lys Ile Thr Tyr Leu Phe Asp Ile Lys Lys
  225                230                235

```

<210> 9305
 <211> 200
 <212> PRT
 <213> B.fragilis

```

<400> 9305
Leu Lys Glu Asn Ile Met Ser Leu Lys Asn Ser Tyr Val Thr Ser Asp
  1                5                10                15
Tyr Ile Glu Trp Asp Thr Met Leu Ser Leu Val Arg Lys Leu Tyr Arg
      20                25                30
Asp Lys Glu Tyr Arg Met Ser Leu Leu Ile Gly Cys Gly Ser Phe Phe
      35                40                45
Gly Leu Arg Ile Ser Asp Ile Leu Thr Leu Thr Trp Ser Met Leu Leu
      50                55                60
Asp Asp Glu Lys Phe Val Ile Ile Glu Lys Lys Thr Gly Lys Arg Arg
      65                70                75                80
Glu Ile Lys Ile Asn Ser Asn Phe Gln Lys His Ile Ala Asp Cys Tyr
      85                90                95
Met Ala Leu Gly Val Thr Asp Lys Asn Glu Lys Cys Phe Leu Ser Arg
      100                105                110
Lys Lys Thr Val Tyr Ser Thr Gln Arg Ile Asn Val Leu Phe Lys Ser
      115                120                125
Ile Lys Ser Lys Tyr Gly Leu Lys Val Glu His Phe Ser Thr His Ser
      130                135                140
Met Arg Lys Thr Phe Gly Arg Lys Val Val Glu Ala Ala Gly Glu Asn
      145                150                155                160
Ser Glu Phe Ala Leu Ile Lys Leu Ser Glu Leu Phe Asn His Ala Asp
      165                170                175
Val Met Thr Thr Arg Arg Tyr Leu Gly Leu Arg Thr Gln Glu Leu Leu
      180                185                190
Glu Thr Tyr Asp Met Leu Ser Phe
      195                200

```

<210> 9306
 <211> 546
 <212> PRT
 <213> B.fragilis

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<400> 9306
Trp Lys Ile Asp Asn Arg Glu Leu Ser Leu Pro Thr Phe Cys Gly Cys
  1                5                10                15
Ala Gln Pro Ser Thr Ile His Phe Leu Tyr Phe Asn Lys Ile Gln Met
      20                25                30
Ala Glu Gln Arg Arg Asn Thr Arg Ser Thr Ala Lys Ser Lys Val Gln
      35                40                45
Pro Val Asn Asp Tyr Gly Arg Ile Gln Pro Gln Ala Pro Glu Leu Glu
      50                55                60
Glu Ala Val Leu Gly Ala Leu Met Ile Glu Lys Asp Ala Tyr Ser Leu
      65                70                75                80
Val Ser Glu Ile Leu Arg Pro Glu Ser Phe Tyr Glu His Arg His Gln
      85                90                95
Leu Ile Tyr Ala Ala Ile Thr Asp Leu Ala Val Asn Gln Lys Pro Val
      100                105                110

```

Asp Ile Leu Thr Val Lys Glu Gln Leu Ser Lys Arg Gly Glu Leu Glu
 115 120 125
 Glu Val Gly Gly Pro Phe Tyr Ile Thr Gln Leu Ser Ser Lys Val Ala
 130 135 140
 Ser Ser Ala His Ile Glu Tyr His Ala Arg Ile Ile Ala Gln Lys Tyr
 145 150 155 160
 Leu Ala Arg Glu Leu Ile Thr Phe Thr Ser Asn Ile Gln Ser Lys Ala
 165 170 175
 Phe Asp Glu Thr Leu Asp Val Asp Asp Leu Met Gln Glu Ala Glu Gly
 180 185 190
 Lys Leu Phe Glu Ile Ser Gln Arg Asn Met Lys Lys Asp Tyr Thr Gln
 195 200 205
 Ile Asn Pro Ile Ile Ala Glu Ala Tyr Glu Gln Ile Gln Lys Ala Ala
 210 215 220
 Ala Arg Thr Asp Gly Leu Ser Gly Leu Glu Ser Gly Tyr Thr Lys Leu
 225 230 235 240
 Asp Lys Met Thr Ser Gly Trp Gln Lys Ser Asp Leu Ile Ile Ile Ala
 245 250 255
 Ala Arg Pro Ala Met Gly Lys Thr Ala Phe Val Leu Ser Met Ala Lys
 260 265 270
 Asn Ile Ala Val Asn Phe Arg Asn Pro Val Ala Leu Phe Ser Leu Glu
 275 280 285
 Met Ser Asn Val Gln Leu Val Asn Arg Leu Ile Ser Asn Val Cys Glu
 290 295 300
 Ile Pro Ser Glu Lys Ile Lys Ser Gly Gln Leu Ala Ala Tyr Glu Trp
 305 310 315 320
 Gln Gln Leu Asp Tyr Lys Leu Lys Asp Leu Leu Asp Ala Pro Leu Tyr
 325 330 335
 Val Asp Asp Thr Pro Ser Leu Ser Val Phe Glu Leu Arg Thr Lys Ala
 340 345 350
 Arg Arg Leu Val Arg Glu His Gly Val Arg Ile Ile Ile Ile Asp Tyr
 355 360 365
 Leu Gln Leu Met Asn Ala Ser Gly Met Ala Phe Gly Ser Arg Gln Glu
 370 375 380
 Glu Val Ser Thr Ile Ser Arg Ser Leu Lys Gly Leu Ala Lys Glu Leu
 385 390 395 400
 Asn Ile Pro Ile Ile Ala Leu Ser Gln Leu Asn Arg Gly Val Glu Ser
 405 410 415
 Arg Glu Gly Leu Glu Gly Lys Arg Pro Gln Leu Ser Asp Leu Arg Glu
 420 425 430
 Ser Gly Ala Ile Glu Gln Asp Ala Asp Met Val Cys Phe Ile His Arg
 435 440 445
 Pro Glu Tyr Tyr Lys Ile Phe Gln Asp Asp Lys Gly Asn Asp Leu Arg
 450 455 460
 Gly Met Ala Glu Ile Ile Ile Ala Lys His Arg Asn Gly Ala Val Gly
 465 470 475 480
 Asp Val Leu Leu Arg Phe Lys Gly Glu Tyr Thr Arg Phe Gln Asn Pro
 485 490 495
 Asp Asp Asp Met Val Ile Pro Leu Pro Asp Ala Gly Ala Met Leu Gly
 500 505 510
 Ser Arg Met Asn Asn Thr Gly Thr Val Pro Pro Pro Pro Ala Glu Phe
 515 520 525
 Ala Pro Gln Asn Ser Asn Pro Phe Gly Gly Glu Asn Asp Gly Pro Leu
 530 535 540
 Pro Phe
 545

<210> 9307

<211> 105

<212> PRT
 <213> B.fragilis

<400> 9307

Asn	Glu	Asp	Asp	Met	Lys	Arg	Tyr	Asn	Lys	Gln	Gln	Val	Met	Lys	Asp
1				5					10					15	
Ala	His	Arg	Leu	Tyr	Lys	Asn	Asp	Phe	Gln	Arg	Arg	Gly	Arg	Ser	Trp
			20					25					30		
Gly	Glu	Cys	Leu	Lys	Ala	Ala	Trp	Ser	Trp	Glu	Lys	Asp	Ala	Val	Arg
		35					40					45			
Val	Arg	Glu	Glu	Lys	Ala	Ala	Arg	Leu	Asp	Ala	Met	Ile	Ala	Ala	Ser
		50				55					60				
Trp	Ala	Ala	His	Asn	Ala	His	Lys	Asn	Glu	Lys	Ser	Asn	Lys	Lys	Glu
65					70				75						80
Phe	Glu	Asp	Leu	Ser	Ser	Asp	Ala	Val	Ser	Tyr	Ala	Met	Gly	Tyr	Gly
			85					90						95	
Arg	Gly	Asn	Gly	Phe	Tyr	Cys	Gly	Asp							
			100					105							

<210> 9308
 <211> 244
 <212> PRT
 <213> B.fragilis

<400> 9308

Gln	Arg	Leu	Glu	Gln	Gly	Val	Ala	Pro	Phe	Phe	Met	Leu	Ser	Asn	Gln
1				5					10					15	
Leu	Ser	His	Gln	Ile	Leu	Ile	Phe	Ala	Gln	His	Pro	Glu	Tyr	Arg	Lys
			20					25					30		
Met	Lys	Lys	Ile	Val	Leu	Met	Gly	Ile	Pro	Leu	Leu	Leu	Ile	Val	Leu
		35					40					45			
Val	Ile	Thr	Ile	Tyr	Val	Cys	Asn	Arg	Thr	Ile	Gln	Lys	Asn	Ser	Glu
		50				55					60				
Thr	Tyr	Ile	Tyr	Ser	Thr	Val	Ser	Asp	Ile	Pro	Tyr	Asn	Lys	Val	Gly
65					70				75						80
Leu	Leu	Leu	Gly	Thr	Ser	Pro	Lys	Leu	Lys	Ser	Gly	Lys	Ala	Asn	Leu
			85					90						95	
Tyr	Phe	Asp	Tyr	Arg	Ile	Lys	Ala	Ala	Thr	Glu	Leu	Tyr	Asn	Ala	Gly
			100					105					110		
Lys	Val	Lys	Tyr	Ile	Leu	Val	Ser	Gly	Asp	Asn	Arg	Arg	Asn	Ser	Tyr
		115					120					125			
Asn	Glu	Pro	Glu	Glu	Met	Lys	Lys	Ala	Leu	Ile	Ala	Ala	Gly	Ile	Pro
		130				135					140				
Asp	Gln	Arg	Ile	Ile	Leu	Asp	Tyr	Ala	Gly	Leu	Arg	Thr	Leu	Asp	Ser
145					150					155					160
Val	Val	Arg	Ala	His	Leu	Ile	Phe	Gly	Leu	Glu	Arg	Phe	Thr	Leu	Ile
				165				170						175	
Ser	Gln	Gln	Phe	His	Asn	Glu	Arg	Ala	Ile	Tyr	Leu	Ala	Gln	Gln	Ser
			180					185					190		
His	Leu	Gln	Ala	Ile	Gly	Tyr	Asn	Ala	Gln	Asp	Val	Ser	Ala	Tyr	Ala
		195					200					205			
Gly	Phe	Lys	Thr	Asn	Leu	Arg	Glu	Leu	Leu	Ala	Arg	Val	Lys	Val	Phe
	210					215					220				
Val	Asp	Ile	Val	Thr	Asn	Lys	Ala	Pro	Lys	His	Leu	Gly	Glu	Lys	Val
225					230					235					240
Lys	Ile	Pro	Glu												

<210> 9309

<211> 192
 <212> PRT
 <213> B.fragilis

<400> 9309

Thr	Ile	Met	Glu	Tyr	Ile	Leu	Ile	Phe	Ile	Ser	Ala	Ile	Phe	Val	Asn
1			5					10						15	
Asn	Ile	Val	Leu	Ser	Gln	Phe	Leu	Gly	Ile	Cys	Pro	Phe	Leu	Gly	Val
			20					25					30		
Ser	Lys	Lys	Val	Asp	Thr	Ala	Leu	Gly	Met	Ser	Ala	Ala	Val	Ala	Phe
		35					40					45			
Val	Leu	Thr	Ile	Ala	Thr	Ile	Val	Thr	Phe	Leu	Ile	Gln	Lys	Phe	Val
	50					55					60				
Leu	Asp	Ala	Phe	Gly	Leu	Gln	Tyr	Leu	Gln	Thr	Ile	Thr	Phe	Ile	Leu
65				70					75						80
Val	Ile	Ala	Ala	Leu	Val	Gln	Met	Val	Glu	Ile	Ile	Leu	Lys	Lys	Val
				85					90					95	
Ser	Pro	Ala	Leu	Tyr	Gln	Ala	Leu	Gly	Val	Phe	Leu	Pro	Leu	Ile	Thr
			100					105					110		
Thr	Asn	Cys	Cys	Ile	Leu	Gly	Val	Ala	Ile	Leu	Val	Ile	Gln	Lys	Asp
	115						120						125		
Tyr	Asp	Leu	Leu	Thr	Gly	Val	Val	Tyr	Ala	Phe	Ser	Thr	Ala	Ile	Gly
	130					135						140			
Phe	Gly	Leu	Ala	Leu	Val	Leu	Phe	Ala	Gly	Leu	Arg	Glu	Gln	Met	Ser
145				150						155					160
Leu	Val	Lys	Ile	Pro	Glu	Gly	Met	Lys	Gly	Thr	Pro	Ile	Ala	Leu	Ile
				165					170					175	
Thr	Ala	Gly	Leu	Leu	Ala	Met	Ala	Phe	Met	Gly	Phe	Ser	Gly	Val	Val
			180					185						190	

<210> 9310
 <211> 943
 <212> PRT
 <213> B.fragilis

<400> 9310

Asn	Met	Gln	Glu	Thr	Glu	Tyr	Ile	Asn	Val	Tyr	Gly	Ala	Arg	Val	His
1			5					10						15	
Asn	Leu	Lys	Asp	Ile	Asp	Ala	Glu	Ile	Pro	Arg	Asn	Ser	Leu	Thr	Val
			20					25					30		
Ile	Thr	Gly	Leu	Ser	Gly	Ser	Gly	Lys	Ser	Ser	Leu	Ala	Phe	Asp	Thr
		35					40					45			
Ile	Phe	Ala	Glu	Gly	Gln	Arg	Arg	Tyr	Ile	Glu	Thr	Phe	Ser	Ala	Tyr
	50					55					60				
Ala	Arg	Asn	Phe	Leu	Gly	Asn	Leu	Glu	Arg	Pro	Asp	Val	Asp	Lys	Ile
65				70					75						80
Thr	Gly	Leu	Ser	Pro	Val	Ile	Ser	Ile	Glu	Gln	Lys	Thr	Thr	Asn	Lys
				85					90					95	
Asn	Pro	Arg	Ser	Thr	Val	Gly	Thr	Thr	Thr	Glu	Ile	Tyr	Asp	Tyr	Leu
			100					105					110		
Arg	Leu	Leu	Tyr	Ala	Arg	Ala	Gly	Ile	Ala	Tyr	Ser	Tyr	Leu	Ser	Gly
			115				120					125			
Glu	Lys	Met	Val	Lys	Tyr	Thr	Glu	Glu	Gln	Ile	Leu	Glu	Leu	Ile	Leu
	130					135					140				
Lys	Asp	Tyr	Lys	Gly	Lys	Lys	Ile	Tyr	Met	Leu	Ala	Pro	Leu	Val	Arg
145				150						155					160
Ser	Arg	Lys	Gly	His	Tyr	Lys	Glu	Leu	Phe	Glu	Gln	Ile	Arg	Lys	Lys
				165					170					175	
Gly	Tyr	Leu	Tyr	Val	Arg	Ile	Asp	Gly	Glu	Val	Arg	Glu	Ile	Thr	His

Gly	Leu	Lys	Leu	Asp	Arg	Tyr	Lys	Asn	His	Asp	Ile	Glu	Val	Val	Val		
		195					200					205					
Asp	Lys	Leu	Ile	Val	Glu	Asp	Lys	Asp	Asp	Lys	Arg	Leu	Lys	Gln	Ser		
	210					215					220						
Val	Ala	Thr	Ala	Met	Arg	Gln	Gly	Asp	Gly	Leu	Leu	Met	Ile	Leu	Asp		
225					230					235					240		
Ala	Gln	Thr	Glu	Ser	Ile	Arg	His	Tyr	Ser	Lys	Arg	Leu	Met	Cys	Pro		
				245					250					255			
Val	Thr	Gly	Leu	Ser	Tyr	Arg	Glu	Pro	Ala	Pro	His	Asn	Phe	Ser	Phe		
		260						265					270				
Asn	Ser	Pro	Gln	Gly	Ala	Cys	Pro	Arg	Cys	Lys	Gly	Leu	Gly	Val	Val		
		275					280					285					
Ser	Gln	Ile	Asp	Val	Asp	Lys	Val	Ile	Pro	Asn	Lys	Glu	Met	Ser	Ile		
	290					295					300						
Tyr	Glu	Gly	Ala	Ile	Ala	Pro	Leu	Gly	Lys	Tyr	Lys	Asn	Ala	Met	Ile		
305					310					315					320		
Phe	Trp	Gln	Ile	Gly	Ala	Leu	Leu	Glu	Lys	Tyr	Asp	Ala	Ser	Leu	Lys		
				325					330					335			
Thr	Pro	Val	Lys	Asp	Leu	Pro	Asn	Asp	Ala	Ile	Asp	Glu	Ile	Leu	Tyr		
			340					345					350				
Gly	Ser	Asp	Glu	Arg	Ile	Lys	Ile	Lys	Ser	Ser	Leu	Ile	Gly	Thr	Ser		
		355					360					365					
Ser	Asp	Tyr	Phe	Val	Thr	Tyr	Glu	Gly	Val	Val	Lys	Tyr	Ile	Gln	Met		
	370					375					380						
Leu	Gln	Glu	Lys	Asp	Ala	Ser	Ala	Thr	Ala	Gln	Lys	Trp	Ala	Glu	Gln		
385					390					395				400			
Phe	Ala	Lys	Thr	Thr	Val	Cys	Pro	Glu	Cys	Lys	Gly	Ala	Lys	Leu	Asn		
				405					410					415			
Lys	Glu	Ala	Leu	His	Phe	Arg	Ile	His	Asp	Lys	Asn	Ile	Asn	Glu	Leu		
			420					425					430				
Ser	Asn	Met	Asp	Ile	Asn	Glu	Leu	Tyr	Asp	Trp	Leu	Met	Lys	Val	Asp		
		435					440					445					
Lys	Phe	Leu	Thr	Asp	Lys	Gln	Lys	Thr	Ile	Ala	Ala	Glu	Ile	Leu	Lys		
	450					455					460						
Glu	Ile	Arg	Thr	Arg	Leu	Lys	Phe	Leu	Leu	Asp	Val	Gly	Leu	Asp	Tyr		
465					470					475				480			
Leu	Ser	Leu	Asn	Arg	Ser	Ser	Val	Ser	Leu	Ser	Gly	Gly	Glu	Ser	Gln		
				485					490					495			
Arg	Ile	Arg	Leu	Ala	Thr	Gln	Ile	Gly	Ser	Gln	Leu	Val	Asn	Val	Leu		
			500					505					510				

Pro Ile Leu Ser Gln Lys Phe Tyr Arg Ser Leu Gln Asp Pro Leu Glu
 660 665 670
 Tyr Asp Ser Ile Glu Gly Leu Glu Asn Ile Asp Lys Val Val Asn Val
 675 680 685
 Asp Gln Ser Pro Leu Gly Arg Thr Pro Arg Ser Asn Pro Ala Thr Tyr
 690 695 700
 Thr Gly Val Phe Ser Asp Ile Arg Ser Leu Phe Val Gly Leu Pro Glu
 705 710 715 720
 Ala Lys Ile Arg Gly Tyr Lys Pro Gly Arg Phe Ser Phe Asn Val Ser
 725 730 735
 Gly Gly Arg Cys Glu Ala Cys Ser Gly Asn Gly Tyr Lys Thr Ile Glu
 740 745 750
 Met Asn Phe Leu Pro Asp Val Tyr Val Pro Cys Glu Val Cys His Gly
 755 760 765
 Lys Arg Tyr Asn Arg Glu Thr Leu Glu Val Arg Phe Lys Gly Lys Ser
 770 775 780
 Ile Ala Asp Val Leu Asp Met Thr Ile Asn Arg Ala Val Glu Phe Phe
 785 790 795 800
 Glu Asn Val Pro Gln Ile Leu Asn Lys Ile Lys Thr Ile Gln Asp Val
 805 810 815
 Gly Leu Gly Tyr Ile Lys Leu Gly Gln Ser Ser Thr Thr Leu Ser Gly
 820 825 830
 Gly Glu Ser Gln Arg Val Lys Leu Ala Thr Glu Leu Ser Lys Arg Asp
 835 840 845
 Thr Gly Lys Thr Leu Tyr Ile Leu Asp Glu Pro Thr Thr Gly Leu His
 850 855 860
 Phe Glu Asp Ile Arg Val Leu Met Gly Val Leu Asn Lys Leu Val Asp
 865 870 875 880
 Lys Gly Asn Thr Val Ile Val Ile Glu His Asn Leu Asp Val Ile Lys
 885 890 895
 Met Ala Asp Tyr Ile Ile Asp Met Gly Pro Glu Gly Gly Lys Gly Gly
 900 905 910
 Gly Glu Leu Leu Ser Phe Gly Thr Pro Glu Glu Val Ala Lys Ser Asn
 915 920 925
 Lys Gly Tyr Thr Pro Lys Phe Leu Arg Glu Glu Leu Lys Ile Asn
 930 935 940

<210> 9311

<211> 202

<212> PRT

<213> B.fragilis

<400> 9311

Ile Arg Lys Glu Tyr Lys Asp Met Asn Asn Phe Lys Val Leu Met Asn
 1 5 10 15
 Gly Ile Val Lys Glu Asn Pro Thr Phe Val Leu Leu Leu Gly Met Cys
 20 25 30
 Pro Thr Leu Gly Thr Thr Ser Ser Ala Ile Asn Gly Met Gly Met Gly
 35 40 45
 Leu Ala Thr Met Phe Val Leu Ile Cys Ser Asn Val Val Ile Ser Leu
 50 55 60
 Ile Lys Asn Leu Ile Pro Asp Met Val Arg Ile Pro Ser Phe Ile Val
 65 70 75 80
 Val Ile Ala Ser Phe Val Thr Leu Leu Gln Met Val Met Gln Ala Tyr
 85 90 95
 Val Pro Gly Leu Tyr Ala Thr Leu Gly Leu Phe Ile Pro Leu Ile Val
 100 105 110
 Val Asn Cys Ile Val Leu Gly Arg Ala Glu Ala Phe Ala Ala Lys Asn
 115 120 125

5301

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Asn Ala Leu Ser Ser Met Phe Asp Gly Ile Gly Met Gly Leu Gly Phe
 130          135          140
Thr Ile Ala Leu Thr Leu Gly Ala Val Arg Glu Phe Leu Gly Thr
145          150          155          160
Gly Lys Val Phe Asn Leu Ser Ile Ile Pro Glu Glu Tyr Gly Met Leu
          165          170          175
Val Phe Val Leu Ala Pro Gly Ala Phe Ile Ala Leu Gly Tyr Leu Ile
          180          185          190
Ala Leu Ile Asn Ser Leu Lys Lys Ala Asn
          195          200

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<210> 9312

<211> 115

<212> PRT

<213> B.fragilis

<400> 9312

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Lys Ile Glu Leu Met Asn Val Asp Asn Val Lys Ser Gln Met Arg Lys
1          5          10          15
Gly Met Leu Glu Tyr Cys Ile Met Leu Leu His Lys Glu Pro Ala
20          25          30
Tyr Ala Ser Asp Ile Ile Gln Lys Leu Lys Glu Ala Arg Leu Ile Val
35          40          45
Val Glu Gly Thr Leu Tyr Pro Leu Leu Thr Arg Leu Lys Asn Asp Asp
50          55          60
Leu Leu Ser Tyr Glu Trp Val Glu Ser Thr Gln Gly Pro Pro Arg Lys
65          70          75          80
Tyr Tyr Lys Leu Thr Gly Lys Gly Glu Ser Phe Leu Gly Glu Leu Glu
85          90          95
Ala Ser Trp Lys Glu Leu Asn Glu Thr Val Asn His Ile Ala Asn Arg
100          105          110
Glu Ser Ile
115

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<210> 9313

<211> 705

<212> PRT

<213> B.fragilis

<400> 9313

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Asn Leu Gly Leu Gly Leu Phe Ile Ser Ile Phe Val Ser Ile Leu Ile
1          5          10          15
Asp Ile Asp Val Ile Asn Ser Ala Lys Ile Met Asn Asn Met Asp Lys
20          25          30
Lys Ile Leu Ile Tyr Cys Arg Val Ser Thr Gln Gln Gln Thr Thr Asp
35          40          45
Arg Gln Lys Glu Glu Leu Leu Lys Phe Ala Glu Asp Asn His Trp Asn
50          55          60
Val Ala Glu Glu Asp Ile Phe Ile Asp Val Ile Ser Gly Phe Lys Lys
65          70          75          80
Gly Glu Phe Arg Pro Glu Tyr Ala Lys Met Leu Glu Arg Val Glu Tyr
85          90          95
Gly Asp Ile Asp Ile Ile Leu Phe Ser Glu Phe Ser Arg Leu Ala Arg
100          105          110
Asn Ala Thr Glu Leu Leu Glu Gln Ile Lys Leu Phe Ile Asp Lys Gly
115          120          125
Ile Asn Leu Tyr Phe Asp Lys Gln Lys Leu Trp Val Lys Asp Thr Asn
130          135          140
Lys Asp Val Gly Ser Leu Ile Leu Leu His Val Leu Ala Val Met Ser

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145 150 155 160
 Ser Tyr Glu Ile Glu Leu Phe Val Glu Arg Ser Leu Ser Gly Lys Ile
 165 170 175
 Thr Lys Val Gln Ala Gly His Gly Gly Asp Glu Arg Ala Tyr Gly
 180 185 190
 Tyr Met His Asn Glu Asn Lys Gln Ile Val Ile Asn Pro Ile Glu Ser
 195 200 205
 Lys Ile Val Ala Arg Ile Phe Glu Met Tyr Val Gly Gly Tyr Ser Ser
 210 215 220
 Ile Gln Ile Ser Glu Ile Leu Asn Ala Glu Lys Val Pro Ala Pro Tyr
 225 230 235 240
 Val Arg Lys Leu Asn Glu Tyr Lys Lys Asn Arg Glu Ala Lys Gly Leu
 245 250 255
 Glu Val Lys Glu Tyr Lys Phe Asp Thr Asp Asn Leu Lys Trp Arg Ile
 260 265 270
 Ser Thr Ile Asn Arg Leu Met His Asn Glu Leu Tyr Lys Gly Asn Arg
 275 280 285
 Arg Ile Thr Phe Tyr Lys Pro Asp Pro Thr Asn Pro Leu Pro Leu Ser
 290 295 300
 Glu Arg Gln Asp Arg Glu Ile Val Tyr Glu Tyr Ser Glu His Val Glu
 305 310 315 320
 Ser Leu Arg Ile Val Ser Asp Glu Leu Phe Gln Gln Ala Gln Asp Lys
 325 330 335
 Leu Ser Lys Ala His Tyr Asn Lys Asn Asn Ala Val Arg His Glu Asn
 340 345 350
 Leu Leu Lys His Leu Met Val Cys Gly Glu Cys Gly Ala Asn Phe Ser
 355 360 365
 Val Gly Lys Ser Asn Glu Thr Ser Lys Asn Tyr Ile Ser Gly Gly Arg
 370 375 380
 Thr Tyr Lys Cys Tyr Gly Arg Val Asn Arg Lys Asp Lys Pro Arg Thr
 385 390 395 400
 Cys Thr Asn Gly Ala Glu Leu Arg Gln Trp Lys Leu Asp Gly Leu Val
 405 410 415
 Leu Gln Leu Ser Ile Gln Met Phe Ala Glu Ile Asn Ile Gln Gln Thr
 420 425 430
 Asn Ile Leu Lys Ile Glu Asn Leu Gly Lys Glu Ile Glu Glu Leu Val
 435 440 445
 Gln Ile Lys Ser Ser Lys Asn Thr Glu Leu Val Glu Ala Glu Asn Leu
 450 455 460
 Tyr Lys Lys Thr Leu Lys Arg Leu Ile Ala Ile Glu Asp Asp Glu Val
 465 470 475 480
 Ala Lys Asn Leu Ile Ser Asp Ala Lys His Lys Tyr Asp Glu Thr Lys
 485 490 495
 Asn Met Leu Asn Lys Thr Ile Asp Lys Leu Ser Arg Glu Ile Thr Thr
 500 505 510
 Lys Arg Ile Thr Ile Asp Asn Leu Lys Arg Leu Asn Ala Asn Pro Leu
 515 520 525
 Leu Ile Asn Lys Met Asp Glu Ile Arg Lys Asp Arg Asn Leu Val Lys
 530 535 540
 Thr Met Val Asp Glu Tyr Ile Asp Lys Ile Thr Ile Phe Arg Leu His
 545 550 555 560
 Glu Leu Trp Leu Leu Val Val Val Ser Tyr Lys Gly Gly Glu Glu Met
 565 570 575
 Trp Gly Thr Ile Lys Cys Ala Arg Tyr Lys Lys Glu Glu Met Phe Tyr
 580 585 590
 Asp Glu Leu His Cys His Tyr Gly Val Glu Phe Gln Gly Trp Leu Leu
 595 600 605
 Asn Asn Thr Glu Arg Cys Phe Ser Tyr Asp Lys Asn Thr His Ile Ile
 610 615 620

Thr Tyr Asn Gly Glu Ser Lys Ile Tyr Val Glu Phe Lys Ser Gly Glu
 625 630 635 640
 Tyr Asn Tyr Asp Thr Phe Asn Gln Met Ile Gln Glu Thr Gly Trp Met
 645 650 655
 Gly Cys Phe Pro Phe Tyr Ala Tyr Glu Asp Ser Gly Lys Asp Leu Ser
 660 665 670
 Val Pro Ser Asn Glu Asp Phe Gly Lys Ser Leu Gln Glu Asn Arg Ile
 675 680 685
 Asp Trp Lys Ala His Asn Glu Lys Val Leu Glu Arg Leu Leu Ser Lys
 690 695 700
 Ser
 705

<210> 9314
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 9314
 Ile Ile Asn Arg Phe Met Asp Tyr Lys Lys Thr Asn Ala Pro Thr Asn
 1 5 10 15
 Thr Ile Thr Arg Asp Met Met Asp Leu Cys Ala Asp Thr Gly Asn Val
 20 25 30
 Tyr Glu Thr Val Ala Ile Ile Gly Lys Arg Ala Asn Gln Ile Ser Val
 35 40 45
 Glu Ile Lys Asn Asp Leu Ser Lys Lys Leu Ala Glu Phe Ala Ser Tyr
 50 55 60
 Asn Asp Asn Leu Glu Glu Val Phe Glu Asn Arg Glu Gln Ile Glu Ile
 65 70 75 80
 Ser Arg Tyr Tyr Glu Lys Leu Pro Lys Pro Asn Leu Ile Ala Ala Gln
 85 90 95
 Glu Tyr Val Glu Gly Lys Ile Tyr Tyr Arg Asn Pro Ala Lys Glu Lys
 100 105 110
 Glu Lys Leu Gln
 115

<210> 9315
 <211> 334
 <212> PRT
 <213> B.fragilis

<400> 9315
 Lys Ile Ile Ser Met Glu Asn Lys Leu Ile Val Ser Leu Ser Pro His
 1 5 10 15
 Val His Gly Gly Asp Ser Val Gln Lys Asn Met Tyr Gly Val Leu Ile
 20 25 30
 Ala Leu Ile Pro Ala Phe Ile Val Ser Leu Val Tyr Phe Gly Leu Gly
 35 40 45
 Ala Leu Ile Val Thr Ala Thr Ser Val Ile Ala Cys Leu Phe Phe Glu
 50 55 60
 Trp Ala Ile Gly Lys Phe Leu Leu Lys Lys Glu Thr Thr Thr Ile Cys
 65 70 75 80
 Asp Gly Ser Ala Val Ile Thr Gly Val Leu Leu Ala Phe Asn Leu Pro
 85 90 95
 Ser Asn Leu Pro Val Trp Ile Ile Ile Leu Gly Ala Leu Phe Ala Ile
 100 105 110
 Gly Val Gly Lys Met Ser Phe Gly Gly Leu Gly Asn Asn Pro Phe Asn
 115 120 125
 Pro Ala Leu Ala Gly Arg Val Phe Leu Leu Leu Ser Phe Pro Val Gln

130	135	140
Met Thr Ser Trp Pro Val Val Gly Gln Leu Thr Ala Tyr Thr Asp Ala		
145	150	155
Thr Thr Ala Ala Thr Pro Leu Ala Leu Met Lys Gln Ala Ile His Gly		160
	165	170
Asp Val Ser Ala Phe Gly Gln Leu Pro Asp Ala Trp Ser Leu Phe Ile		175
	180	185
Gly Asn Asn Gly Gly Cys Leu Gly Glu Val Ser Ala Ala Ala Leu Ile		190
	195	200
Leu Gly Leu Leu Tyr Met Leu Trp Lys Arg Ile Ile Thr Trp His Ile		205
	210	215
Pro Val Ser Ile Leu Val Thr Val Phe Val Phe Ser Gly Ile Met His		220
225	230	235
Leu Ala Asn Pro Glu Ala Tyr Val Ser Pro Val Ile Gln Leu Leu Ser		240
	245	250
Gly Gly Leu Met Leu Gly Ala Ile Phe Met Ala Thr Asp Tyr Val Thr		255
	260	265
Ser Pro Met Ser Lys Lys Gly Met Leu Ile Tyr Gly Val Cys Ile Gly		270
	275	280
Leu Leu Thr Val Val Ile Arg Leu Phe Gly Ala Tyr Pro Glu Gly Met		285
	290	295
Ser Phe Ala Ile Leu Ile Met Asn Ala Phe Thr Pro Leu Ile Asn Thr		300
305	310	315
Tyr Cys Lys Pro Lys Arg Phe Gly Glu Val Ala Lys Lys Lys		320
	325	330

<210> 9316

<211> 682

<212> PRT

<213> B.fragilis

<400> 9316

Lys Lys Lys Arg Ser Met Asn Phe Glu Leu Thr Ser Ala Tyr Lys Pro	
1	5
Thr Gly Asp Gln Pro Glu Ala Ile Ala Gln Leu Thr Glu Gly Val Leu	10
	15
	20
Glu Gly Val Pro Ala Gln Thr Leu Gly Val Thr Gly Ser Gly Lys	25
	30
	35
Thr Phe Thr Ile Ala Asn Val Ile Ala Asn Ile Asn Lys Pro Thr Leu	40
	45
	50
Ile Leu Ser His Asn Lys Thr Leu Ala Ala Gln Leu Tyr Ser Glu Phe	55
	60
65	70
Lys Gly Phe Phe Pro Asn Asn Ala Val Glu Tyr Tyr Val Ser Tyr Tyr	75
	80
	85
Asp Tyr Tyr Gln Pro Glu Ala Tyr Leu Pro Ser Ser Asp Thr Tyr Ile	90
	95
	100
Glu Lys Asp Leu Ala Ile Asn Asp Glu Ile Asp Lys Leu Arg Leu Ala	105
	110
	115
Ala Thr Ser Ala Leu Leu Ser Gly Arg Lys Asp Val Val Val Val Ser	120
	125
	130
Ser Val Ser Cys Ile Tyr Gly Met Gly Asn Pro Ser Asp Phe Tyr Asn	135
145	150
Asn Val Ile Glu Ile Glu Arg Gly Arg Thr Ile Asn Arg Asn Val Phe	155
	160
	165
Leu Arg Arg Leu Val Asp Ser Leu Tyr Met Arg Asn Asp Ile Glu Leu	170
	175
	180
Asn Arg Gly Asn Phe Arg Val Lys Gly Asp Thr Val Asp Ile Tyr Leu	185
	190
	195
Ala Tyr Leu Asp Asn Leu Leu Arg Val Thr Phe Trp Gly Asp Glu Ile	200
	205

210	215	220
Asp Gly Ile Glu Glu Val	Asp Pro Val Ser Gly	Val Thr Ile Ala Pro
225	230	235
Phe Glu Ala Tyr Lys Ile Tyr Pro Ala Asn Leu Phe Met Thr Thr Lys		240
	245	250
Glu Ala Thr Leu Arg Ala Ile His Glu Ile Glu Asp Asp Leu Thr Lys		255
	260	265
Gln Val Ala Tyr Phe Glu Ser Ile Gly Lys Glu Tyr Glu Ala Lys Arg		270
	275	280
Leu Tyr Glu Arg Val Thr Tyr Asp Met Glu Met Ile Arg Glu Leu Gly		285
	290	295
His Cys Ser Gly Ile Glu Asn Tyr Ser Arg Tyr Phe Asp Gly Arg Ala		300
305	310	315
Ala Gly Thr Arg Pro Tyr Cys Leu Leu Asp Phe Phe Pro Asp Asp Phe		320
	325	330
Leu Ile Val Ile Asp Glu Ser His Val Ser Val Pro Gln Ile Arg Ala		335
	340	345
Met Tyr Gly Gly Asp Arg Ala Arg Lys Ile Asn Leu Val Glu Tyr Gly		350
	355	360
Phe Arg Leu Pro Ala Ala Met Asp Asn Arg Pro Leu Lys Phe Glu Glu		365
	370	375
Phe Glu Ser Met Ala Lys Gln Val Ile Tyr Val Ser Ala Thr Pro Ala		380
385	390	395
Asp Tyr Glu Leu Val Gln Ser Glu Gly Ile Val Val Glu Gln Val Ile		400
	405	410
Arg Pro Thr Gly Leu Leu Asp Pro Val Ile Glu Val Arg Pro Ser Leu		415
	420	425
Asn Gln Ile Asp Asp Leu Met Glu Glu Ile Gln Ile Arg Ile Glu Lys		430
	435	440
Glu Glu Arg Ile Leu Val Thr Thr Leu Thr Lys Arg Met Ala Glu Glu		445
	450	455
Leu Thr Glu Tyr Leu Leu Asn Asn Asn Val Arg Cys Asn Tyr Ile His		460
465	470	475
Ser Asp Val Asp Thr Leu Glu Arg Val Lys Ile Met Asp Asp Leu Arg		480
	485	490
Gln Gly Val Tyr Asp Val Leu Ile Gly Val Asn Leu Leu Arg Glu Gly		495
	500	505
Leu Asp Leu Pro Glu Val Ser Leu Val Ala Ile Leu Asp Ala Asp Lys		510
	515	520
Glu Gly Phe Leu Arg Ser His Arg Ser Leu Thr Gln Thr Ala Gly Arg		525
	530	535
Ala Ala Arg Asn Val Asn Gly Met Val Ile Met Tyr Ala Asp Lys Ile		540
545	550	555
Thr Asp Ser Met Arg Leu Thr Ile Asp Glu Thr Asn Arg Arg Arg Glu		560
	565	570
Lys Gln Leu Ala Tyr Asn Glu Glu His Gly Ile Thr Pro Gln Gln Ile		575
	580	585
Lys Lys Ala Arg Asn Leu Ser Val Phe Gly Asn Gly Ala Glu Thr Glu		590
	595	600
Asp Thr Gln Lys Gly Thr Arg Ala Tyr Val Glu Pro Ser Ser Pro Asn		605
	610	615
Ile Ala Ala Asp Pro Val Gln Tyr Met Ser Lys Ala Gln Leu Glu		620
625	630	635
Lys Ser Met Glu Arg Thr Arg Lys Leu Met Gln Glu Ala Ala Lys Lys		640
	645	650
Leu Glu Phe Ile Glu Ala Ala Gln Tyr Arg Asp Glu Leu Leu Lys Met		655
	660	665
Glu Asp Leu Met Lys Glu Lys Trp Pro Gly		670
675	680	

<210> 9317
 <211> 176
 <212> PRT
 <213> B.fragilis

<400> 9317

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Leu Thr Asn Gly Gln Leu Leu Ser Val Ala Ala Glu Ile His Ile Leu
1      5      10      15
Ser Met Lys Ile Asn Lys Thr Asn Ala Ala Arg Leu Leu Asp Lys Ala
      20      25      30
Lys Ile Ala Tyr Glu Leu Ile Pro Tyr Glu Val Asp Glu Ser Asp Leu
      35      40      45
Ser Ala Val His Val Ala Ala Ser Leu Gly Glu Asn Ile Asn Gln Val
      50      55      60
Phe Lys Thr Leu Val Leu His Gly Asp Lys Thr Gly Tyr Phe Val Cys
65      70      75      80
Val Ile Pro Gly Asp Gln Glu Val Asn Leu Lys Leu Ala Ala Lys Val
      85      90      95
Ser Gly Asn Lys Ser Cys Asp Met Ile Pro Met Lys Glu Leu Leu Ser
      100     105     110
Val Thr Gly Tyr Ile Arg Gly Ala Cys Ser Pro Ile Gly Met Lys Lys
      115     120     125
His Phe Pro Thr Tyr Ile His Glu Thr Cys Leu Gly Phe Pro Tyr Ile
      130     135     140
Tyr Val Ser Ala Gly Gln Arg Gly Leu Gln Ile Lys Ile Asp Pro Lys
145      150      155      160
Glu Leu Ile Asn Glu Val Arg Ala Glu Val Cys Val Leu Tyr Thr Val
      165      170      175

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<210> 9318
 <211> 275
 <212> PRT
 <213> B.fragilis

<400> 9318

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Asn Thr Lys Gly Phe Glu Lys Asn Trp Val Asn Gly Ser Ala Ala Asn
1      5      10      15
Val Leu Leu Ala Val Asn Ala Val Asn Gly Thr Lys Gly Gly Leu Gly
      20      25      30
Ser Ser Tyr Leu Ser Ala Ile Val Asn Asp Tyr Gly Glu Glu Leu Arg
      35      40      45
Thr Glu Ser Gly Thr Thr Ser Phe Ser Ala Asp Gly Asn Leu Pro Arg
      50      55      60
Ile Asp Ile Leu Thr Gln Asn Leu Phe Asn Ala Arg Leu Asp Tyr Lys
65      70      75      80
Leu Phe Met Val Pro Ala Leu Met Val Met Leu Leu Thr Met Leu Cys
      85      90      95
Gly Phe Leu Pro Ala Leu Asn Ile Val Gly Glu Lys Glu Ala Gly Thr
      100     105     110
Ile Glu Gln Ile Asn Val Thr Pro Val Gly Lys Phe Thr Phe Ile Leu
      115     120     125
Ala Lys Leu Ile Pro Tyr Trp Leu Ile Gly Phe Val Val Leu Thr Leu
      130     135     140
Cys Phe Val Leu Ala Trp Thr Leu Tyr Gly Ile Phe Pro Val Gly His
145      150      155      160
Phe Gly Val Ile Tyr Cys Phe Phe Ile Ile Phe Val Leu Ala Val Ser
      165      170      175
Gly Leu Gly Leu Val Ile Ser Asn His Ser Ala Thr Met Gln Gln Ala

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180 185 190
 Met Phe Val Met Trp Phe Cys Met Leu Ile Leu Ile Leu Met Ser Gly
 195 200 205
 Leu Phe Thr Pro Ile Arg Ser Met Pro Glu Trp Ala Gln Trp Ile Thr
 210 215 220
 Met Leu Asn Pro Leu Lys Tyr Phe Met Gln Val Met Arg Met Val Tyr
 225 230 235 240
 Leu Lys Gly Ser Gly Phe Ile Asp Leu Leu Pro Gln Leu Gly Ala Leu
 245 250 255
 Leu Ala Phe Ala Leu Leu Phe Asn Val Trp Ala Val Lys Ser Tyr Arg
 260 265 270
 Lys Ser Gly
 275

<210> 9319
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9319
 Lys Pro Leu Gly Thr Glu Thr Thr Glu Arg Cys Thr Val Ala Thr Asp
 1 5 10 15
 Phe Leu Arg Met Ala Gly Ser Met Ala Glu Thr Lys Arg Asn Gly Thr
 20 25 30
 Glu Ile Lys Ala Val Leu Ser Thr Asn Lys Gly Ser Val Pro Thr Gly
 35 40 45
 Gln Ser Leu Tyr Leu Leu Thr Thr Glu Ala Leu Phe Gly Arg
 50 55 60

<210> 9320
 <211> 657
 <212> PRT
 <213> B.fragilis

<400> 9320
 Gly Phe Ile Ile Pro Met Asn Lys Ile Ala Leu Ala Leu Ile Leu Leu
 1 5 10 15
 Ile Leu Pro Phe Ser Leu Ala Tyr Thr Ser Pro Arg Lys Lys Val Gly
 20 25 30
 Ile Val Leu Ser Gly Gly Gly Ala Lys Gly Val Ala His Ile Gly Val
 35 40 45
 Ile Lys Ala Leu Glu Glu Leu Asn Ile Pro Ile Asp Tyr Ile Ala Gly
 50 55 60
 Thr Ser Ile Gly Ala Ile Ile Gly Gly Leu Tyr Ser Ile Gly Tyr Thr
 65 70 75 80
 Ser Glu Gln Leu Glu Thr Ile Val Lys Gln Thr Asp Trp Ile Asn Leu
 85 90 95
 Leu Thr Asp Lys Val Ser Arg Glu Lys Ile Pro Phe Pro Phe Lys Ser
 100 105 110
 Asn Asp Ser Lys Tyr Leu Val Ser Phe Pro Phe Asn Asn Ser Glu Lys
 115 120 125
 Asn Gly Gly Ile Ile Lys Gly Lys Asn Ile Ser Gln Leu Leu His Gln
 130 135 140
 Leu Thr Glu Gly Tyr Gln Asn Val Thr Asn Phe Asp Ser Leu Pro Ile
 145 150 155 160
 Pro Phe Ala Cys Ile Ala Thr Asp Met Ala Arg Asn Gln Lys Glu Val
 165 170 175
 Ile Arg Phe Gly Lys Leu Ser Glu Ala Met Arg Ala Ser Met Ala Val
 180 185 190

Pro Ile Val Phe Ser Pro Ile Tyr Ser Gly Gln Lys Val Leu Ile Asp
 195 200 205
 Gly Gly Phe Lys Asp Asn Leu Pro Ile Asp Val Val Lys Ser Met Gly
 210 215 220
 Ala Asp Ile Ile Ile Gly Ile Asp Val Gln Ser Glu Leu Ser Asp Ala
 225 230 235 240
 Asp Asn Leu His Ser Ile Ala Gly Ile Ala Asn Gln Leu Met Leu Met
 245 250 255
 Ile Cys Gln Ser Ser Leu Asp Glu Ser Thr Lys Asp Ile Asp Ala Tyr
 260 265 270
 Ile Lys Val Asp Val Glu Asn Tyr Asn Ala Ala Ser Phe Thr Lys Ala
 275 280 285
 Ala Ile Asp Thr Leu Ile Ile Arg Gly Glu Asn Ala Ala Lys Ala Asn
 290 295 300
 Tyr Asn Thr Leu Leu Ser Ile Lys Asn Arg Ile Gly Ile Val Asn Asn
 305 310 315 320
 Lys Arg Asn Asn Lys Ala Gln Leu Pro Leu Phe Tyr Pro Gln Tyr Val
 325 330 335
 Pro Ser Asn Asp Asn Gln Leu Arg Ile Gly Leu Arg Phe Asp Ser Glu
 340 345 350
 Asp Ile Ala Ala Val Met Leu Asn Ile Asn Leu Asn Lys His Lys Phe
 355 360 365
 Gly Lys Ala Glu Ile Ala Val Arg Gly Gly Lys Gln Ser Phe Leu Arg
 370 375 380
 Thr Gln Tyr His Phe Pro Ile Ser Lys Pro Gln Trp Ile Thr Leu Ser
 385 390 395 400
 Asn Gln Ile Gly Tyr Asn Asp Ile Phe Leu Tyr Ser His Gly Tyr Lys
 405 410 415
 Ile Ser Asn Pro Thr Phe Ile Arg Asn Thr Ser Ser Leu Ile Tyr Ser
 420 425 430
 Ile Ile Pro Ser Arg Asn Leu Gln Ile Glu Val Gly Thr Ser Leu Asp
 435 440 445
 Tyr His Gln Tyr Tyr Arg Thr Leu Val Asn Glu Asp Ala Thr Pro Ile
 450 455 460
 Lys Arg Lys Asn Leu Phe Leu Asn Tyr His Thr Lys Leu Lys Tyr Glu
 465 470 475 480
 Thr Leu Asn Lys Arg Tyr Phe Pro Thr Lys Gly Leu Lys Thr Asn Ile
 485 490 495
 Ser Tyr Thr Ile His Thr Asp Leu His Thr Asn Thr Ala Tyr Ser Ser
 500 505 510
 Leu Ala Thr Gln Ile Thr Lys Ile Phe Pro Ile Ala Leu Asn Thr Phe
 515 520 525
 Ile Ile Pro Thr Ile Tyr Gly Arg Phe Ile Phe Asn Asp Gly Ile Pro
 530 535 540
 Phe Met Tyr Ser Asn Val Ile Gly Gly Glu Gly Tyr Asn Pro His Tyr
 545 550 555 560
 Glu Gln Gln Ile Pro Phe Ser Gly Leu Pro His Thr Glu Ser Thr Leu
 565 570 575
 Lys Leu Leu Gly Asn Ala Arg Ile Gln Ile Arg His Lys Phe His Gly
 580 585 590
 Lys Gln Tyr Leu Thr Leu Ser Gly Asn Tyr Ala Ile His Gln Asn Gln
 595 600 605
 Phe Ser Asn Phe Leu Gln Gly Lys Lys Ile Tyr Gly Thr Ser Ile Gly
 610 615 620
 Tyr Gly Tyr Asp Ser Pro Leu Gly Pro Ile Glu Gly Phe Ile Cys Tyr
 625 630 635 640
 Ser Asn Arg Thr Asn Lys Leu Gly Phe Tyr Leu Asn Ile Gly Phe Gly
 645 650 655
 Phe

<210> 9321
 <211> 542
 <212> PRT
 <213> B.fragilis

<400> 9321

Lys	Gln	Ile	Ile	Lys	Thr	Val	Ile	Ala	Val	Gly	Glu	Thr	Lys	Tyr	Ile
1				5					10					15	
Phe	Val	Thr	Gly	Gly	Val	Ala	Ser	Ser	Leu	Gly	Lys	Gly	Ile	Ile	Ser
			20				25						30		
Ser	Ser	Ile	Gly	Lys	Leu	Leu	Gln	Ala	Arg	Gly	Tyr	Lys	Val	Thr	Ile
			35				40					45			
Gln	Lys	Phe	Asp	Pro	Tyr	Ile	Asn	Ile	Asp	Pro	Gly	Thr	Leu	Asn	Pro
			50				55				60				
Tyr	Glu	His	Gly	Glu	Cys	Tyr	Val	Thr	Val	Asp	Gly	His	Glu	Ala	Asp
65					70					75				80	
Leu	Asp	Leu	Gly	His	Tyr	Glu	Arg	Phe	Leu	Gly	Ile	Gln	Thr	Thr	Lys
				85					90					95	
Ala	Asn	Asn	Ile	Thr	Thr	Gly	Arg	Ile	Tyr	Lys	Ser	Val	Ile	Asp	Lys
			100					105					110		
Glu	Arg	Arg	Gly	Asp	Tyr	Leu	Gly	Lys	Thr	Ile	Gln	Val	Ile	Pro	His
			115				120					125			
Ile	Thr	Asp	Glu	Ile	Lys	Arg	Asn	Val	Lys	Leu	Leu	Gly	Asn	Lys	Tyr
	130					135					140				
Lys	Phe	Asp	Phe	Val	Ile	Thr	Glu	Ile	Gly	Gly	Thr	Val	Gly	Asp	Ile
145					150					155				160	
Glu	Ser	Leu	Pro	Tyr	Leu	Glu	Ser	Ile	Arg	Gln	Leu	Lys	Trp	Glu	Leu
				165				170						175	
Gly	Gln	Asn	Ala	Leu	Cys	Val	His	Leu	Thr	Tyr	Val	Pro	Phe	Leu	Ser
			180					185					190		
Ala	Ala	Gln	Glu	Leu	Lys	Thr	Lys	Pro	Thr	Gln	His	Ser	Val	Lys	Glu
			195				200					205			
Leu	Gln	Ser	Leu	Gly	Val	Gln	Pro	Asp	Ile	Leu	Val	Leu	Arg	Thr	Glu
	210					215					220				
His	Asp	Leu	Asn	Thr	Asn	Leu	Arg	Lys	Lys	Val	Ala	Leu	Phe	Cys	Asn
225					230					235				240	
Val	Ala	Glu	Asn	Ala	Val	Val	Gln	Ser	Ile	Asp	Ala	Ser	Thr	Ile	Tyr
			245					250						255	
Glu	Val	Pro	Leu	Leu	Met	Gln	Glu	Gln	Gly	Leu	Asp	Glu	Thr	Ile	Leu
			260					265					270		
Gln	Lys	Met	Gly	Leu	Pro	Val	Gly	Glu	Arg	Pro	Pro	Leu	Gly	Pro	Trp
		275					280					285			
Lys	Asp	Phe	Leu	Asn	Arg	Arg	Ala	Asn	Ala	Thr	Glu	Thr	Val	Thr	Ile
	290					295					300				
Ala	Met	Val	Gly	Lys	Tyr	Val	Glu	Leu	Gln	Asp	Ala	Tyr	Lys	Ser	Ile
305					310					315				320	
Leu	Glu	Ser	Leu	Ser	Gln	Ala	Ala	Thr	Tyr	Asn	Asp	Arg	Lys	Val	Lys
				325					330					335	
Ile	Glu	Tyr	Val	Ser	Ser	Glu	His	Leu	Thr	Pro	Asp	Asn	Val	Asp	Glu
			340					345					350		
Gln	Leu	Gly	His	Val	Asn	Gly	Val	Val	Ile	Cys	Pro	Gly	Phe	Gly	Ser
		355				360						365			
Arg	Gly	Ile	Glu	Gly	Lys	Phe	Val	Ala	Ala	Lys	Tyr	Thr	Arg	Glu	His
	370					375					380				
Asn	Ile	Pro	Thr	Phe	Gly	Ile	Cys	Leu	Gly	Met	Gln	Cys	Met	Ala	Ile
385					390					395				400	
Glu	Phe	Ala	Arg	Asn	Val	Leu	Gly	Tyr	Ala	Asp	Ala	Asn	Ser	Ile	Glu

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<210> 9322
<211> 293
<212> PRT
<213> B.fragilis
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<400> 9322															
Leu 1	Lys	Ile	Met	Asn 5	Leu	Ile	Leu	Ile	Ala 10	Val	Ile	Ser	Leu	Gly 15	Ala
Ile	Ala	Leu	Val 20	Leu	Ala	Ala	Val 25	Leu	Tyr	Val	Ala	Ser 30	Lys	Lys	Phe
Ala	Val	Tyr 35	Glu	Asp	Pro	Arg 40	Ile	Ala	Gln	Val	Ser 45	Glu	Val	Leu	Pro
Gln 50	Ala	Asn	Cys	Gly 55	Gly	Cys 55	Gly	Tyr	Pro	Gly 60	Cys	Ser	Gly	Phe	Ala
Asp 65	Ala	Cys	Val	Lys 70	Ala	Gly	Ser	Leu	Glu	Gly 75	Lys	Phe	Cys	Pro	Val 80
Gly	Gly	Gln	Pro 85	Val	Met	Ser	Gln	Val 90	Ala	Ser	Ile	Leu	Gly 95	Leu	Asp
Ala	Gly	Thr 100	Ala	Glu	Pro	Met	Val 105	Ala	Val	Val	Arg	Cys	Asn	Gly	Thr
Cys	Thr	Asn 115	Arg	Pro	Arg	Thr 120	Asn	Met	Tyr	Asp	Gly 125	Ala	Lys	Ser	Cys
Ala 130	Ile	Ala	Ala	Ser	Leu	Tyr 135	Gly	Gly	Glu	Thr	Gly 140	Cys	Ser	Tyr	Gly
Cys 145	Leu	Gly	Cys	Gly 150	Asp	Cys	Val	Ala	Ala	Cys 155	Gln	Phe	Asp	Ala	Ile 160
His	Met	Asn	Pro 165	Glu	Thr	Gly	Leu	Pro	Glu	Val 170	Asp	Glu	Glu	Lys	Cys 175
Thr	Ala	Cys 180	Gly	Ala	Cys	Val	Lys	Ala 185	Cys	Pro	Lys	Ala	Ile 190	Ile	Glu
Leu	Arg	Ala 195	Lys	Gly	Lys	Lys	Ser	Arg 200	Arg	Val	Tyr	Val 205	Ser	Cys	Val
Asn 210	Lys	Asp	Lys	Gly 215	Ala	Val	Ala	Arg	Lys	Ala	Cys 220	Thr	Val	Ser	Cys
Ile 225	Gly	Cys	Gly	Lys 230	Cys	Val	Lys	Thr	Cys	Pro	Phe 235	Glu	Ala	Ile	Thr 240
Leu	Glu	Asn	Asn 245	Leu	Ala	Tyr	Ile	Asp	Tyr 250	Asn	Lys	Cys	Lys	Ser	Cys 255
Arg	Lys	Cys 260	Val	Glu	Val	Cys	Pro	Gln 265	His	Thr	Ile	Ile	Glu	Leu	Asn
Phe	Pro	Pro	Arg	Lys	Pro	Lys	Glu	Glu	Met	Pro	Val	Ala	Glu	Ala	Ala

275
Lys Thr Ala Glu Ala
290

280

285

<210> 9323
<211> 196
<212> PRT
<213> B.fragilis

<400> 9323
Ser Arg Ile Phe Ile Pro Met Asn Ile Ile Lys Thr Ser Ile Glu Gly
1 5 10 15
Leu Val Ile Leu Glu Pro Arg Leu Phe Gln Asp Asp Arg Gly Tyr Phe
20 25 30
Phe Glu Ser Phe Asn Gln Gly Glu Phe Glu Ser Asn Val Cys Gln Thr
35 40 45
Thr Phe Val Gln Asp Asn Glu Ser Lys Ser Ser Tyr Gly Val Ile Arg
50 55 60
Gly Leu His Phe Gln Lys Pro Pro Phe Ala Gln Ser Lys Leu Val Arg
65 70 75 80
Val Ile Lys Gly Ala Val Leu Asp Val Ala Val Asp Ile Arg Lys Gly
85 90 95
Ser Pro Thr Phe Gly Lys His Val Ser Val Glu Leu Thr Glu Asp Asn
100 105 110
His Arg Gln Phe Phe Ile Pro Arg Gly Phe Ala His Gly Phe Ser Val
115 120 125
Leu Ser Glu Glu Val Ile Phe Gln Tyr Lys Cys Asp Asn Phe Tyr His
130 135 140
Pro Glu Ala Glu Gly Ala Ile Ala Trp Asn Asp Pro Asp Leu Asn Ile
145 150 155 160
Asp Trp Lys Ile Pro Gln Asp Arg Val Ile Leu Ser Gly Lys Asp Tyr
165 170 175
Thr His Pro Leu Leu His Asn Ile Glu Leu Gln Phe Asp Ile Asn Asn
180 185 190
Thr Leu Tyr Glu
195

<210> 9324
<211> 81
<212> PRT
<213> B.fragilis

<400> 9324
Leu Ala Tyr Met Thr Asn Ile Glu Asp Phe Val Ile Gln Lys Val Lys
1 5 10 15
Ala Met Arg Met Glu Arg Lys Trp Ser Gln Val Glu Leu Ala Asp Tyr
20 25 30
Met Asn Leu Ser Pro Ser Phe Ile Ala Asp Ile Glu Asn Pro Lys Arg
35 40 45
Arg Ala Lys Tyr Asn Leu Asn His Leu Asn Glu Leu Ala Lys Val Phe
50 55 60
Ser Cys Ser Pro Lys Asp Phe Leu Pro Asp Thr Pro Leu Lys Asn Glu
65 70 75 80
Lys

<210> 9325
<211> 180
<212> PRT

<213> B.fragilis

<400> 9325

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Ile Ser Ile Phe Leu Ser Ile Leu Phe Ile Ile Phe Ala Leu Leu Ile
1           5           10           15
Thr Ser Ile Ser Ile Asn Met Glu Thr Asn Ile Glu Ile Asn Lys Pro
          20           25           30
Ser Pro Lys Phe Gln Asp Val Ser Ile Ala Pro Met His Thr Ala Glu
          35           40           45
His Leu Leu Asn Ala Thr Met Val Lys Thr Phe Gly Cys Pro Arg Ser
          50           55           60
Arg Asn Ala His Ile Glu Lys Lys Lys Ser Lys Cys Asp Tyr Glu Leu
65           70           75           80
Pro Thr Cys Pro Thr Glu Glu Gln Ile His Ala Ile Glu Glu Lys Val
          85           90           95
Asn Glu Ala Ile Asp Arg His Leu Pro Val Thr Cys Glu Phe Met Thr
          100          105          110
His Glu Glu Ala Lys Ser Ile Val Asp Leu Ser Lys Leu Pro Glu Asn
          115          120          125
Ala Ser Glu Ile Leu Arg Ile Val Arg Ile Gly Asp Tyr Asp Ala Cys
          130          135          140
Ala Cys Ile Gly Gln His Val Glu Asn Thr Ser Glu Ile Gly Leu Phe
145          150          155          160
Lys Ile Ile Ser Tyr Asp Tyr Ala Asp Gly Lys Leu Arg Leu Arg Phe
          165          170          175
Lys Leu Ile Lys
          180

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<210> 9326

<211> 298

<212> PRT

<213> B.fragilis

<400> 9326

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Ser Ile Ile Met Lys Gly Ile Val Leu Ala Gly Gly Ser Gly Thr Arg
1           5           10           15
Leu Tyr Pro Ile Thr Lys Gly Val Ser Lys Gln Leu Leu Pro Ile Phe
          20           25           30
Asp Lys Pro Met Ile Tyr Tyr Pro Ile Ser Val Leu Met Leu Ala Gly
          35           40           45
Ile Arg Glu Ile Leu Ile Ile Ser Thr Pro Tyr Asp Leu Pro Gly Phe
          50           55           60
Gln Arg Leu Leu Gly Asp Gly Ser Asp Phe Gly Val Arg Phe Glu Tyr
65           70           75           80
Ala Glu Gln Pro Ser Pro Asp Gly Leu Ala Gln Ala Phe Ile Ile Gly
          85           90           95
Glu Lys Phe Ile Gly Gly Asp Ser Val Cys Leu Val Leu Gly Asp Asn
          100          105          110
Ile Phe Tyr Gly Gln Ser Phe Thr Arg Met Leu Arg Glu Ala Val His
          115          120          125
Thr Ala Glu Ser Glu Asn Lys Ala Thr Val Phe Gly Tyr Trp Val Ser
          130          135          140
Asp Pro Glu Arg Tyr Gly Val Ala Glu Phe Asp Lys Ala Gly Asn Val
145          150          155          160
Leu Ser Ile Glu Glu Lys Pro Thr Val Pro Lys Ser Asn Tyr Ala Val
          165          170          175
Val Gly Leu Tyr Phe Tyr Pro Asn Lys Val Val Glu Val Ala Lys Ser
          180          185          190
Ile Gln Pro Ser Pro Arg Gly Glu Leu Glu Ile Thr Thr Val Asn Gln

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      195              200              205
Arg Phe Leu Ser Asp Arg Glu Leu Lys Val Gln Leu Leu Gly Arg Gly
      210              215              220
Phe Ala Trp Leu Asp Thr Gly Thr His Asp Ser Leu Ser Glu Ala Ser
225              230              235              240
Thr Phe Ile Glu Val Ile Glu Lys Arg Gln Gly Leu Lys Val Ala Cys
      245              250              255
Leu Glu Gly Ile Ala Leu Arg Gln Gly Trp Ile Ser Pro Glu Glu Met
      260              265              270
Lys Ala Leu Ala Gly Pro Met Leu Lys Asn Gln Tyr Gly Gln Tyr Leu
      275              280              285
Leu Lys Val Ile Asp Glu Leu Ser Ile Lys
      290              295

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<210> 9327

<211> 364

<212> PRT

<213> B.fragilis

<400> 9327

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Phe Cys Tyr Ile Cys Lys His Phe Thr Ser Lys Pro Lys Lys Leu Thr
1              5              10              15
Ile Ile His Val Met Lys Glu Arg Ile Leu Val Thr Gly Gly Thr Gly
      20              25              30
Tyr Ile Gly Ser His Thr Val Val Glu Leu Gln Asn Ser Gly Tyr Glu
      35              40              45
Val Ile Ile Ile Asp Asn Leu Ser Asn Ser Asn Ala Asp Val Val Asp
      50              55              60
Asn Ile Glu Lys Val Ser Gly Ile Arg Pro Val Phe Glu Lys Leu Asp
65              70              75              80
Cys Leu Asp Phe Asp Gly Leu Asp Ala Val Phe Asn Lys Tyr Lys Gly
      85              90              95
Ile Lys Ala Ile Ile His Phe Ala Ala Ser Lys Ala Val Gly Glu Ser
      100              105              110
Val Glu Lys Pro Leu Leu Tyr Tyr Arg Asn Asn Leu Val Ser Leu Ile
      115              120              125
Asn Leu Leu Glu Leu Met Pro Lys His Gly Ile Glu Gly Ile Val Phe
      130              135              140
Ser Ser Ser Cys Thr Val Tyr Gly Glu Pro Asp Glu Leu Pro Val Thr
145              150              155              160
Glu Asn Ala Pro Ile Lys Lys Ala Thr Ser Pro Tyr Gly Asn Thr Lys
      165              170              175
Gln Ile Asn Glu Glu Ile Val Arg Asp Thr Val Ala Ser Gly Ala Pro
      180              185              190
Ile Asn Ala Ile Leu Leu Arg Tyr Phe Asn Pro Ile Gly Ala His Pro
      195              200              205
Thr Ala Leu Leu Gly Glu Leu Pro Asn Gly Val Pro Gln Asn Leu Ile
      210              215              220
Pro Tyr Leu Thr Gln Thr Ala Ile Gly Ile Arg Glu Lys Leu Ser Val
225              230              235              240
Phe Gly Asp Asp Tyr Asp Thr Pro Asp Gly Ser Cys Ile Arg Asp Phe
      245              250              255
Ile Asn Val Val Asp Leu Ala Lys Ala His Val Ile Ala Ile Ala Arg
      260              265              270
Ile Leu Glu Lys Lys Gln Lys Asp Lys Val Glu Thr Phe Asn Ile Gly
      275              280              285
Thr Gly Arg Gly Val Ser Val Leu Glu Leu Ile Asn Gly Phe Glu Lys
      290              295              300
Ala Thr Gly Val Lys Leu Asn Tyr Gln Ile Val Gly Arg Arg Ala Gly

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305 310 315 320
 Asp Ile Glu Lys Val Trp Ala Asn Pro Asp Tyr Ala Asn Asn Glu Leu
 325 330 335
 Gly Trp Lys Ala Gln Glu Thr Leu Glu Asp Thr Leu Arg Ser Ala Trp
 340 345 350
 Ala Trp Gln Leu Lys Leu Arg Glu Arg Gly Ile Gln
 355 360

<210> 9328
 <211> 277
 <212> PRT
 <213> B.fragilis

<400> 9328
 Pro Lys Asp Met Ile Thr Phe Pro Asn Ala Lys Ile Asn Leu Gly Leu
 1 5 10 15
 Asn Ile Thr Glu Lys Arg Pro Asp Gly Tyr His Asn Leu Glu Thr Val
 20 25 30
 Phe Tyr Pro Ile Pro Leu Glu Asp Ala Leu Glu Ile Thr Ile Leu Asn
 35 40 45
 Asp Ser Lys Gln Lys Phe Val Leu His Gln Ser Gly Leu Glu Ile Ser
 50 55 60
 Gly Glu Pro Glu Thr Asn Leu Val Val Lys Ala Tyr Leu Leu Leu Glu
 65 70 75 80
 Gln Glu Phe Gln Leu Pro Pro Val Asp Ile Tyr Leu Tyr Lys His Ile
 85 90 95
 Pro Ser Gly Ala Gly Leu Gly Gly Gly Ser Ala Asp Ala Ala Phe Met
 100 105 110
 Leu Lys Leu Leu Asn Glu Lys Phe Asn Leu His Leu Ala Asp Glu Lys
 115 120 125
 Leu Glu Glu Tyr Ala Ala Ile Leu Gly Ala Asp Cys Ala Phe Phe Ile
 130 135 140
 Lys Asn Lys Pro Thr Phe Ala Glu Gly Ile Gly Asn Ile Phe Ser Pro
 145 150 155 160
 Val Asp Leu Ser Leu Lys Gly Tyr Gln Leu Val Leu Val Lys Pro Asp
 165 170 175
 Val Phe Val Ser Thr Arg Asp Ala Phe Ser Gln Ile Gln Pro His Tyr
 180 185 190
 Pro Asp His Ser Leu Lys Glu Ile Ile Arg Arg Pro Val Ser Glu Trp
 195 200 205
 Lys Asn Cys Met Phe Asn Asp Phe Glu Lys Ser Val Phe Pro Gln Tyr
 210 215 220
 Pro Val Ile Glu Glu Ile Lys Lys Glu Leu Tyr Ser Lys Gly Ala Ile
 225 230 235 240
 Tyr Ala Ala Met Ser Gly Ser Gly Ser Ser Val Phe Gly Leu Phe Ser
 245 250 255
 Pro Glu Glu Lys Ile Thr Lys Met Asp Phe Glu Ala Ala Phe Cys Phe
 260 265 270
 Gln Thr Glu Leu Lys
 275

<210> 9329
 <211> 598
 <212> PRT
 <213> B.fragilis

<400> 9329
 Lys Leu Gln Ile Lys Ile Asn Lys Leu Met Lys Ser Ile Lys Arg Ile
 1 5 10 15

Phe Phe Leu Leu Ser Phe Ile Ser Val Ser Tyr Leu Ser Thr Phe Ala
 20 25 30
 Gln Glu Asn Gln Ser Tyr Phe Leu His Thr Ile Glu Lys Gly Gln Ser
 35 40 45
 Leu Tyr Ser Ile Ser Ser Met Tyr Gly Val Ser Lys Ala Asp Ile Ile
 50 55 60
 Arg Leu Asn Pro Gly Cys Glu Asp Lys Ile Tyr Ala Gly Gln Ala Ile
 65 70 75 80
 Lys Ile Pro Gln Asn Lys Thr Ala Gln Lys Gly Glu Thr Phe His Thr
 85 90 95
 Ile Gln Pro Gly Glu Thr Leu Tyr Arg Leu Thr Thr Thr Tyr Lys Val
 100 105 110
 Ser Ala Lys Ala Ile Cys Asp Ala Asn Pro Gly Leu Ser Ala Glu Asn
 115 120 125
 Phe Arg Ile Gly Gln Val Ile Arg Ile Pro Ser Ala Ala Glu Ala Ile
 130 135 140
 Asp Ser Thr Val Glu Ala Val Val Ala Ala Pro Ser Glu Pro Ala Met
 145 150 155 160
 Gln Pro Ala Val Lys Pro Arg Cys Lys Asp Met His Lys Val Lys Arg
 165 170 175
 Arg Glu Thr Ile Phe Ser Val Ser Arg Glu Tyr Gly Ile Ser Glu Gln
 180 185 190
 Glu Leu Ile Ala Ala Asn Pro Glu Leu Lys Asn Gly Met Lys Lys Gly
 195 200 205
 Gln Phe Leu Cys Ile Pro Tyr Pro Ser Glu Lys Pro Thr Val Thr Val
 210 215 220
 Pro Lys Thr Asp Ala Asn Ile Ile Pro Pro Ser Asp Ser Glu Leu Phe
 225 230 235 240
 Arg Glu Asn Lys Glu Val Pro Lys Ser Ile Ser Thr Ile Lys Ala Ala
 245 250 255
 Leu Leu Leu Pro Phe Asp Asp Lys Arg Met Val Glu Tyr Tyr Glu Gly
 260 265 270
 Phe Leu Met Ala Val Asp Ser Leu Lys Arg Thr Gly Thr Ser Ile Asp
 275 280 285
 Leu Tyr Val Tyr Asp Cys Asn Lys Glu Ser Ser Ser Leu Asn Ser Ile
 290 295 300
 Leu Ala Lys Ser Glu Met Lys Asn Met Asn Val Ile Phe Gly Pro Ala
 305 310 315 320
 Gln Gln Gln His Ile Lys Pro Leu Ala Ala Phe Ala Lys Lys Asn Asp
 325 330 335
 Ile Arg Leu Val Ile Pro Phe Ser Ser Lys Glu Gly Glu Val Phe Asn
 340 345 350
 Asn Pro Phe Ile Tyr Gln Ile Asn Thr Pro Gln Ser Tyr Leu Tyr Ser
 355 360 365
 Glu Val Tyr Glu His Phe Thr Arg Gln Phe Pro Asn Ala Asn Val Ile
 370 375 380
 Leu Leu Glu Ser Ala Val Val Asp Lys Asp Lys Val Glu Phe Ile Lys
 385 390 395 400
 Gly Leu Lys Gln Glu Leu Gly Ser Lys Gly Ile Pro Val Lys Thr Leu
 405 410 415
 Lys Glu Asn Ala Pro Val Glu Ala Leu Lys Ala Ala Leu His Asn Asp
 420 425 430
 Lys Glu Asn Phe Phe Ile Pro Thr Ser Gly Asn Asp Leu Thr Leu Leu
 435 440 445
 Arg Ile Ile Pro Gln Leu Thr Leu Leu Val Arg Asp Asn Pro Glu Ala
 450 455 460
 Arg Ile His Leu Phe Gly Tyr Pro Glu Trp Gln Thr Tyr Thr Lys Asp
 465 470 475 480
 His Leu Glu Ser Phe Phe Glu Leu Asp Thr Tyr Phe Tyr Ser Ser Phe

485 490 495
 Tyr Thr Asn Asn Leu Leu Pro Ala Ala Ile Asn Phe Thr Gln Ala Tyr
 500 505 510
 Arg Lys Trp Tyr Ser Lys Glu Met Glu Glu Arg Tyr Pro Lys Tyr Gly
 515 520 525
 Met Leu Gly Phe Asp Thr Gly Tyr Phe Phe Leu Lys Gly Leu Ser Lys
 530 535 540
 Tyr Gly Ser Glu Leu Glu Lys Asn Leu Pro Gln Met Asp Leu Thr Pro
 545 550 555 560
 Ile Gln Thr Gly Phe Lys Phe Gln Arg Val Asn Asn Trp Gly Gly Phe
 565 570 575
 Val Asn Lys Lys Val Phe Phe Val His Phe Thr Lys Asn Phe Glu Leu
 580 585 590
 Ile Lys Leu Asp Phe Glu
 595

<210> 9330

<211> 452

<212> PRT

<213> B.fragilis

<400> 9330

Thr Asp Lys Ile Gln Asn Cys Met Leu Lys Thr Phe Ser Ile Gly Gly
 1 5 10 15
 Val His Pro His Glu Asn Lys Leu Ser Ala His Gln Pro Ile Val Thr
 20 25 30
 Ala Glu Val Pro Ala Lys Ala Val Ile Leu Leu Gly Gln His Ile Gly
 35 40 45
 Ala Pro Ala Lys Pro Ile Val Ala Lys Gly Asp Val Val Lys Val Gly
 50 55 60
 Thr Lys Ile Ala Glu Ala Asn Gly Phe Val Ser Ala Ala Ile His Ser
 65 70 75 80
 Ser Val Ser Gly Lys Val Ala Lys Ile Asp Ser Ile Val Asp Ala Ser
 85 90 95
 Gly Tyr Ala Lys Pro Ala Ile Phe Ile Asp Val Asp Gly Asp Glu Trp
 100 105 110
 Glu Glu Ser Ile Asp Arg Ser Pro Glu Leu Val Lys Glu Cys Glu Leu
 115 120 125
 Thr Ser Glu Glu Ile Val Lys Lys Ile Ala Asp Ala Gly Ile Val Gly
 130 135 140
 Leu Gly Gly Ala Cys Phe Pro Thr Gln Val Lys Leu Cys Pro Pro Pro
 145 150 155 160
 Ser Phe Lys Ala Glu Cys Val Ile Ile Asn Ala Val Glu Cys Glu Pro
 165 170 175
 Tyr Leu Thr Ala Asp His Gln Leu Met Leu Glu His Ala Glu Glu Val
 180 185 190
 Met Val Gly Val Ala Ile Leu Met Lys Ala Val Lys Val Asn Lys Ala
 195 200 205
 Phe Ile Gly Ile Glu Asn Asn Lys Pro Asp Ala Ile Gln Leu Met Thr
 210 215 220
 Lys Val Ala Ser Ser Tyr Ala Gly Ile Glu Val Val Pro Leu Lys Val
 225 230 235 240
 Lys Tyr Pro Gln Gly Glu Lys Gln Leu Ile Asp Ala Ile Thr Lys
 245 250 255
 Arg Gln Val Ala Ser Gly Ala Leu Pro Ile Ser Thr Gly Ala Val Val
 260 265 270
 Gln Asn Val Gly Thr Ala Phe Ala Val Tyr Gln Ala Val Gln Lys Asn
 275 280 285
 Lys Pro Leu Phe Glu Arg Val Ile Thr Val Thr Gly Lys Ser Val Ala

290 295 300
 Gln Pro Ser Asn Phe Leu Ala Arg Ile Gly Thr Pro Met Gln Gln Leu
 305 310 315 320
 Ile Asp Ala Cys Gly Gly Leu Pro Glu Asp Thr Gly Lys Ile Ile Gly
 325 330 335
 Gly Gly Pro Met Met Gly Lys Ala Leu Val Asn Thr Asp Val Pro Thr
 340 345 350
 Ala Lys Gly Ser Ser Gly Ile Leu Ile Met Asn Arg Lys Glu Ala Lys
 355 360 365
 Arg Gly Glu Val Gln Asn Cys Ile Arg Cys Ala Lys Cys Val Ser Ala
 370 375 380
 Cys Pro Met Gly Leu Glu Pro Tyr Leu Leu Ser Ala Leu Ala Glu Asn
 385 390 395 400
 Thr Glu Phe Glu Arg Met Glu Ser Glu Arg Ile Met Asp Cys Ile Glu
 405 410 415
 Cys Gly Ser Cys Gln Phe Thr Cys Pro Ala Asn Arg Pro Leu Leu Asp
 420 425 430
 Tyr Cys Arg Leu Gly Lys Gly Lys Val Gly Ala Met Ile Arg Ala Arg
 435 440 445
 Gln Ala Lys Lys
 450

<210> 9331

<211> 423

<212> PRT

<213> B.fragilis

<400> 9331

Asn Asn Leu Ile Ile Lys Tyr Asn Thr Met Lys Asn Tyr Leu Ile Thr
 1 5 10 15
 Tyr Ser Cys Ala Met Phe Leu Leu Ala Ser Cys Gly Ser Pro Ser Gln
 20 25 30
 Gln Pro Lys Ala Pro Gly Gln Ile Asp Ile Ala Gly Lys Ile Glu Ser
 35 40 45
 Leu Thr Glu Leu Lys Ala Ser Asp Phe Ile Lys Glu Ile Asn Tyr Val
 50 55 60
 Ala Leu Glu Thr Thr Asp Ser Cys Leu Val Asn Glu Asn Pro Asn Ile
 65 70 75 80
 Gln Val Phe Lys Asn Asn Ile Ile Val Asn Thr Asn Lys Gln Cys Leu
 85 90 95
 Val Phe Asp Lys Asp Ser Gly Lys Phe Leu Arg Ser Ile Gly His Ile
 100 105 110
 Gly Asn Asp Pro Gly Gly Tyr Ser Glu Ala Thr Phe Trp Ile Asp Asp
 115 120 125
 Ile Thr Gly Glu Leu Tyr Phe Ile Gly Trp Asn Gly Thr Leu Met Arg
 130 135 140
 Tyr Asp Leu Gln Gly Asn Tyr Leu Gly Asp Val Lys Val Ala Ser Asn
 145 150 155 160
 Leu Gly Val Arg Asn Pro Ala Cys Phe Val Phe Thr Asp Ser Leu Ile
 165 170 175
 Val Ser His Gln Leu Ser Leu Leu Pro Ile Gln Gly Asn Glu Lys Lys
 180 185 190
 Ser Pro Phe Leu Leu Leu Asp Lys Gln Gly Asn Val Ile Asp Ser Ile
 195 200 205
 Pro Ser Leu Leu Pro Val Ile Pro Val Thr Thr Asn Val Val Arg Leu
 210 215 220
 Asn Ile Leu Lys Ser Glu Lys Ala Arg Glu Leu Tyr Gly Asn Ile Gly
 225 230 235 240
 Val His Gly Met Met Thr Ala Tyr Phe Asn Asn Asp Asp Ala Ile Glu

245 250 255
 Ser Pro Arg Val Leu Ser Thr Leu Trp Lys His Asn Gly Lys Val Arg
 260 265 270
 Phe Lys Glu Ala Tyr Leu Asp Thr Ile Tyr Thr Leu Ser Glu Asn Lys
 275 280 285
 Leu Ser Pro Tyr Leu Ile Phe Asn Thr Gly Lys Tyr His Tyr Pro Ala
 290 295 300
 Glu Glu Arg Tyr Gln Gln Lys Glu Asn Asp Glu Arg Val Lys Ile Asp
 305 310 315 320
 Tyr Val Met Glu Ser Thr Thr Leu Ile Ile Phe Gln Phe Arg Gln Arg
 325 330 335
 Gly Glu Val Tyr Thr Gly Ile Tyr Asn Lys Asp Thr Gln Ile Thr Gln
 340 345 350
 Ile Ala Lys Gly Gln Asn Phe Val Asn Asp Ile Asp His Phe Met Pro
 355 360 365
 Leu Asn Pro Arg Asn Cys Asn Thr Asp Asn Glu Tyr Val Asp Leu Val
 370 375 380
 Gln Ala Asn Thr Ile Leu Glu Trp Met Glu Glu His Pro Glu Val Asn
 385 390 395 400
 Pro Asp Gly Lys Phe Ser Phe Ile Lys Gly Ile Asn Glu Glu Ser Asn
 405 410 415
 Pro Val Val Ile Leu Met Lys
 420

<210> 9332

<211> 279

<212> PRT

<213> B.fragilis

<400> 9332

Lys Arg Tyr Val Asp Leu Trp Cys Leu His Arg Phe Ala Asp Gly Cys
 1 5 10 15
 Tyr Pro Ser Val Trp Cys Ile Ser Gly Arg Tyr Val Val Cys Tyr Ser
 20 25 30
 Asp Tyr Glu Cys Ile His Ser Ala Asn Gln Tyr Val Leu Gln Thr Lys
 35 40 45
 Thr Leu Trp Gly Gly Ser Glu Glu Met Lys Lys Leu Glu Ser Ser
 50 55 60
 Leu Lys Asn Met Leu Leu Val Leu Thr Gly Val Thr Ala Ile Ser Val
 65 70 75 80
 Ala Leu Leu Ala Tyr Val Asn Glu Leu Thr Lys Gly Pro Ile Ala Glu
 85 90 95
 Ala Asn Ala Lys Thr Leu Asn Glu Ala Leu Lys Glu Val Leu Pro Glu
 100 105 110
 Phe Thr Asn Asn Pro Val Ala Glu Cys Asp Thr Val Phe Ser Glu Lys
 115 120 125
 Asp Gly Lys Lys Ile Val Asp Phe Ile Ile Tyr Pro Ala Lys Asn Gly
 130 135 140
 Asp Gln Trp Val Gly Thr Ala Val Glu Ala Lys Ser Met Gly Phe Gly
 145 150 155 160
 Gly Glu Leu Lys Val Leu Val Gly Phe Asp Ala Glu Gly Lys Ile Tyr
 165 170 175
 Asn Tyr Ser Leu Leu Ser His Ala Glu Thr Pro Gly Leu Gly Ser Lys
 180 185 190
 Ala Ala Asp Trp Phe Lys Glu Gly Asn Lys Gly Ser Ile Lys Gly Met
 195 200 205
 Asn Pro Gly Glu Gln Pro Leu Thr Val Ser Lys Asp Gly Gly Gln Val
 210 215 220
 Asp Ala Ile Thr Ala Ser Thr Ile Thr Ser Arg Ala Phe Leu Asn Ala

225 230 235 240
 Val Asn Ala Ala Tyr Gly Ala Tyr Lys Gly Asn Gly Gly Ala Asn Gly
 245 250 255
 Thr Thr Gly Ala Ser Gln Lys Val Val Gln Lys Ser Glu Thr Gly Ile
 260 265 270
 Val Asp Ser Val Val Ile Lys
 275

<210> 9333

<211> 548

<212> PRT

<213> B.fragilis

<400> 9333

Phe Ser Leu Leu Ile Lys Leu Tyr Arg Ile Met Ser His Ile Asp Arg
 1 5 10 15
 Met Arg Gln Leu Gly Asn Ile Ala Leu Pro Asn Glu Asp Ser Pro Leu
 20 25 30
 His Asp Ile Ile Val Lys Lys Leu Lys Lys His Asp Ser Pro Asp Ile
 35 40 45
 Gln Lys Arg Val Gly Glu Ala Phe Asn Lys Ala Phe Ala Ile Val Asp
 50 55 60
 Ala Gln Arg Lys Asn Gly Ala Asn Leu Pro Ile Asp Ile Glu Leu Arg
 65 70 75 80
 Tyr Tyr Leu Glu Glu Phe Asn Ser Arg Ala Trp Lys Tyr Gly Leu Arg
 85 90 95
 Thr Met Pro Ser Ser Phe Asn Val Met Glu Ala Phe Phe Thr Tyr Asn
 100 105 110
 Pro Gln Leu Asn Ser Phe Phe Leu Leu Asp Glu Glu Asp Phe Leu Ile
 115 120 125
 Asp Phe Ile Asp Phe Ile Asp Tyr Ala Thr Ser Lys Asp Cys Pro Asn
 130 135 140
 Lys Ile Glu Glu Ser Leu Lys Leu Phe Asp Glu Asp Arg Ile Tyr Asn
 145 150 155 160
 Phe Thr Val Thr Asn Asn Pro Pro Asp Ile Asp Phe Ser Leu Leu Asp
 165 170 175
 Asn Lys Ile Lys Tyr Ala Ile Gly Gly Val Ser Met Ile Lys Arg Gly
 180 185 190
 Asp Glu Val Ser Met Ile Leu Leu Ala Gly Glu Lys Asn Ser Asp Leu
 195 200 205
 Ser Leu Pro Pro Leu Lys Glu Thr Lys Arg Ile Pro Gly Lys Ser Arg
 210 215 220
 Leu Glu Tyr Ser Pro Asp Arg Val Gln Glu Lys Val Arg Phe Trp Asp
 225 230 235 240
 Asp Glu Gly Tyr Trp Lys Thr Ile Ile Leu Leu Arg Phe Asp Val Leu
 245 250 255
 Thr Met Glu Leu Asp Ala Lys Phe Ile Asn Lys Asp Met Gly Asn Ser
 260 265 270
 Phe Ser Val Leu Thr Asp Tyr Ile Glu Ser Phe Leu Ser Glu Lys Gly
 275 280 285
 Glu Phe Leu Phe Pro Glu Ala Glu Asn Tyr Leu Asn Glu Gln Lys Val
 290 295 300
 Lys Ile Gln Asn Tyr Tyr Pro Leu Phe Glu Ile Ala Arg Thr Cys Leu
 305 310 315 320
 His Leu Leu Ser Tyr Val Glu Lys Tyr Thr Asp Ser Leu Ser Ser Glu
 325 330 335
 Glu His Ile Thr Val Leu Gly His Glu Pro Ile Lys Pro Arg Phe Phe
 340 345 350
 Lys Lys Asp Lys Met Val Pro Pro Lys Tyr Glu Leu Arg Lys Arg Asp

355	360	365
Val Trp Asn Leu Lys Arg Gln Arg Asp Asn Tyr Ser Ser Ser Ile Ile		
370	375	380
Thr Phe Asn Asp Asp Phe Lys Leu Glu Thr Ser Gly Tyr Trp Lys Ser		
385	390	395
Leu Lys Pro Asn Glu Ile Gly Gln Asn Lys Asn Gly Asp Glu Ile His		400
405	410	415
Gly Lys Thr Trp Val Ser Ile Thr Lys Thr Trp His Glu Thr Glu Asn		
420	425	430
Lys Pro Ile Lys Ile Thr Asn Asn Ile Lys Thr Leu Val Asn Ser Val		
435	440	445
Asn Ser Gly Phe Ile Tyr Ile Met Arg Asn Ala Ser His Glu Lys Asn		
450	455	460
Ile Phe Lys Val Gly Leu Thr Arg Arg Asp Cys Glu Thr Arg Ala Lys		
465	470	475
Glu Leu Ser Ser Ala Thr Gly Val Pro Asp Lys Tyr Leu Ile Val Glu		
485	490	495
Glu Phe Ala Thr Ala Asp Cys Val Leu Ala Glu Lys Leu Ile His Glu		
500	505	510
Lys Leu Asp Asp Tyr Arg Leu Asn Asn Lys Arg Glu Phe Phe Lys Ala		
515	520	525
Asn Tyr Ser Phe Ile Arg Ala Thr Ile Asn Glu Ile Val Asn Glu Ile		
530	535	540
Asn Ser Asn Thr		
545		

<210> 9334

<211> 275

<212> PRT

<213> B.fragilis

<400> 9334

Leu Cys Ala Leu Phe Lys Tyr Arg Met Lys Lys Asn Ile Ile Ile Thr		
1	5	10
Leu Leu Ala Ala Thr Val Leu Ser Ser Cys Gly Glu Tyr Asn Lys Leu		
20	25	30
Leu Lys Ser Thr Asp Tyr Glu Tyr Lys Tyr Glu Ala Ala Lys Asn Tyr		
35	40	45
Phe Ala Lys Gly Gln Tyr Asn Arg Ser Ala Thr Leu Leu Asn Glu Leu		
50	55	60
Ile Thr Ile Leu Lys Gly Asp Lys Ala Glu Glu Ser Leu Tyr Met		
65	70	75
Leu Ala Met Ser Tyr Tyr Asn Gln Lys Asp Tyr Ser Thr Ala Ala Gln		
85	90	95
Ser Phe Ile Thr Tyr Phe Asn Thr Tyr Pro Arg Gly Gln Phe Ser Glu		
100	105	110
Leu Ala Arg Phe His Ala Gly Lys Ala Leu Phe Leu Asp Thr Pro Glu		
115	120	125
Pro Arg Leu Asp Gln Ser Ser Thr Tyr Gln Ala Ile Gln Gln Leu Gln		
130	135	140
Met Phe Leu Glu Tyr Tyr Pro Gln Ser Ser Arg Lys Gln Glu Ala Gln		
145	150	155
Asn Met Ile Phe Ala Leu Gln Asp Lys Leu Val Leu Lys Glu Leu Tyr		
165	170	175
Ser Ala Arg Leu Tyr Tyr Asn Leu Gly Asn Tyr Met Gly Asn Asn Tyr		
180	185	190
Leu Ser Cys Val Ile Thr Ala Gln Asn Ala Leu Lys Asp Tyr Pro Tyr		
195	200	205
Thr Asp Tyr Arg Glu Asp Leu Ser Ile Leu Ile Leu Arg Ala Lys Tyr		

210		215		220
Glu Met Ala Val Asn Ser Val Glu Asp Lys Lys Met Asp Arg Tyr Arg				
225		230		240
Glu Thr Val Asp Glu Tyr Tyr Ala Phe Lys Asn Glu Phe Pro Glu Ser				
	245		250	255
Lys Tyr Leu Lys Glu Ala Glu Arg Ile Phe Lys Asp Ser Gln Lys Val				
	260		265	270
Ile Lys Asp				
275				

<210> 9335

<211> 71

<212> PRT

<213> B.fragilis

<400> 9335

Ser Met Phe Phe Lys Ile Lys Lys Asn Gly Arg Ile Glu Phe Ser Tyr				
1	5	10	15	
Glu Trp Arg Ile Ser Ile Asp Gly Trp Leu Ile Tyr Lys Gln Tyr Ser				
	20	25	30	
Ser Tyr Ser Leu Thr Ile His His Leu Val Thr Asp Phe Thr Val Tyr				
	35	40	45	
Thr Ser Arg Leu Pro Pro Thr Ser Gln Leu Ser Phe Pro Ser Thr His				
	50	55	60	
Gly Tyr Ser Phe Pro Tyr His				
65	70			

<210> 9336

<211> 177

<212> PRT

<213> B.fragilis

<400> 9336

Lys Leu Pro Ser His Ser Arg Thr Val Ile Ser Asn Ile Leu Ser Tyr				
1	5	10	15	
Lys Met Asn Thr Leu Met Thr Gln Ile His Glu Leu Gln His Val Ala				
	20	25	30	
His Glu Leu Leu Tyr Leu Gly Ala Asp Gly Ser Pro Ile Tyr Thr Asp				
	35	40	45	
Ser Phe Arg Gln Leu Asn Thr Glu Val Leu Gln Lys Ser Asp Ala Leu				
	50	55	60	
Phe Ala Leu Lys Gly Glu Asn Pro Glu Glu Glu Ala Arg Leu Cys Leu				
65	70	75	80	
Ala Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asp Tyr Gly Asp Lys				
	85	90	95	
Glu Ser Lys Lys Gln Val Ile Leu Asp Arg Ser Leu Leu Val Leu Glu				
	100	105	110	
Ser Leu Pro Ser Ser Leu Leu Lys Cys Gln Leu Leu Thr Tyr Cys Tyr				
	115	120	125	
Gly Glu Val Phe Glu Glu Glu Leu Ala Lys Glu Ala His Ala Ile Ile				
	130	135	140	
Asp Tyr Trp Asp Asn Lys Thr Leu Ser Ile Asp Glu Gln Glu Thr Val				
145	150	155	160	
Asp Met Leu Lys Met Ile Glu Glu Asn Gln Tyr Pro Asn Ser Tyr Ile				
	165	170	175	
Asp				

<210> 9337

<211> 161
 <212> PRT
 <213> B.fragilis

<400> 9337

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Leu Phe Tyr Ser Gly Leu Asn Thr Thr Leu Lys Thr Met Ile Gln Arg
1      5      10      15
Ile Gln Thr Ile Tyr Leu Leu Leu Val Thr Ala Leu Leu Ile Thr Ser
      20      25      30
Met Cys Leu Pro Val Gly Ser Phe Ile Gly Ala Asp Ala Ala Met Tyr
      35      40      45
Val Phe Lys Pro Leu Gly Val Glu Met Asn Gly Thr Leu Tyr Ser Thr
      50      55      60
Trp Gly Val Phe Gly Ile Leu Leu Leu Ser Ala Ile Ile Ala Phe Ala
65      70      75      80
Thr Ile Phe Leu Phe Lys Asn Arg Met Leu Gln Ile Arg Met Thr Ile
      85      90      95
Phe Asn Ser Ile Leu Leu Ile Gly Tyr Tyr Leu Thr Phe Leu Ala Phe
      100     105     110
Met Phe Val Leu Lys Lys Asp Leu Ser Ala Thr Phe Gln Ile Ser Trp
      115     120     125
Ala Leu Cys Leu Pro Leu Ile Ser Ile Ile Leu Asn Trp Leu Ala Val
      130     135     140
Arg Ala Ile Gly Arg Asp Glu Val Met Val Lys Ala Ala Asp Arg Leu
145     150     155     160
Arg

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<210> 9338
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 9338

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Ser Gln Tyr Ser Gly Phe Asp Gly Ser Ser Val Asp Asn Asn Lys Leu
1      5      10      15
Gln Glu Ile Gln Lys Gln Val Met Ile Lys Tyr Leu Ile Glu Lys Glu
      20      25      30
Phe Lys Gln Leu Leu Arg Asn Ser Phe Leu Pro Arg Leu Ile Phe Ile
      35      40      45
Phe Pro Cys Met Ile Met Leu Leu Met Pro Trp Ala Ala Asn Leu Asp
      50      55      60
Ile Lys Asn Ile Arg Met Asn Ile Ile Asp Asn Asp His Ser Val Ser
65      70      75      80
Ser Arg Arg Leu Val Asp Lys Ile Thr Asp Ser Thr Tyr Phe Gln Thr
      85      90      95
Asn Ala Trp Arg Ile Leu Thr Lys Lys Val
      100     105

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<210> 9339
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9339

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Val Ile Lys Ser Leu Phe Met Leu Gly Ile Ser Ile Leu Val Val Leu
1      5      10      15
Tyr Val Tyr Asp Ala Gly Ile Ser Pro Asn Ala Ala Val Val Leu Asn
      20      25      30

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Glu Tyr Pro Met Thr Arg Ile Val Pro Glu Arg Val Ser Asn Phe Pro
 35 40 45
 Phe Phe Ser Thr Gly Glu Glu Ala Pro Phe Glu Val
 50 55 60

<210> 9340
 <211> 1168
 <212> PRT
 <213> B.fragilis

<400> 9340
 Lys Arg Lys Ser Ile Ile Leu Lys Lys Arg Glu Ser Glu Ser Thr Pro
 1 5 10 15
 Ile Leu Ser Asp Ser Lys Gln Ser Lys Ile Asp Leu Asn Gln Phe Ile
 20 25 30
 Asn Leu Thr Arg Tyr Lys Asp Met Arg Lys Ile Ser Leu Pro Arg His
 35 40 45
 Leu Cys Pro Lys Asn Phe Val Ser Lys Gln Ile Leu Leu Ala Met Lys
 50 55 60
 Ile Thr Leu Phe Leu Leu Phe Phe Val Ala Phe Gln Ala Tyr Ser Glu
 65 70 75 80
 Asn Gly Tyr Ser Gln Ser Thr Lys Ile Ser Ile Pro Arg Ser Ser Leu
 85 90 95
 Lys Val Ser Glu Leu Leu Ser Lys Ile Glu Ser Gln Thr Lys Tyr Leu
 100 105 110
 Phe Val Tyr Asn Lys Lys Asn Val Asp Thr Arg Arg Trp Val Asn Val
 115 120 125
 Gln Ala Asp Asn Lys Ala Val Ser Glu Val Leu Asp Gln Ala Phe Lys
 130 135 140
 Gly Thr Asn Ile Lys Tyr Val Met Glu Gly Asn Asn Ile Val Leu Thr
 145 150 155 160
 Arg Asn Asn Asp Asn Ala Ile Thr Ala Gln Gln Asp Arg Val Thr Val
 165 170 175
 Lys Gly Val Val Thr Asp Gln Asn Gly Asp Pro Ile Ile Gly Ala Asn
 180 185 190
 Val Leu Glu Lys Gly Thr Thr Asn Gly Cys Ile Thr Asp Met Glu Gly
 195 200 205
 Asn Phe Thr Leu Asn Val Pro Ser Asn Ala Thr Leu Ala Ile Thr Tyr
 210 215 220
 Ile Gly Tyr Gln Pro Gln Asn Ile Gln Val Asn Gly Arg Gln Ser Phe
 225 230 235 240
 Asn Val Lys Leu Gln Glu Glu Ala Met Ala Leu Glu Gln Val Val Val
 245 250 255
 Thr Ala Met Gly Ile Lys Lys Lys Glu Ala Ser Leu Thr Tyr Ser Thr
 260 265 270
 Gln Gln Val Gly Gly Asp Glu Leu Thr Arg Ala Lys Asp Pro Asn Met
 275 280 285
 Ile Asn Ala Leu Ala Gly Lys Thr Ala Gly Val Gln Ile Thr Lys Ser
 290 295 300
 Ser Ser Gly Leu Gly Gly Ser Ala Lys Val Ser Ile Arg Gly Ser Arg
 305 310 315 320
 Ser Ile Ser Gly Asn Asn Gln Pro Leu Tyr Val Ile Asp Gly Val Pro
 325 330 335
 Met Leu Asn Ser Ser Asn Glu Gln Ala Ser Thr Ala Ile Gly Gly Thr
 340 345 350
 Ala Asp Ala Gly Asn Arg Asp Gly Gly Asp Gly Ile Ser Asn Leu Asn
 355 360 365
 Pro Asp Asp Ile Glu Ser Met Ser Ile Leu Lys Gly Ala Ser Ala Ala
 370 375 380

Ala Leu Tyr Gly Ser Gln Ala Ala Asn Gly Val Ile Leu Ile Thr Thr
 385 390 395 400
 Lys Lys Gly Lys Ala Gly Ile Gln Lys Ile Thr Phe Ser Ser Asn Leu
 405 410 415
 Thr Val Asp His Ala Ile Cys Leu Pro Glu Phe Gln Asn Asn Tyr Ala
 420 425 430
 Met Asp Pro Glu Ala Lys Asn Ser Trp Gly Lys Asn Gln Thr Leu Lys
 435 440 445
 Asp Tyr Asn Asn Ala Asp Asn Phe Phe Gln Asn Gly Val Thr Ala Ile
 450 455 460
 Asn Ser Val Ser Phe Met Asn Gly Ser Glu Lys Met Gln Thr Tyr Phe
 465 470 475 480
 Ser Tyr Ala Asn Thr Thr Ala Lys Gly Ile Val Glu Lys Asn Lys Met
 485 490 495
 Gln Lys His Asn Leu Asn Phe Arg Glu Thr Ala Asn Phe Phe Asn Asp
 500 505 510
 Tyr Leu Lys Leu Asp Ala Asn Val Asn Leu Met Thr Gln Thr Ile Lys
 515 520 525
 Asn Arg Pro Thr Ser Gly Gly Tyr Tyr Met Asn Pro Leu Val Gly Leu
 530 535 540
 Tyr Gly Phe Pro Arg Gly Glu Asp Leu Ser Glu Tyr Lys Asn Asn Phe
 545 550 555 560
 Glu Val Phe Asp Pro Ala Arg Asn Met Asn Val Gln Asn Trp Tyr Thr
 565 570 575
 Ser Tyr Gln Asp Met Glu Gln Asn Pro Tyr Trp Ile Thr Asn Arg Ile
 580 585 590
 Asn Ser Asn Asp Lys Arg Thr Arg Ala Ile Ala Ser Leu Thr Ala Asn
 595 600 605
 Val Lys Ile Thr Asp Trp Leu Asn Ile Gln Ala Arg Gly Thr Ala Asp
 610 615 620
 Tyr Thr His Asp Gln Tyr Gln Gln Arg Met Tyr Ala Ser Thr Ala Pro
 625 630 635 640
 Ala Leu Ala Gly Gln Asn Gly Arg Tyr Ile Asp Leu Asn His Thr Glu
 645 650 655
 Thr Leu Tyr Tyr Gly Asp Val Met Ala Met Val Asn Lys Lys Trp Asn
 660 665 670
 Asp Phe Ser Leu Asn Gly Ala Ile Gly Gly Ser Ile Asn Ser Thr Asn
 675 680 685
 Val Asn Ser Leu Arg Leu Asp Ser Lys Thr Ala Ser Leu Tyr Tyr Pro
 690 695 700
 Asn Val Phe Thr Val Ala Asn Ile Lys Met Thr Gln Ala Ala Tyr Ile
 705 710 715 720
 Asp Glu Gln Met Asn Gln Lys Arg Val Leu Gln Ser Leu Phe Gly Thr
 725 730 735
 Ala Gln Leu Gly Trp Lys Glu Ser Leu Tyr Leu Asp Val Thr Ala Arg
 740 745 750
 Asn Asp Trp Ser Ser Thr Leu Ala Tyr Thr Lys His Ser Ser Phe Phe
 755 760 765
 Tyr Pro Ser Val Gly Leu Ser Trp Val Leu Asn Asn Thr Val Lys Leu
 770 775 780
 Pro Glu Trp Ile Ser Phe Gly Lys Ile Arg Gly Ser Trp Ser Lys Val
 785 790 795 800
 Gly Asn Asp Leu Pro Leu Phe Ile Ser Asn Ser Ile Pro Gly Ser Asn
 805 810 815
 Asp Ile Ile Gly Ala Gly Gly Ala Ile Val Thr Tyr Ser Lys Ala Pro
 820 825 830
 Phe Asn Asp Leu Lys Pro Glu Met Ser Thr Ser Tyr Glu Ile Gly Thr
 835 840 845
 Glu Trp Ile Phe Phe Asn Tyr Arg Leu Asp Leu Asp Ile Ser Tyr Tyr

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      850              855              860
Arg Thr Asn Thr Lys Asn Gln Leu Phe Thr Leu Pro Ser Ser Ala Gly
865              870 .              875              880
Ala Asp Tyr Lys Tyr Tyr Met Val Asn Ala Gly Asn Ile Gln Asn Glu
      885              890              895
Gly Val Glu Ile Thr Leu Gly Ala Thr Pro Val Met Asn Asp Ala Phe
      900              905              910
Arg Trp Lys Thr Gln Phe Asn Phe Ser Thr Asn Lys Asn Lys Ile Ile
      915              920              925
Lys Leu His Pro Asp Leu Lys Thr Phe Val Tyr Gly Asp Glu Ser Phe
      930              935              940
Ser Ser Ser Tyr Ser Met Arg Leu Val Glu Gly Gly Ser Phe Gly Asp
945              950              955              960
Ile Tyr Gly Lys Ala Phe Glu Arg Asp Glu Asn Gly Lys Val Ala Phe
      965              970              975
Thr Thr Asp Lys Asp Gly Asp Lys Ile Pro Asn Val Ile Gly Gly Gly
      980              985              990
Asn Thr Glu Lys Val Gly Asn Cys Asn Pro Asp Phe Met Leu Gly Trp
      995              1000              1005
Ser Asn Thr Phe Thr Tyr Lys Gly Phe Ser Leu Tyr Phe Leu Ile Asp
      1010              1015              1020
Gly Arg Phe Gly Gly Asp Val Leu Ser Gln Thr Gln Ala Glu Leu Asp
1025              1030              1035              1040
Gln Arg Gly Val Ser Leu Asn Ser Gly Lys Ala Arg Asp Ala Gly Tyr
      1045              1050              1055
Ile Asn Ile Asp Gly Thr Gln Val Lys Pro Arg Lys Phe Tyr Thr Ala
      1060              1065              1070
Val Ser Gly Arg Asp Gly Cys Thr Glu Tyr Tyr Met Tyr Asp Ala Thr
      1075              1080              1085
Asn Ile Arg Leu Arg Glu Leu Ser Leu Gly Tyr Ser Leu Pro Gln Ser
      1090              1095              1100
Trp Leu Ala Lys Ala Gly Gly Ala Phe Lys Asp Val Gln Leu Ser Phe
1105              1110              1115              1120
Val Ala Arg Asn Leu Phe Phe Ile Ser Lys Lys Ala Pro Phe Asp Pro
      1125              1130              1135
Asp Ala Val Leu Ser Thr Gly Asn Asp Asn Gln Gly Ile Asp Val Phe
      1140              1145              1150
Gly Met Pro Thr Thr Arg Ser Leu Gly Phe Asn Ile Lys Phe Thr Phe
      1155              1160              1165

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<210> 9341

<211> 810

<212> PRT

<213> B.fragilis

<400> 9341

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Ser Ile Phe Pro Ser Ala Pro Glu Thr Ser Pro Phe Thr Leu Asn Leu
1      5      10      15
Gly Ser Glu Leu Gln Glu Leu Lys Ala Arg Ala Thr Arg Ala Thr Asn
      20      25      30
Val Thr Phe Phe Ile Ile Phe Val Leu Phe Phe Lys Leu Gln Ile Tyr
      35      40      45
Phe Phe Ser Arg Leu Val Lys Ala Phe Cys Arg Val Leu Arg Ser Lys
      50      55      60
Ile Glu Lys Asn Gln Ile Pro Ala Asn Phe Leu Ser His Phe His Asp
65      70      75      80
Ile Ser Ala Ile Asn Val Tyr Leu Cys Gly Asn Phe Glu Arg Lys Ile
      85      90      95
Leu Asp Lys Thr Ile Phe Met Ile Asn Pro Ile Val Lys Thr Ile Glu

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Gly Glu Glu Lys Tyr Ala Val Leu Ser Asp Ile Leu Gly Asp Glu Asp
 580 585 590
 His Leu Gly Asp Met Asp Phe Lys Val Thr Gly Thr Lys Asp Gly Ile
 595 600 605
 Thr Ala Thr Gln Met Asp Ile Lys Val Asp Gly Leu Ser Tyr Glu Ile
 610 615 620
 Leu Glu Arg Ala Leu Asn Gln Ala Lys Glu Gly Arg Met His Ile Leu
 625 630 635 640
 Gly Lys Ile Glu Glu Thr Ile Ser Glu Pro Arg Thr Glu Leu Lys Asp
 645 650 655
 His Ala Pro Arg Ile Glu Thr Met Thr Ile Pro Lys Glu Phe Ile Gly
 660 665 670
 Ala Val Ile Gly Pro Gly Gly Lys Ile Ile Gln Gly Met Gln Glu Glu
 675 680 685
 Thr Gly Ala Thr Ile Thr Ile Glu Glu Ile Asp Asn Val Gly Arg Ile
 690 695 700
 Glu Ile Ser Gly Thr Asn Lys Lys Ser Ile Asp Asp Ala Ile Arg Leu
 705 710 715 720
 Ile Lys Gly Ile Val Ala Val Pro Glu Val Gly Glu Val Tyr Lys Gly
 725 730 735
 Lys Val Arg Ser Ile Met Pro Tyr Gly Ala Phe Val Glu Phe Leu Pro
 740 745 750
 Gly Lys Asp Gly Leu Leu His Ile Ser Glu Ile Asp Trp Lys Arg Leu
 755 760 765
 Glu Thr Val Glu Glu Ala Gly Ile Lys Glu Gly Asp Glu Ile Glu Val
 770 775 780
 Lys Leu Ile Asp Ile Asp Pro Lys Thr Gly Lys Phe Lys Leu Ser Arg
 785 790 795 800
 Lys Val Leu Leu Pro Arg Pro Glu Lys Lys
 805 810

<210> 9342

<211> 538

<212> PRT

<213> B.fragilis

<400> 9342

Val Met Asn Thr Lys Thr Lys Leu Leu Tyr Val Gly Phe Arg Ala Leu
 1 5 10 15
 Asn Thr Cys Cys Leu Tyr Ala Ala Phe Leu Met Ile Thr Ser Cys Gly
 20 25 30
 Asp Asn Val Val Asn Pro Asp Ser Pro Glu Pro Asp Gly Glu Asp Met
 35 40 45
 Ile Pro Val Thr Val Ser Arg Val Glu Asp Gly Ser Tyr Met Glu Ser
 50 55 60
 His Ile Asp Thr Pro Asp Thr Thr Gly Gly Arg Thr Leu Val Asp Glu
 65 70 75 80
 Trp Val Pro Val Lys Glu Pro Pro Ala Ser Arg Ala Ile Pro Ala Ala
 85 90 95
 Val Pro Tyr Glu Gly Pro Ser Ala Val Arg Met Thr Leu Arg Glu Glu
 100 105 110
 Pro Gln Val Pro Thr Arg Ala Ala Thr Leu Gly Asn Gly Ile Tyr Phe
 115 120 125
 Arg Leu Ile Ala Phe Arg Lys Val Gly Ser Asn Tyr Val Phe Gln Ser
 130 135 140
 Ala Ala Asp Phe Thr Thr Asn Gly Ala Ser Ala Pro Thr Leu Arg Leu
 145 150 155 160
 Gly Asn Leu Leu Thr Arg Ala Gly Thr Val Arg Val Ile Gly Tyr Ser
 165 170 175

Phe Asn Ser Thr Ala Ala Met Gly Thr Ile Pro Ser Ser Tyr Thr Tyr
 180 185 190
 Asn Ser Thr Ser Val Thr Ile Pro Asn Met Asn Ser Asp Phe Met Val
 195 200 205
 Tyr Asp Ser Gly Glu Ile Ala Asn Val Ser Thr Ile Ser His Asn Leu
 210 215 220
 Ser Val Ser Phe Thr Gln Lys Leu Cys Lys Leu Thr Val Lys Leu Ser
 225 230 235 240
 Leu Ser Gln Phe Val Ser Asn Thr Phe Thr Asn Cys Thr Gly Val Tyr
 245 250 255
 Val Ser Gln Gly Gly Asn Thr Ser Ala Trp Thr Ile Gly Pro Ser Thr
 260 265 270
 Asn Asn Val Ser Ala Asn Thr Gly Asn Thr Pro Thr Phe Asn Ile Ala
 275 280 285
 Asn Asn Ser Thr Ala Thr Ile Arg Leu Val Pro Phe Ser Gly Ser Arg
 290 295 300
 Ala Ile Thr Val His Ile Gly Thr Leu Thr Leu Ser Asn Tyr Phe Asn
 305 310 315 320
 Ala Asn Asn Arg Asn Ile Thr Ser Ser Gln Asn Val Gln Leu Leu Pro
 325 330 335
 Gly Arg Ser Tyr Thr Ile Thr Leu Gln Ile Gly Leu Gly Ile Gln Val
 340 345 350
 Ala Ala Ser Asp Ile Asn Leu Thr Gln Asn Gly Cys Thr Ala Ser Asp
 355 360 365
 Lys Asn Asp Leu Ala Lys Leu Arg Trp Ala Thr Gly Asn Leu Lys Ser
 370 375 380
 Thr Gly Ser Ala Asn Tyr Val Trp Ala Ser Ser Thr Asp Arg Gly Tyr
 385 390 395 400
 Tyr Tyr Thr Trp Tyr Ser Thr Tyr Thr Gly Asn Thr Asn Ile Asn Asn
 405 410 415
 Thr Asp Pro Cys Ser Lys Leu Asn Thr Ala Tyr Tyr Gly Thr Gly Trp
 420 425 430
 Arg Thr Pro Ser Lys Asn Glu Leu Thr Lys Leu Ala Arg Cys Thr Asn
 435 440 445
 Lys Ile Leu Thr Asn Ser Gly Met Trp Phe Met Asn Asn Ser Ile Gly
 450 455 460
 Leu Phe Leu Pro Ala Ala Gly Cys Arg Gln Asp Gly Asn Gly Ser Asn
 465 470 475 480
 Thr Ser Pro Thr Thr Asp Ser Gly Thr Asp Gly Tyr Tyr Trp Ser Ser
 485 490 495
 Asp Ile Gly Asn Gly Asn Asn Thr Gly Lys Arg Leu Tyr Phe Gly Lys
 500 505 510
 Arg Tyr Asn Thr Ala Asp Val Ala Asp His Ala Lys Asn Ala Gly Leu
 515 520 525
 Thr Val Arg Cys Val Lys Gly Thr Lys Gln
 530 535

<210> 9343

<211> 253

<212> PRT

<213> B.fragilis

<400> 9343

Ile Met Lys Thr Glu Leu Lys Gly Trp Leu Ala Asp Asn Thr Val Thr
 1 5 10 15
 Thr Asp Asn Lys Glu Asp Lys Ile Leu Val Leu Glu Ser Ala Gly Asn
 20 25 30
 Leu Thr Leu Ser Asp Val Leu Asp Glu Met Lys Lys Glu Asp Thr Gly
 35 40 45


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Leu Arg Ala Glu Thr Leu Lys His Ala Val Asp Leu Phe Gln Arg Thr
 50          55          60
Val Ser Glu Leu Val Leu Asn Gly Tyr Ser Val Asn Thr Gly Leu Phe
65          70          75          80
Arg Ala Val Pro Gln Phe Arg Gly Val Ile Asp Gly Gly Val Trp Asn
          85          90          95
Pro Glu Lys Asn Ser Ile Tyr Val Ser Phe Asn Gln Asp Lys Asp Leu
          100          105          110
Arg Glu Ala Ile Ala Arg Thr Gly Val Lys Ile Leu Gly Val Lys Gly
          115          120          125
Asp Ser Ala Tyr Phe Ile Gly Gly Glu Asp Ala Ala Thr Arg Ala Thr
          130          135          140
Asp Gly Ser Ala Thr Ala Gly Arg Asn Tyr Arg Leu Gln Gly Lys Asn
145          150          155          160
Ile Lys Val Ala Gly Thr Asp Pro Ala Val Gly Ile Val Leu Ile Asp
          165          170          175
Glu Lys Gly Thr Glu Thr Lys Leu Pro Met Asp Met Ile Ala Val Asn
          180          185          190
Asn Pro Ser Glu Val Leu Val Leu Leu Pro Ala Asp Leu Thr Asp Gly
          195          200          205
Ile Tyr Lys Leu Arg Leu Thr Thr Gln Tyr Thr Ser Gly Asn Arg Gln
          210          215          220
Leu Lys Thr Pro His Val Ile Ser Gln Thr Ile Val Ile Gly Asn Thr
225          230          235          240
Thr Glu Gly Asp Gly Asp Ile Val Asp Asp Pro Thr Ala
          245          250

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<210> 9344
 <211> 86
 <212> PRT
 <213> B.fragilis

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<400> 9344
Cys Asn Lys Asp Lys Met Leu Phe Leu Leu Val Gln Ile Phe Ser His
 1          5          10          15
Arg Phe Asn Tyr Gln Ser Phe Ile Tyr Ser Leu Cys Ile Leu Tyr Arg
          20          25          30
Glu Gln Glu Ser Cys Phe Lys Arg Arg Thr Ser Phe Glu Thr Pro Pro
          35          40          45
Val Tyr Ser Arg Gln Leu Tyr Leu Ile Gly Ile His Lys Leu Thr His
          50          55          60
Asn Lys Ser Cys Ile Lys Gln Ser Leu Pro Thr Tyr Thr Leu Met Tyr
65          70          75          80
Lys Ser Gly Lys Arg Phe
          85

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<210> 9345
 <211> 313
 <212> PRT
 <213> B.fragilis

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<400> 9345
Lys His Phe Met Glu Gln Glu Leu Leu Tyr Lys Tyr Phe Lys Gly Thr
 1          5          10          15
Thr Ser Glu Glu Glu Glu Arg Leu Ile Leu Asp Trp Val Asp Ala Ser
          20          25          30
Pro Glu Asn Arg Lys Ala Phe Gln Lys Glu Arg Met Leu Tyr Asp Ile
          35          40          45
Ala Leu Phe Thr Asp Glu Lys Gln Met Asn Arg Lys Asp Arg Lys Ala

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50 55 60
 Arg Ile Ile Pro Met Leu Arg Trp Ser Ala Arg Ile Ala Ala Val Val
 65 70 75 80
 Ile Val Ala Ile Ser Phe Gly Phe Leu Phe Lys Asn Tyr Gln Tyr Glu
 85 90 95
 Lys Ser Ala Cys Gln Gln Thr Ile Thr Val Pro Ala Gly Gln Arg Ala
 100 105 110
 Gln Ile Thr Leu Ala Asp Gly Thr Lys Val Trp Leu Asn Ser Lys Ser
 115 120 125
 Thr Leu Thr Tyr Ala Ser Asn Phe Gly Arg Lys Glu Arg Asn Val Glu
 130 135 140
 Leu Asp Gly Glu Ala Tyr Phe Glu Val Ala Lys Asn Lys Lys Ile Pro
 145 150 155 160
 Phe Phe Val Asn Thr Glu Ile Asn Arg Val Lys Val Val Gly Thr His
 165 170 175
 Phe Asn Val Cys Ala Tyr Lys Gly Ser Asn Glu Phe Glu Thr Thr Leu
 180 185 190
 Ile Glu Gly Ile Val Asp Ile Tyr Pro Ile Gly Ser Asp Gln Val Ile
 195 200 205
 Thr Arg Leu Thr Lys Asp Glu Phe Phe Gly Ser Tyr Asn Gly Lys Tyr
 210 215 220
 Lys Lys Thr Thr Leu Pro Ser Tyr Glu Tyr Leu Arg Trp Lys Glu Gly
 225 230 235 240
 Leu Tyr Cys Phe Asp Ala Pro Phe Asn Ser Leu Leu Asn Lys Leu
 245 250 255
 Glu Lys Tyr Tyr Asn Val Asn Ile Ser Val Arg Asn Leu Asn Ile Leu
 260 265 270
 Asn Tyr Arg Cys Thr Gly Lys Phe Lys Glu Gln Asp Gly Ile Glu His
 275 280 285
 Ile Leu Lys Val Ile Gln Lys Asp His Lys Phe Thr Tyr Ser Ile Asn
 290 295 300
 Glu Glu Lys Asp Ser Ile Ile Ile Glu
 305 310

<210> 9346

<211> 374

<212> PRT

<213> B.fragilis

<400> 9346

Thr Lys Asn Met Asp Lys Leu Asn Ile Asn Ser Thr Pro Ser Ser Val
 1 5 10 15
 Lys Asn Gly Arg Gly Glu Arg Leu Leu Val Ile Asn Pro Gly Ser Thr
 20 25 30
 Ser Thr Lys Ile Ala Val Tyr Glu Asn Glu Thr Pro Leu Leu Val Arg
 35 40 45
 Asn Ile Arg His Thr Val Glu Glu Leu Ser Ala Phe Pro Arg Val Ile
 50 55 60
 Asp Gln Phe Glu Phe Arg Lys Ser Leu Val Leu Arg Glu Leu Glu Val
 65 70 75 80
 Asn Asp Ile Pro Phe Arg Phe Asp Ala Val Ile Gly Arg Gly Gly Leu
 85 90 95
 Val Lys Pro Ile Pro Gly Gly Val Tyr Glu Val Asn Glu Ala Met Lys
 100 105 110
 Arg Asp Thr Leu His Ala Met Arg Thr His Ala Cys Asn Leu Gly Gly
 115 120 125
 Leu Ile Ala Asp Glu Leu Ala Ala Leu Pro Gly Cys Arg Ala Phe
 130 135 140
 Ile Ala Asp Pro Gly Val Val Asp Glu Leu Glu Glu Val Ala Arg Ile

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145          150          155          160
Thr Gly Ser Pro Leu Met Pro Arg Ile Thr Ile Trp His Ala Leu Asn
          165          170          175
Gln Lys Ala Ile Ala Arg Arg Tyr Ala Ala Glu His Gly Thr Arg Tyr
          180          185          190
Glu Asp Leu Asp Leu Ile Val Cys His Leu Gly Gly Gly Ile Ser Val
          195          200          205
Ala Val His Arg His Gly Arg Ala Val Asp Ala Asn Asn Ala Leu Asp
          210          215          220
Gly Glu Gly Pro Phe Ser Pro Glu Arg Ala Gly Thr Leu Pro Ala Gly
225          230          235          240
Gln Leu Ile Asp Leu Cys Phe Ser Gly Lys Phe Thr Lys Asp Glu Leu
          245          250          255
Lys Lys Arg Ile Ser Gly Arg Ala Gly Leu Thr Ala His Leu Gly Thr
          260          265          270
Thr Asp Ile Pro Ala Ile Ile Gln Ser Ile Glu Ala Gly Asp Asp His
          275          280          285
Ala Arg Leu Val Leu Asp Ala Met Ile Tyr Asn Val Ala Lys Ser Ile
          290          295          300
Gly Ala Ala Ser Thr Val Leu Cys Gly Lys Val Asp Ala Ile Leu Leu
305          310          315          320
Thr Gly Gly Ile Ala Tyr Ser Asp Tyr Val Ile Ser Arg Leu Arg Glu
          325          330          335
Arg Ile Ser Phe Leu Ala Pro Val Phe Val Tyr Pro Gly Glu Asp Glu
          340          345          350
Met Glu Ala Leu Ala Leu Asn Ala Leu Gly Ala Leu Arg Gly Glu Leu
          355          360          365
Pro Val Gln Val Tyr Gln
          370

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<210> 9347

<211> 189

<212> PRT

<213> B.fragilis

<400> 9347

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Asn Leu Phe Met Pro Ser Asn Asn Ser Leu His Thr Met Asp Leu Phe
1          5          10          15
Ser Gln Phe Phe Gln Glu Asn Gln Lys Lys Phe Leu Ser Phe Ala Tyr
          20          25          30
Ser Tyr Thr Arg Asn Lys Ala Ala Ala Glu Asp Ile Leu Met Glu Ala
          35          40          45
Met Ala Ser Leu Trp Glu Asn Arg Lys Lys Trp Glu Lys Asp Ser Asn
          50          55          60
Leu His Ala Leu Leu Leu Thr Ile Ile Lys Asn Lys Ser Leu Asn Tyr
65          70          75          80
Leu Glu His Glu Gln Val Arg Met Lys Ala Glu Glu Val Ile Asn Thr
          85          90          95
His Lys Gln Arg Glu Leu Asp Leu Arg Ile Ser Thr Leu Glu Ala Cys
          100          105          110
Glu Pro Ala Thr Ile Phe Asp Thr Glu Ile Gln Arg Ile Val Tyr Lys
          115          120          125
Thr Leu Glu Gln Leu Pro Glu Gln Ser Arg His Ile Phe Ile Leu Ser
          130          135          140
Arg Tyr His Asn Thr Pro Asn Lys Lys Ile Ala Glu Gln Leu Gly Ile
145          150          155          160
Ser Ile Lys Ser Val Glu Phe His Ile Thr Lys Ala Leu Lys Leu Leu
          165          170          175
Arg Leu Glu Leu Lys Asp Tyr Leu Ile Ser Leu Leu Phe

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180

185

<210> 9348
 <211> 542
 <212> PRT
 <213> B.fragilis

<400> 9348

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Lys Arg Phe Ile Met Lys Asn Asn Ile Lys Tyr Ile Ala Gly Ile Leu
1          5          10          15
Leu Gly Gly Leu Ile Gly Phe Ser Ala Cys Thr Asp Ser Phe Glu Ser
          20          25          30
Phe Asn Thr Asn Glu Ala Gly Phe Asp Asn Asp Ser Lys Lys Gln Asp
          35          40          45
Phe Asn Tyr Tyr Gly Ile Pro Leu Gly Ile Ile Gln Gln Gly Ile Tyr
          50          55          60
Phe Asn Tyr Asp Trp Gly Ser Gly Lys Asn Trp Pro Phe Gln Thr Met
65          70          75          80
Gln Asn Leu Gly Ala Asp Leu Phe Ser Gly Tyr Val His Asp Phe Asn
          85          90          95
Pro Phe Asn Glu Gly Lys Asn Asn Ser Thr Tyr Tyr Met Met Asp Gly
          100          105          110
Trp Asn Gly Ser Thr Trp Asp Asn Thr Tyr Gly Tyr Ile Met Pro Glu
          115          120          125
Val Gln Lys Ser Glu Thr Ile Asn Glu Lys Asp Asn Ile Gly Phe Phe
          130          135          140
Gly Ile Thr Lys Ile Leu Lys Val Glu Leu Met His Arg Leu Ser Asp
145          150          155          160
Leu Tyr Gly Pro Ile Val Tyr Thr Gln Phe Gly Ser Lys Thr Gly Ser
          165          170          175
Thr Pro Asp Thr Gln Gln Glu Ala Tyr Lys Ala Phe Phe Asn Asp Leu
          180          185          190
Asp Thr Gly Ile Ala Lys Ile Arg Glu Tyr Gln Lys Ala Asn Pro Asp
          195          200          205
Ile Glu Ser Phe Ala Lys Phe Asp Ile Leu Met Pro Gln Gly Lys Arg
          210          215          220
Thr Phe Ser Glu Trp Ile Arg Phe Ala Asn Ser Leu Arg Leu Arg Leu
225          230          235          240
Ala Val Arg Ile Ala Met Ala Asp Ser Lys Leu Ala Val Ala Glu Ala
          245          250          255
Gln Lys Ala Leu Thr Asp Glu Glu Gly Leu Leu Glu Gly Asn Asp Glu
          260          265          270
Val Val Ala Val Ser Thr Ser Ser Gly Tyr Thr Asn Pro Phe Gly Glu
          275          280          285
Ile Asn Lys Ala Trp Gly Glu Val Phe Met Asn Ala Asn Met Glu Ser
          290          295          300
Leu Leu Val Gly Tyr Glu Asp Pro Arg Met Glu Lys Tyr Phe Asp Lys
305          310          315          320
Ala Thr Gly Ser Asp Ala Thr Ser Leu Ile Asp Tyr Lys Gly Thr Tyr
          325          330          335
Lys Gly Ile Arg Gln Gly Thr Gly Phe Ser His Lys Asn Tyr Asn Gly
          340          345          350
His Ser Lys Ser Thr Ile Thr Gln Gln Thr Asp Ala Val Leu Met Thr
          355          360          365
Pro Ala Glu Val Trp Phe Leu Arg Ala Glu Ala Ala Leu Arg Gly Trp
          370          375          380
Ser Ser Glu Ser Val Lys Asp Cys Tyr Glu Lys Gly Val Lys Ala Ser
385          390          395          400
Phe Ala Gln Trp Gly Ala Ala Gly Ala Glu Ala Tyr Leu Glu Ser Asp

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405 410 415
 Arg Lys Pro Ser Asp Tyr Val Asp Ala Phe Lys Ala Ala Asn Asn Val
 420 425 430
 Lys Ala Val Asn Thr Leu Thr Pro Lys Trp Asp Asp Ala Ala Gly Asn
 435 440 445
 Glu Asp Lys Leu Gly Arg Ile Ile Thr Gln Lys Trp Leu Ala Met Phe
 450 455 460
 Pro Glu Gly Gly Glu Ala Trp Ala Glu Gln Arg Arg Thr Gly Tyr Pro
 465 470 475 480
 Arg Leu Phe Pro Val Leu Val Asn Gln Ser Glu Gly Thr Val Asp Thr
 485 490 495
 Asn Leu Gly Pro Arg Arg Leu Asn Phe Phe Val Gly Ile Lys Thr Thr
 500 505 510
 Asn Pro Glu Gln Tyr Thr Gln Leu Val Asn Ala Leu Gly Gly Ile Asp
 515 520 525
 Asn Cys Gly Thr Arg Leu Trp Trp Asp Thr Gly Arg Asn Phe
 530 535 540

<210> 9349

<211> 250

<212> PRT

<213> B.fragilis

<400> 9349

Phe Phe Ser Ile Leu Glu Arg Arg Thr Arg Gln Asn Ala Leu Thr Asn
 1 5 10 15
 Leu Glu Lys Lys Tyr Ile Cys Ser Leu Lys Asn Asn Thr Asn Ile Met
 20 25 30
 Lys Lys Val Thr Leu Val Ala Leu Val Ala Leu Ala Leu Ser Ser Cys
 35 40 45
 Asn Ser Asp Pro Lys Phe Asn Val Lys Gly Asp Val Ser Gly Ala Asp
 50 55 60
 Gly Lys Met Leu Tyr Leu Glu Ala Ser Gly Leu Glu Gly Ile Val Pro
 65 70 75 80
 Leu Asp Ser Ile Lys Leu Lys Gly Asp Gly Ser Phe Ser Phe Lys Gln
 85 90 95
 Leu Arg Pro Glu Ser Pro Glu Phe Tyr Arg Leu Arg Val Glu Asp Lys
 100 105 110
 Val Ile Asn Phe Ser Val Asp Ser Thr Glu Thr Val Ser Ile Gln Ala
 115 120 125
 Pro Tyr Thr Asp Phe Ser Thr Ala Tyr Thr Val Glu Gly Ser Glu Asn
 130 135 140
 Ser Ala Lys Ile Lys Glu Leu Thr Leu Lys Gln Val Arg Leu Gln Lys
 145 150 155 160
 Asp Val Asp Ala Leu Val Lys Ala Ala Gln Ala His Gln Leu Gly Asn
 165 170 175
 Asp Val Phe Glu Asp Ser Leu Ala Val Leu Leu Lys Asn Tyr Lys Asp
 180 185 190
 Asp Val Lys Ile Asn Tyr Ile Phe Ala Ala Pro Asn Thr Ala Ser Ala
 195 200 205
 Tyr Phe Ala Leu Phe Gln Lys Leu Asn Asn Tyr Met Ile Phe Asp Pro
 210 215 220
 Leu Asn Asn Lys Asp Asp Ile Lys Cys Phe Gly Ala Val Ala Thr Ser
 225 230 235 240
 Leu Asn Asn Thr Tyr Pro Gln Val Phe Thr
 245 250

<210> 9350

<211> 107

<212> PRT
 <213> B.fragilis

<400> 9350

Val	Glu	Ala	Ile	Ser	Ile	Leu	Ser	Ala	Leu	Leu	Ala	Ile	Arg	Phe	Pro
1				5					10					15	
Thr	Val	Ser	Leu	Leu	Lys	Cys	Thr	Val	Ile	Val	Arg	Glu	Leu	Ala	Lys
			20					25					30		
Gly	Thr	Met	Arg	Ile	Val	Val	Val	Trp	Leu	Val	Phe	Gly	Leu	Asn	Glu
		35					40					45			
Ala	Val	Leu	Leu	Val	Leu	Ala	Ala	Thr	Ala	Glu	Leu	Pro	Ile	Thr	His
	50					55					60				
Glu	Val	Glu	Leu	Pro	Pro	Cys	Phe	Thr	Tyr	Thr	Pro	Val	His	Pro	Leu
65					70					75				80	
Met	Val	Leu	Leu	Val	Lys	Pro	Val	Thr	Leu	Met	Leu	Ile	Val	Ser	Leu
				85					90					95	
His	Ser	Phe	Cys	Leu	Asn	Val	Thr	Gly	Arg	Leu					
				100				105							

<210> 9351
 <211> 317
 <212> PRT
 <213> B.fragilis

<400> 9351

Lys	Ser	Asn	Val	Met	Glu	Pro	Ile	Arg	Asn	Phe	Asp	Gln	Leu	Thr	Ala
1				5					10					15	
His	Leu	Lys	Thr	Leu	Asn	Arg	Arg	Lys	Arg	Ile	Ala	Val	Val	Cys	Ala
			20					25					30		
Asn	Asp	Pro	Asn	Thr	Glu	Tyr	Ala	Ile	Ala	Arg	Ala	Leu	Asp	Glu	Glu
		35					40					45			
Ile	Ala	Glu	Phe	Leu	Met	Ile	Gly	Asp	Ser	Ala	Ile	Leu	Gln	Lys	Tyr
	50					55					60				
Pro	Ser	Leu	Gln	Lys	Tyr	Pro	Glu	Tyr	Val	Lys	Thr	Leu	His	Ile	Glu
65					70					75				80	
Asp	Pro	Asp	Glu	Ala	Arg	Glu	Ala	Val	Arg	Ile	Val	Arg	Glu	Gly	
				85					90				95		
Gly	Ala	Asp	Ile	Leu	Met	Lys	Gly	Ile	Asn	Thr	Asp	Asn	Leu	Leu	
			100					105				110			
His	Ala	Ile	Leu	Asp	Lys	Glu	Lys	Gly	Leu	Leu	Pro	Lys	Gly	Lys	Ile
		115					120					125			
Leu	Thr	His	Leu	Ala	Val	Met	Gln	Ile	Pro	Thr	Tyr	Asp	Lys	Leu	Leu
	130					135					140				
Phe	Phe	Ser	Asp	Ala	Ala	Val	Ile	Pro	Arg	Pro	Thr	Leu	Gln	Gln	Arg
145					150					155				160	
Ile	Glu	Met	Ile	Trp	Tyr	Ala	Ile	Cys	Thr	Cys	Arg	Arg	Phe	Gly	Ile
				165					170					175	
Glu	Gln	Pro	Arg	Ile	Ser	Leu	Ile	His	Cys	Thr	Glu	Lys	Val	Ser	Ala
			180					185					190		
Lys	Phe	Pro	His	Ser	Leu	Asp	Tyr	Val	Asn	Ile	Val	Glu	Leu	Ala	Glu
		195				200						205			
Ala	Gly	Glu	Phe	Gly	Asn	Val	Ile	Ile	Asp	Gly	Pro	Leu	Asp	Val	Arg
	210				215						220				
Thr	Ser	Cys	Glu	Gln	Ala	Ser	Gly	Asp	Ile	Lys	Gly	Ile	Val	Ser	Pro
225					230					235				240	
Ile	Asn	Gly	Gln	Ala	Asp	Val	Leu	Ile	Phe	Pro	Asn	Ile	Glu	Ser	Gly
				245					250					255	
Asn	Ala	Phe	Tyr	Lys	Ser	Val	Ser	Leu	Phe	Ala	Lys	Ala	Asp	Met	Ala
				260				265					270		

Gly Leu Leu Gln Gly Pro Ile Cys Pro Val Val Leu Pro Ser Arg Ser
 275 280 285
 Asp Ser Gly Leu Ser Lys Tyr Tyr Ser Ile Ala Met Ala Cys Leu Thr
 290 295 300
 Ala Ser Thr Arg Ser Ala Glu Arg Gly Arg Cys Ser Glu
 305 310 315

<210> 9352

<211> 548

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (118)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9352

Ser Asp Tyr Ser Leu Asn Lys Phe Arg Met Asn Lys Leu Leu Ile Met
 1 5 10 15
 Arg Thr His Leu Leu Trp Ile Gly Val Met Thr Ala Ser Ser Leu Trp
 20 25 30
 Leu Ser Gly Cys Thr Gln Glu Glu Lys Tyr Pro Phe Phe Pro Glu Lys
 35 40 45
 Gly Tyr Asp Ser Gly Thr Val Ile Pro Ile Lys Ile Ser Met Ala Glu
 50 55 60
 Asn Gly Glu Tyr Asp Ser Tyr Thr Pro Glu Asn Asp Met Ala Pro Arg
 65 70 75 80
 Tyr Asn Ala Pro Leu Ile Ala Glu Trp Ala Gly Val Gln Thr Leu Ser
 85 90 95
 Arg Thr Arg Thr Lys Glu Ser Pro Glu Tyr Asn Gly Pro Arg Ile Ala
 100 105 110
 Ser Met Glu Leu Thr Xaa Asn Thr Pro Ser Thr Leu Thr Thr Arg Ala
 115 120 125
 Asn Thr Leu Ser Thr Gly Val Tyr Phe Arg Leu Ile Val Phe Arg Lys
 130 135 140
 Ser Gly Asn Asn Tyr Val Phe Gln Ser Ala Ala Asp Tyr Thr Ser Asn
 145 150 155 160
 Gly Ala Ser Ser Pro Val Leu Lys Lys Gly Lys Leu Leu Thr Arg Ser
 165 170 175
 Gly Thr Ile Arg Val Ile Gly Tyr Ser Phe Asn Thr Thr Ala Ala Leu
 180 185 190
 Gly Asp Ile Pro Ala Ser Tyr Thr Tyr Asn Thr Thr Lys Ile Asp Ile
 195 200 205
 Pro Asn Met Asn Asn Asp Phe Met Thr Tyr Asp Ser Gly Asp Ile Ala
 210 215 220
 Asn Val Asn Ser Leu Asn Tyr Asn Leu Pro Val Thr Phe Lys Gln Lys
 225 230 235 240
 Leu Cys Lys Leu Thr Ile Ser Ile Ser Val Thr Gly Phe Thr Ser Asn
 245 250 255
 Thr Ile Ser Gly Cys Thr Gly Val Tyr Val Lys Gln Gly Gly Asn Ser
 260 265 270
 Thr Ser Trp Val Ile Gly Ser Ser Ala Val Ala Ala Asn Thr Ser Asn
 275 280 285
 Thr Ala Ser Phe Asn Pro Asn Thr Asn Gln Thr Thr Thr Ile Arg Met
 290 295 300
 Val Pro Phe Ala Ser Ser Arg Thr Ile Thr Val His Phe Asn Lys Leu
 305 310 315 320
 Thr Val Gly Asn Leu Ile Ala Asn Asn Ala Asp Asn Ile Asp Ile Ala

325 330 335
 Ser Thr Gln Ser Val Gln Leu Lys Glu Gly Met Ser Tyr Thr Met Lys
 340 345 350
 Ile Gln Phe Lys Arg Ser Pro Gly Ile Asn Val Pro Ala Gly Ser Ile
 355 360 365
 Asn Leu Ser Asn Pro Lys Lys Ala Cys Thr Asn Asp Asp Lys Gln Lys
 370 375 380
 Leu Ser Lys Leu Val Phe Ala Asp Gly Asn Leu Lys Ser Thr Gly Ala
 385 390 395 400
 Ser Asn Asn Tyr Val Trp Ala Thr Asn Lys Glu Tyr Gly Tyr Tyr Tyr
 405 410 415
 Gln Trp Lys Lys Asp Tyr Asn Gly Asn Asn Ile Asp Pro Cys Ala Arg
 420 425 430
 Leu Asn Pro Thr Thr Tyr Gly Ser Gly Trp Arg Leu Pro Thr Arg Asn
 435 440 445
 Glu Leu Glu Arg Leu Gly Arg Cys Asn Asn Val Lys Lys Val Ser Asn
 450 455 460
 Gly Val Asn Gly Leu Trp Phe Leu Asn Ala Thr Thr Gly Ile Phe Leu
 465 470 475 480
 Pro Leu Gly Gly Trp Arg Asn Asn Asn Ser Gly Thr Thr Ala Glu Asp
 485 490 495
 Trp Pro Gly Thr Phe Gly Gln Tyr Phe Thr Asp Glu Ser Ile Asn Thr
 500 505 510
 Asn Asp Cys Tyr Arg Leu Asp Ile Ser Pro Gly Glu Gly Lys Thr Asp
 515 520 525
 Val Asn Ser Thr Gln Lys Lys Met Ala Tyr Thr Thr Arg Cys Val Lys
 530 535 540
 Gly Pro Lys Leu
 545

<210> 9353

<211> 88

<212> PRT

<213> B.fragilis

<400> 9353

Thr Leu Asp Ala Asn Ser Tyr Ser Ala Trp Arg Ile Gly Gly Arg Leu
 1 5 10 15
 Ser Phe Lys Asn Glu Thr Leu Ala Met Ile Leu Pro Arg Leu Glu Lys
 20 25 30
 Trp Tyr Gly Gln Lys Ile Asp Cys Pro Gln Lys Thr Ala Asp His Tyr
 35 40 45
 Arg Phe Thr Phe Thr Leu Arg Asn Glu Pro Leu Asp Leu Ile Leu Asn
 50 55 60
 Ile Met Ser His Ser Ala Pro Leu Asn Tyr Lys Leu Ile Ser Asn Asp
 65 70 75 80
 Tyr Tyr Val Leu Glu Glu Leu Lys
 85

<210> 9354

<211> 388

<212> PRT

<213> B.fragilis

<400> 9354

Leu Ile Val Phe Met Arg Lys Cys Asn Met Arg Trp Phe Ser Pro Gln
 1 5 10 15
 Arg Met Lys Lys His Leu Ala Phe Ala Leu Ala Val Ser Leu Val Ala
 20 25 30

Met Val Pro Val Ser Ala Phe Ala Gln Val Leu Lys Ile Ser Met Thr
 35 40 45
 Lys Thr Asn Val Ser Ile Glu Asn Val Leu Arg Glu Leu Glu Lys Gln
 50 55 60
 Ser Asp Tyr Thr Phe Phe Tyr Asn Asp Ile Gln Val Lys Leu Asn Lys
 65 70 75 80
 Lys Val Ser Ile Asn Val Ser Asp Ala Pro Ile Glu Thr Val Leu Asn
 85 90 95
 Glu Val Phe Lys Asn Ser Gly Tyr Thr Tyr Lys Ile Val Asp Asn Gln
 100 105 110
 Ile Val Val Ser Thr Ala Ala Ala Ala Ala Lys Glu Val Gln Ala Thr
 115 120 125
 Gln Gln Gln Lys Gln Arg Lys Ile Ser Gly Val Val Lys Asp Ala Met
 130 135 140
 Gly Glu Ala Ile Ile Gly Ala Ser Val Ile Glu Lys Gly Asn Pro Thr
 145 150 155 160
 Asn Gly Thr Ile Thr Asn Ile Asp Gly Glu Phe Thr Leu Asn Thr Ala
 165 170 175
 Gly Lys Glu Leu Gln Val Thr Tyr Ile Gly Tyr Ile Pro Gln Ala Ile
 180 185 190
 Val Leu Lys Pro Gly Val Asn Ser Tyr Thr Val Thr Met Lys Glu Asp
 195 200 205
 Thr Lys Thr Leu Asp Glu Val Val Val Val Gly Tyr Gly Thr Gln Lys
 210 215 220
 Lys Val Asn Leu Thr Gly Ala Val Ser Ser Val Gly Ala Asp Glu Leu
 225 230 235 240
 Lys Glu Arg Val Asn Thr Asp Val Leu Ala Ser Val Gln Gly Gln Val
 245 250 255
 Pro Gly Val Thr Ile Ile Ser Gly Pro Gly Ser Thr Pro Ser Ile Asn
 260 265 270
 Met Arg Gly Arg Gly Asn Leu Gly Thr Ser Ser Pro Leu Phe Val Ile
 275 280 285
 Asp Gly Ala Ile Ala Asp Ala Ser Phe Phe Ser Ser Leu Asp Pro Asn
 290 295 300
 Ser Ile Glu Ser Ile Ser Phe Leu Lys Asp Ala Ala Ser Ser Ala Ile
 305 310 315 320
 Tyr Gly Ser Arg Ala Ala Tyr Gly Val Val Leu Val Lys Thr Lys Gly
 325 330 335
 Gly Lys Glu Gly Asp Leu Lys Ile Ser Tyr Asp Gly Ser Val Ala Val
 340 345 350
 Lys Met Ala Thr Tyr Thr Pro Asp Val Leu Gly Ser Glu Trp Tyr Ala
 355 360 365
 Arg Leu Ser Asn Glu Ala Ala Val Phe Thr Ala Glu Cys Gln Thr Thr
 370 375 380
 Leu Tyr Cys Pro
 385

<210> 9355

<211> 71

<212> PRT

<213> B.fragilis

<400> 9355

Ile Leu Phe Leu Val Cys Phe Pro Lys Phe Arg Met Asn Leu Ala Phe
 1 5 10 15
 Tyr Phe Ile His Tyr Phe Gln Lys Tyr Arg Val Leu Leu Lys Phe Phe
 20 25 30
 Glu Asn Tyr Gly Val Phe Ser Leu Leu Leu Phe Leu Phe Leu Asp Ser
 35 40 45

Thr Tyr Ile Leu Ile Ile Leu Tyr Phe Leu Ser Phe Cys Ile Phe Tyr
 50 55 60
 Pro Ile Cys Ile Ala Cys Phe
 65 70

<210> 9356
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9356
 His Arg Ala Lys Met Lys Phe Lys Ser Pro Pro Leu Lys Ser Tyr Leu
 1 5 10 15
 Leu Pro Leu Ile Asp Tyr Asn Ser Thr Ile Ile Asn Ile Ile Asn Ser
 20 25 30
 Tyr Tyr Lys His His Ile Ala Ser Arg Phe Arg Ile Tyr Val Ala Asn
 35 40 45
 Lys Ser Tyr Thr Thr Arg Phe Val Cys His Lys Leu Phe Tyr
 50 55 60

<210> 9357
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 9357
 Gly Thr His Thr Met Arg Leu Ser Glu Leu Lys Thr Gly Glu Lys Gly
 1 5 10 15
 Val Ile Val Lys Val Leu Val His Gly Gly Phe Arg Asp Arg Ile Val
 20 25 30
 Glu Met Gly Phe Ile Lys Gly Lys Pro Val Gly Val Leu Leu Asn Ala
 35 40 45
 Pro Leu Thr Asp Arg Ile Ser Tyr Ala Ile Met Gly Tyr Val Ile Ser
 50 55 60
 Leu Arg Arg Gln Glu Ala Asp Met Ile Glu Ile Ile Ser Glu Gln
 65 70 75

<210> 9358
 <211> 790
 <212> PRT
 <213> B.fragilis

<400> 9358
 Ser Cys Gln Thr Lys His Arg Ile Arg Lys Leu Met Asn Gln Ile Leu
 1 5 10 15
 Lys Pro His Asn Leu Pro Pro Ser Phe Gln Gly Arg Gly Trp Lys Ile
 20 25 30
 Ser Ile Lys Ser Trp Trp Lys Pro Ala Leu Phe Leu Leu Leu Val Leu
 35 40 45
 Tyr Ile Phe Cys Leu Pro Ser Gln Leu Phe Thr Ser Pro Tyr Ser Thr
 50 55 60
 Val Val Thr Asp Arg Asn Gly Glu Leu Leu Gly Ala Arg Ile Ala Thr
 65 70 75 80
 Asp Gly Gln Trp Arg Phe Pro Pro Arg Glu Asn Ile Pro Glu Lys Val
 85 90 95
 Ala Thr Cys Leu Ile Glu Phe Glu Asp Arg Gln Phe Tyr His His Trp
 100 105 110
 Gly Val Asn Pro Leu Ala Ile Gly Arg Ala Val Val Gln Asn Leu Lys
 115 120 125

595 600 605
 Glu Ile Cys Arg Gln Ser Gly His Leu Lys Gly Arg Phe Cys Glu Glu
 610 615 620
 Thr Asp Thr Leu Leu Ile Leu Pro Ala Gly Leu Lys Thr Glu Ala Cys
 625 630 635 640
 Pro Tyr His His Pro Val Thr Leu Ser Ala Asn Glu Arg Phe Arg Ile
 645 650 655
 Tyr Glu Asn Cys Ala Asn Ser Glu Pro Val Val Arg Arg Asn Trp Phe
 660 665 670
 Thr Leu Pro Pro Val Trp Glu Trp Tyr Tyr Lys Gln His His Pro Glu
 675 680 685
 Tyr Arg Pro Leu Pro Pro Phe Lys Ser Gly Cys Gly Glu Asp Arg Phe
 690 695 700
 Gln Pro Met Gln Phe Ile Tyr Pro Pro Met Gly Ala Arg Ile His Leu
 705 710 715 720
 Pro Lys Gln Met Asp Gly Ser Lys Gly Gln Leu Thr Val Glu Leu Val
 725 730 735
 His Ser His Pro Asn Thr Thr Ile Tyr Trp His Leu Asp Glu Thr Tyr
 740 745 750
 Leu Thr Gln Thr Gln Asp Phe His Lys Leu Ser Leu Arg Pro Ser Pro
 755 760 765
 Gly Lys His Ser Leu Thr Ala Val Asp Asp Glu Gly Asn Thr Ile Ser
 770 775 780
 Thr Thr Phe Phe Val Glu
 785 790

<210> 9359

<211> 442

<212> PRT

<213> B.fragilis

<400> 9359

Gln Asn Tyr Tyr Leu Cys Asn Met Ile Gln Asn Arg Val Ala Gln Tyr
 1 5 10 15
 Ile Glu Lys Glu Lys Leu Phe Cys Leu Asn Asp Lys Val Leu Val Thr
 20 25 30
 Leu Ser Gly Gly Ala Asp Ser Val Ala Leu Leu Arg Leu Leu Ser
 35 40 45
 Met Gly Tyr Thr Cys Glu Ala Ala His Cys Asn Phe His Leu Arg Asp
 50 55 60
 Lys Glu Ser Asp Arg Asp Glu Ala Phe Val Arg Arg Leu Cys His Glu
 65 70 75 80
 Ser Gly Val Leu Leu His Ile Glu His Phe Asp Thr Thr Gln Tyr Ala
 85 90 95
 Ala Lys Lys His Ile Ser Ile Glu Met Ala Ala Arg Glu Leu Arg Tyr
 100 105 110
 Glu Trp Phe Glu Thr Leu Arg Lys Gln Arg Glu Ala Ser Val Ile Ala
 115 120 125
 Thr Ala His His Lys Asp Asp Ser Val Glu Thr Val Leu Leu Asn Leu
 130 135 140
 Ile Arg Gly Thr Gly Ile Asn Gly Leu Leu Gly Ile Arg Pro Arg Asn
 145 150 155 160
 Gly Asn Ile Val Arg Pro Leu Leu Cys Leu Ser Arg Glu Glu Ile Ile
 165 170 175
 Ala Tyr Leu Gln Tyr Ile Asp Gln Asp Tyr Val Thr Asp Ser Thr Asn
 180 185 190
 Leu Leu Asp Glu Tyr Thr Arg Asn Lys Ile Arg Leu Asn Leu Leu Pro
 195 200 205
 Leu Met Lys Glu Ile Asn Pro Ser Val Lys Glu Ser Ile Ile Arg Thr

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      210              215              220
Thr Asn Tyr Leu Asn Asp Ala Ala Thr Leu Tyr Asn Gln Ser Ile Gly
225              230              235              240
Glu Ala Arg Lys Arg Ile Leu Thr Pro Glu Gly Ile Arg Ile Glu Ala
      245              250              255
Leu Leu Gln Glu Pro Val Pro Glu Ala Ile Leu Phe Glu Val Leu His
      260              265              270
Pro Leu Gly Phe Asn Thr Thr Gln Ile Asp Asn Ile Arg Gln Thr Leu
      275              280              285
Asp Gly Gln Pro Gly Lys Val Phe Leu Gly Lys Gly Trp Arg Val Ile
      290              295              300
Lys Asp Arg Asp Leu Leu Leu Ile Glu Glu Asp Thr Thr Ala Glu Glu
305              310              315              320
Ser Gln Pro Pro Phe Arg Leu Val Met Glu Glu Tyr Asp Tyr Thr Ser
      325              330              335
Glu Phe Ile Ile Pro Lys Asp Lys Asn Thr Ala Cys Phe Asp Ala Asp
      340              345              350
Lys Ile Asn Lys Thr Trp Glu Ile Arg Lys Trp Lys Pro Gly Asp Val
      355              360              365
Phe Ile Pro Phe Gly Met Thr Gly Lys Lys His Val Ser Asp Tyr Leu
370              375              380
Thr Asp Lys Lys Phe Ser Leu Ser Glu Lys Glu Lys Gln Trp Val Leu
385              390              395              400
Cys Phe Gly Glu Gln Ile Ala Trp Leu Ile Gly Glu Arg Thr Asp Asn
      405              410              415
Arg Phe Lys Val Asn Glu Asn Thr Lys Arg Val Ile Ile Val Arg Ile
      420              425              430
Val Ser Glu His Ser Asp Phe Ile Glu Glu
      435              440

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<210> 9360

<211> 182

<212> PRT

<213> B.fragilis

<400> 9360

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Leu Arg Cys Lys Ser His Lys Lys Cys Thr Phe Ala Thr Glu Phe Phe
1      5      10      15
Tyr Gly Gln Ile Met Arg Glu Tyr Ile Ala Asp Asn Gln Asp Ile
      20      25      30
Thr Lys Ala Gly Met Met Phe Leu Leu Ser Lys Gln Lys Glu Val Ser
      35      40      45
Leu Leu Leu Glu Ala Asp Asn Lys Met Glu Leu Val Gln Leu Leu Arg
      50      55      60
Ile His Pro Gln Ala Val Val Ile Leu Asp Tyr Thr Leu Phe Asp Phe
65      70      75      80
Ser Gly Ala Asp Glu Leu Ile Ile Leu Gln Glu Arg Phe Lys Glu Ser
      85      90      95
Asp Trp Leu Leu Phe Ser Asp Glu Leu Ser Ile Gly Phe Leu Arg Gln
      100      105      110
Val Leu Phe Ser Ser Asn Ala Phe Gly Val Val Leu Lys Asp Asn Ser
      115      120      125
Asn Lys Glu Ile Met Thr Ala Leu His Cys Ala Ser Arg Lys Glu Arg
      130      135      140
Ser Ile Cys Asn Asp Val Ser Asn Pro Ala Leu Cys Gly Ser Gly Lys
145      150      155      160
Leu Thr Thr Cys Leu Gly Arg Ala His Val Leu Tyr Arg Met Asn Thr
      165      170      175
Arg Leu Leu His Thr Arg

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180

<210> 9361
 <211> 350
 <212> PRT
 <213> B.fragilis

<400> 9361
 Thr Pro Tyr Arg Gln Leu Pro Arg Ile Ser Glu Arg Leu Lys Ser Thr
 1 5 10 15
 Gly Ser Gln Lys Lys Gly Ala Leu Pro Ile Leu Asn Val Ala Lys Glu
 20 25 30
 Leu Leu Asn Ile Pro Thr Gln Leu His Glu Ile Asn Asp Ile Cys Ala
 35 40 45
 Ile Tyr Cys Ile Phe Ala Lys Leu Lys Val Met Lys Met Asp Leu Lys
 50 55 60
 Lys Glu Val Lys Glu Glu Phe Ile Arg Phe Gln Arg Asn Glu Lys Thr
 65 70 75 80
 Glu Ser Ile Val Tyr Glu Arg Val Pro Phe Ile Glu Lys Asp Glu Ser
 85 90 95
 Thr Arg Lys Val Leu Arg Leu Ile Ser Ala Glu Glu Lys Ala His Tyr
 100 105 110
 Ala Thr Leu Lys Lys Tyr Thr Glu Thr Asp Val Ala Pro Asp Lys Leu
 115 120 125
 Gly Ile Ala Lys Tyr Tyr Trp Leu Ala Arg Ile Leu Gly Ile Thr Phe
 130 135 140
 Ala Ile Lys Leu Met Glu Ser Ser Glu Glu Asn Ala His His Asp Tyr
 145 150 155 160
 Ala Lys Tyr Thr Asp Tyr Pro Asp Leu Arg Gln Leu Ala Asn Glu Glu
 165 170 175
 Glu Val His Glu Gln Lys Leu Ile Gly Leu Ile Asn Glu Ala Arg Leu
 180 185 190
 Glu Tyr Met Gly Ser Val Val Leu Gly Leu Asn Asp Ala Leu Val Glu
 195 200 205
 Phe Thr Gly Ala Leu Ala Gly Phe Thr Leu Ala Leu Ser Asp Ser Arg
 210 215 220
 Leu Ile Ala Leu Thr Gly Ser Ile Thr Gly Ile Ala Ala Ala Leu Ser
 225 230 235 240
 Met Ala Ser Ser Glu Tyr Leu Ser Thr Lys Ser Glu Gly Gly Glu Thr
 245 250 255
 Lys His Pro Ile Lys Ala Ala Ile Tyr Thr Gly Ile Ala Tyr Ile Ile
 260 265 270
 Thr Val Val Ala Leu Val Ala Pro Phe Ile Leu Ile Glu Asn Val Leu
 275 280 285
 Ile Ala Leu Gly Val Met Leu Ala Met Ala Leu Val Ile Ile Ala Leu
 290 295 300
 Phe Asn Tyr Tyr Tyr Ser Val Ala Arg Gly Glu Ser Phe Arg Lys Arg
 305 310 315 320
 Phe Thr Glu Met Ala Val Leu Ser Phe Ser Val Ala Gly Ile Ser Phe
 325 330 335
 Leu Ile Gly Tyr Ala Leu Lys Thr Phe Thr Gly Ile Asp Ala
 340 345 350

<210> 9362
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 9362

```

Tyr Ile Ser Arg Gln Pro Asn Ser Ser Pro Ile Asn Pro Leu Thr Thr
1      5      10      15
Arg Glu Ala Lys Met Pro Val Ser Ser Pro Asp Thr Thr Ile Pro Thr
      20      25      30
Phe Leu Pro Leu Phe Ser Gly Arg Glu Asn Trp Glu Ala Ile Gly Met
      35      40      45
Asn Ile Cys Gly Ile Thr Glu Gln Met Pro Val Arg Ser Glu Ala His
      50      55      60
Arg Met Thr Trp Met Leu Gly Ala Ile Ala Ile Thr Ser Asn Glu Thr
65      70      75      80
Ile Asn Met Glu Lys Leu Val Arg Met Ile Arg Phe Arg
      85      90

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<210> 9363

<211> 299

<212> PRT

<213> B.fragilis

<400> 9363

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Asp Leu Lys Arg Val Ala Leu Gly Lys Arg Arg Thr Ile Asn Val Ala
1      5      10      15
Leu Val Gly Asn Pro Tyr Cys Gly Lys Thr Ser Leu Phe Asn Leu Ala
      20      25      30
Ser Gly Ala His Glu His Val Gly Asn Tyr Ser Gly Val Thr Val Asp
      35      40      45
Ala Lys Glu Gly Tyr Phe Asp Phe Gln Gly Tyr His Phe Lys Ile Val
      50      55      60
Asp Leu Pro Gly Thr Tyr Ser Leu Ser Ala Tyr Thr Pro Glu Glu Ile
65      70      75      80
Tyr Val Arg Arg His Ile Ile Asp Glu Thr Pro Asp Val Ile Ile Asn
      85      90      95
Val Val Asp Ser Ser Asn Leu Glu Arg Asn Leu Tyr Leu Thr Thr Gln
      100      105      110
Leu Ile Asp Met Asn Val Arg Met Val Val Ala Leu Asn Met Tyr Asp
      115      120      125
Glu Leu Glu Ala Ser Gly Asn Thr Leu Asp Tyr Leu Leu Leu Gly Lys
      130      135      140
Leu Phe Gly Val Pro Met Val Pro Thr Val Cys Lys Arg Asn Ile Gly
145      150      155      160
Val Asp Arg Leu Phe His Val Val Ile Asn Leu Tyr Glu Gly Ala Asp
      165      170      175
Phe Ile Asp Lys Lys Gly His Ile His Pro Glu Val Ala Lys Glu Ile
      180      185      190
Met Asp Trp His Gln Ser Leu Pro Asn Phe Lys Asp His Gly Glu His
      195      200      205
Pro Ala Asp Tyr Thr His Gly Lys Glu Pro Val Gly Lys Val Phe Arg
      210      215      220
His Ile His Ile Asn His Gly Pro Asp Leu Glu Lys Ala Ile Asp Ala
225      230      235      240
Val Lys Glu Glu Ile Ser Lys Asn Glu Phe Ile Arg His Lys Tyr Ser
      245      250      255
Thr Arg Tyr Leu Ala Ile Lys Leu Leu Glu Asn Asp Pro Glu Ile Glu
      260      265      270
Arg Phe Ile His Thr Leu Pro Asn Ala Val Glu Val Glu Lys Ser Leu
      275      280      285
His His Gly Ala Gly Arg Ile Ser Ala Val Gln
      290      295

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<210> 9364

<211> 208
 <212> PRT
 <213> B.fragilis

<400> 9364

Thr	Asn	Asn	Ser	Phe	Lys	Pro	Lys	Gln	Lys	Lys	Val	Met	Lys	Lys	Phe
1				5				10						15	
Ile	Ala	Leu	Val	Ala	Leu	Val	Leu	Val	Ser	Ala	Ser	Thr	Leu	Met	Tyr
			20					25					30		
Ala	Gln	Glu	Ser	Gln	Arg	Asp	Ile	Arg	Arg	Ala	Asp	Arg	Lys	Ala	Gln
			35				40					45			
Arg	Asp	Ala	Glu	Arg	Ala	Arg	Leu	Lys	Ala	Glu	Glu	Gln	Ala	Ala	Asp
			50				55					60			
Gln	Val	Ala	Tyr	Gln	Gln	Ala	Val	Gln	Ala	Ile	Lys	Asp	Lys	Gln	Phe
65					70					75					80
Val	Leu	Glu	Ala	Asp	Gln	Val	Ile	Phe	Lys	Arg	Gly	Gln	Thr	Ala	Phe
				85					90					95	
Val	Ser	Ser	Asn	Thr	Asn	Phe	Val	Met	Leu	Asn	Gly	Gln	Arg	Ala	Thr
			100					105					110		
Val	Gln	Val	Ala	Phe	Asn	Thr	Pro	Tyr	Pro	Gly	Pro	Asn	Gly	Ile	Gly
			115					120					125		
Gly	Val	Thr	Val	Asp	Gly	Thr	Thr	Ser	Asp	Val	Lys	Val	Thr	Thr	Asp
			130				135					140			
Lys	Arg	Gly	Asn	Val	Asn	Cys	Asn	Phe	Ser	Val	Gln	Gly	Ile	Gly	Ile
145					150					155					160
Ser	Ala	Gln	Val	Phe	Ile	Thr	Leu	Thr	Asn	Gly	Gly	Asn	Asn	Ala	Thr
				165					170					175	
Val	Thr	Ile	Asn	Pro	Asn	Phe	Asn	Ser	Asn	Thr	Leu	Thr	Leu	Ser	Gly
			180					185					190		
Asn	Leu	Val	Pro	Leu	Asn	Gln	Ser	Asp	Val	Phe	Lys	Gly	Arg	Ser	Trp
			195				200					205			

<210> 9365
 <211> 482
 <212> PRT
 <213> B.fragilis

<400> 9365

Lys	Arg	Lys	Arg	Arg	Ile	Met	Lys	Lys	Ala	Pro	Ser	Pro	Leu	Val	Ser
1					5				10					15	
Leu	Ile	Pro	Leu	Val	Val	Leu	Val	Ile	Met	Leu	Phe	Ala	Thr	Ile	Arg
			20					25					30		
Thr	Phe	Gly	Ser	Asp	Ala	Leu	Ser	Gly	Gly	Ser	Gln	Val	Ser	Leu	Leu
			35				40					45			
Thr	Thr	Thr	Ala	Val	Cys	Ile	Leu	Ile	Gly	Met	Gly	Phe	Tyr	Lys	Ile
			50			55					60				
Gly	Trp	Lys	Asp	Phe	Glu	Leu	Ala	Ile	Thr	Asn	Asn	Ile	Thr	Gly	Val
65					70					75					80
Ser	Thr	Ala	Leu	Ile	Ile	Leu	Leu	Ile	Ile	Gly	Ala	Leu	Ser	Gly	Ala
				85					90					95	
Trp	Met	Ile	Ser	Gly	Val	Val	Pro	Thr	Leu	Ile	Tyr	Tyr	Gly	Val	Gln
			100					105					110		
Ile	Ile	His	Pro	Ser	Phe	Phe	Leu	Thr	Ser	Thr	Cys	Ile	Ile	Cys	Ala
			115				120					125			
Leu	Val	Ser	Val	Met	Thr	Gly	Ser	Ser	Trp	Thr	Thr	Ile	Ala	Thr	Ile
						135					140				
Gly	Ile	Ala	Leu	Met	Gly	Ile	Gly	Lys	Ala	Gln	Gly	Phe	Glu	Glu	Gly
145					150					155					160
Trp	Ile	Ala	Gly	Ala	Ile	Ile	Ser	Gly	Ala	Tyr	Phe	Gly	Asp	Lys	Ile


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                165                170                175
Ser Pro Leu Ser Asp Thr Thr Ile Leu Ala Ala Ser Val Thr Asp Thr
                180                185                190
Pro Leu Phe Arg His Ile Arg Tyr Met Leu Ile Thr Thr Val Pro Ser
                195                200                205
Leu Ile Ile Thr Leu Val Ile Phe Thr Val Ala Gly Leu Ser His Asn
                210                215                220
Ala Gly Ser Thr Glu His Ile Ala Glu Phe Ser Ala Ala Leu Ala Gly
225                230                235                240
Lys Phe His Ile Thr Pro Trp Leu Leu Ile Val Pro Val Val Thr Gly
                245                250                255
Val Leu Ile Ala Arg Arg Val Pro Ser Val Ile Thr Leu Phe Leu Ser
                260                265                270
Ala Ala Leu Ala Gly Ala Phe Ala Val Phe Phe Gln Pro Asp Leu Leu
                275                280                285
Gln Glu Ile Ser Gly Leu Gln Asn Ser Glu Gly Thr Gln Ser Ile Phe
290                295                300
Lys Gly Leu Met Met Thr Leu Tyr Gly Gly Thr Ser Leu Gln Thr Ser
305                310                315                320
Asn Glu Ala Leu Thr Glu Leu Val Ala Thr Arg Gly Met Ala Gly Met
                325                330                335
Met Asn Thr Val Trp Leu Ile Ile Cys Ala Met Cys Phe Gly Gly Ala
                340                345                350
Met Thr Ala Gly Gly Met Leu Gly Ser Ile Thr Ser Val Phe Val Arg
                355                360                365
Phe Met Lys Asn Thr Val Ser Met Val Ala Ser Thr Val Cys Ser Gly
                370                375                380
Ile Phe Leu Asn Leu Ala Thr Ala Asp Gln Tyr Ile Ser Ile Ile Leu
385                390                395                400
Thr Gly Asn Met Phe Arg Asp Ile Tyr Glu Lys Lys Gly Tyr Glu Ser
                405                410                415
Cys Leu Leu Ser Arg Thr Thr Glu Asp Ser Val Thr Val Thr Ser Val
                420                425                430
Leu Ile Pro Trp Asn Thr Cys Gly Met Thr Gln Ala Thr Ile Leu Ser
                435                440                445
Val Pro Thr Leu Val Tyr Leu Pro Tyr Cys Phe Phe Asn Ile Ile Ser
                450                455                460
Pro Leu Met Ser Ile Thr Ile Ala Ala Ile Gly Tyr Lys Ile Val Arg
465                470                475                480
Arg Lys

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<210> 9366

<211> 63

<212> PRT

<213> B.fragilis

<400> 9366

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Pro Ala Ser Ile Cys Gln Ser Asn Arg Arg Tyr Tyr Tyr Ile Cys Ile
1                5                10                15
Ser Ile Gly Ser Leu Gln Ala Arg Ser Ile Ile Tyr Phe Gln Gly Leu
                20                25                30
Tyr Ser Gln Arg Tyr Asn Leu Ser Tyr Lys Glu Phe Thr Ile Cys Thr
                35                40                45
Leu Lys Phe Met Leu Arg Ile Phe Arg Leu Phe Leu Asn Lys Ile
50                55                60

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<210> 9367

<211> 394

<212> PRT

<213> B.fragilis

<400> 9367

```

Leu Cys Ala Met Lys Gln Ile Leu Lys Glu Asn Gly Gly Leu Pro Ala
1      5      10      15
Ser Ile Leu Trp Thr Leu Ala Ile Val Ala Gly Ile Ser Val Ala Asn
20      25      30
Leu Tyr Tyr Asn Gln Pro Leu Leu Asn Met Ile Arg His Glu Leu Gly
35      40      45
Val Ser Glu Phe Glu Thr Asn Leu Ile Ala Met Val Thr Gln Ile Gly
50      55      60
Tyr Ala Leu Gly Leu Leu Phe Ile Val Pro Leu Gly Asp Leu Tyr Gln
65      70      75      80
Arg Lys Arg Ile Ile Leu Thr Ser Phe Ser Ile Leu Ile Val Ser Leu
85      90      95
Leu Val Ile Ala Met Ala Pro Asn Ile His Val Ile Leu Cys Ala Ser
100     105     110
Leu Leu Thr Gly Ile Cys Ser Val Met Pro Gln Ile Phe Ile Pro Ile
115     120     125
Ala Ser Gln Phe Ser Arg Pro Glu Asn Lys Gly Arg Asn Val Gly Ile
130     135     140
Val Val Ser Gly Leu Leu Thr Gly Ile Leu Ala Ser Arg Val Val Ser
145     150     155     160
Gly Phe Ile Gly Glu Leu Phe Gly Trp Arg Glu Met Tyr Tyr Ile Ala
165     170     175
Ala Gly Met Met Leu Ile Cys Gly Met Val Val Met Arg Val Leu Pro
180     185     190
Asp Ile Arg Pro Asn Phe Gln Gly Lys Tyr Ser Asp Leu Met Lys Ser
195     200     205
Leu Leu Ser Leu Leu Lys Gln Tyr Pro Glu Leu Arg Ile Phe Ser Val
210     215     220
Arg Ala Ala Leu Ala Phe Gly Ser Phe Leu Ala Met Trp Ser Cys Leu
225     230     235     240
Ala Phe Lys Met Gly Ser Ala Pro Phe Tyr Ala Asp Ser His Ile Ile
245     250     255
Gly Met Leu Gly Leu Cys Gly Ile Ala Gly Ala Leu Ser Ala Ser Leu
260     265     270
Val Gly Lys Tyr Val Arg Lys Val Gly Val Arg Arg Phe Asn Phe Ile
275     280     285
Gly Cys Gly Leu Ile Leu Ser Ala Trp Leu Leu Leu Phe Ile Gly Glu
290     295     300
Asn Ser Tyr Trp Gly Ile Val Ala Gly Ile Ile Ile Ile Asp Ile Gly
305     310     315     320
Met Gln Cys Ile Gln Leu Ser Asn Gln Thr Arg Ile Phe Glu Leu Cys
325     330     335
Pro Ser Ala Ser Asn Arg Ile Asn Thr Ile Phe Met Thr Thr Tyr Phe
340     345     350
Ile Gly Ala Ser Thr Gly Thr Phe Leu Ala Gly Thr Phe Trp Gln Ala
355     360     365
Phe Gly Trp His Gly Val Ile Gly Thr Gly Val Ala Leu Thr Thr Gly
370     375     380
Ser Leu Leu Ile Thr Phe Phe Ser Lys Arg
385     390

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<210> 9368

<211> 1870

<212> PRT

<213> B.fragilis

<400> 9368

Thr Lys Arg Leu Phe Ala Met Lys Gly Lys Lys Asn Leu Leu Ile Leu
 1 5 10 15
 Phe Ser Cys Val Leu Thr Val Ile Ile Ala Gly Leu Phe Ala Cys Thr
 20 25 30
 Arg Ser Ala Lys Glu Ile Ile Pro Ser Ser Glu Tyr Ala Pro Tyr Val
 35 40 45
 Asn Ala Tyr Thr Gly Gly Val Ile Ser Gln Ser Ser Pro Ile Arg Ile
 50 55 60
 Glu Leu Thr Gln Asp Gln Pro Met Val Asp Leu Asn Asn Glu Leu Lys
 65 70 75 80
 Asp Cys Pro Phe Ser Phe Thr Pro Ser Leu Lys Gly Lys Ala Tyr Trp
 85 90 95
 Val Ser Asn Asn Thr Ile Glu Phe Leu Pro Glu Glu Gly Glu Leu Lys
 100 105 110
 Pro Gly Lys Leu Tyr Gln Gly Ser Phe Gln Leu Gly Asp Phe Val Glu
 115 120 125
 Val Asp Ser Lys Leu Lys Val Phe Asp Phe Ser Phe Arg Val Gln Glu
 130 135 140
 Ser Asn Phe Thr Leu His Thr Ala Pro Leu Glu Ile Ala Ser Ser Ser
 145 150 155 160
 Pro Asp Lys Val Thr Val Lys Gly Glu Ile Arg Phe Ser Asp Lys Met
 165 170 175
 Thr Lys Glu Gln Val Glu Lys Ile Leu Ser Thr Asn Gly Thr Ser Thr
 180 185 190
 Ile Thr Ile Gly Ser Thr Ser Asn Pro Leu Glu Tyr Ser Phe Ile Ile
 195 200 205
 Ser Asn Ile Gln Arg Lys Glu Gln Asp Tyr Asp Leu Lys Ile Thr Ala
 210 215 220
 Asp Gly Glu Pro Val Glu Met Asp Arg Lys Gln Ser Glu Ser Ile Thr
 225 230 235 240
 Ile Pro Ala Lys Asp Ser Phe Arg Phe Leu Ser Ala Glu Arg Ile Ser
 245 250 255
 Gln Pro Glu Asn Gly Ile Gln Ile Val Phe Ser Asp Pro Val Ser Asp
 260 265 270
 Thr Gln Asp Leu Lys Gly Leu Ile Glu Ile Pro Glu Ile Pro Ser Tyr
 275 280 285
 Ile Phe Gln Ile Thr Asp Asn Lys Val Asn Val Tyr Phe Glu Ala Gly
 290 295 300
 Gln Leu Ser Lys Leu Thr Leu Lys Ile His Glu Gly Val Lys Asn Asn
 305 310 315 320
 Gln Gly Lys Ala Leu Gly Ser Ser His Ser Ile Ser Phe Gly Glu Leu
 325 330 335
 Asn Leu Lys Pro Gln Val Glu Ile Ser Ser Ala Gly Ala Ile Ile Pro
 340 345 350
 Asp Ser Lys Asn Leu Val Ile Pro Phe Arg Ala Val Ser Leu Tyr Ala
 355 360 365
 Val Asp Leu Arg Val Ile Arg Ile Phe Glu Asn Asn Val Leu Met Phe
 370 375 380
 Met Gln Asn Asn Ser Leu Ser Ser Ala Asn Glu Leu Arg Arg Ser Gly
 385 390 395 400
 Arg Leu Val Tyr Lys Lys Thr Leu Phe Leu Gly Lys Asp Pro Ser Lys
 405 410 415
 Asp Ile His Lys Trp Glu Asn Tyr Ser Ile Asp Leu Ala Gly Leu Ile
 420 425 430
 His Gln Glu Pro Gly Ala Ile Tyr Arg Val Ile Leu Ser Phe Lys Gln
 435 440 445
 Glu Tyr Ser Ala Tyr Pro Cys Gly Ser Gly Glu Asn Pro Lys Met Gln

450		455		460
Phe Ser Glu Glu Thr Glu Ser Leu Thr Lys Val Lys Ser Asp Ile Leu				
465		470		475
Ser Glu Glu Asp Glu Ala Val Trp Asp Lys Pro Glu Thr Tyr Tyr Tyr				480
	485		490	495
Phe Ser Gly Asn Glu Asn Ala Asp Trp Ser Gln Tyr Arg Trp Asp Glu				
	500		505	510
Arg Asp Asn Pro Cys His Pro Ser Tyr Tyr Met Thr Ser Asp Arg Ile				
	515		520	525
Ala Ala Cys Asn Val Leu Ala Ser Asn Ile Gly Met Ile Val Lys Arg				
	530		535	540
Asn Ser Met Asn Lys Leu Trp Ile Ala Val Ser Asn Ile Leu Asp Thr				
545		550		555
Lys Pro Val Glu Lys Ala Lys Val Ile Val Tyr Asn Phe Gln Leu Gln				560
	565		570	575
Pro Ile Gly Glu Ala Leu Thr Asp Ala Glu Gly Phe Ala Ile Ile Glu				
	580		585	590
Thr Lys Gly Thr Pro Phe Ile Val Val Ala Glu Ser Glu Lys Gln Lys				
	595		600	605
Ala Tyr Val Lys Val Ala Asp Gly Glu Glu Gln Ser Thr Thr Arg Phe				
610		615		620
Asp Val Gly Gly Lys Asp Ile Gln Lys Gly Leu Lys Gly Phe Val Tyr				
625		630		635
Gly Glu Arg Gly Val Trp Arg Pro Gly Asp Thr Leu His Ile Ser Phe				640
	645		650	655
Val Leu Glu Asp Arg Asn Lys Arg Ile Pro Asp Lys His Pro Val Thr				
	660		665	670
Leu Glu Leu Tyr Asn Pro Arg Gly Gln Phe Tyr Ser Lys Gln Ile Ser				
	675		680	685
Thr Asn Gly Leu Asn Gly Phe Tyr Thr Phe Lys Val Pro Thr Gln Pro				
690		695		700
Glu Asp Pro Thr Gly Leu Trp Asn Ala Tyr Val Lys Val Gly Gly Thr				
705		710		715
Ala Phe His Lys Ser Leu Arg Val Glu Thr Ile Lys Pro Asn Arg Leu				
	725		730	735
Lys Ile Asn Leu Lys Leu Pro Gly Glu Ile Leu Lys Ala Ala Asp Lys				
	740		745	750
Glu Val Gln Ala His Leu Ser Ser Ala Trp Leu Thr Gly Ala Thr Ala				
	755		760	765
Ser Arg Leu Lys Ala Lys Val Glu Met Ser Leu Ser Lys Val Asn Thr				
770		775		780
Gln Phe Lys Asn Tyr Glu Thr Tyr Ile Phe Asn Asn Pro Ala Thr Glu				
785		790		795
Phe Thr Ser Ile Arg Thr Asp Ile Phe Asn Gly Thr Leu Asp Glu Asn				
	805		810	815
Gly Asn Thr Gly Phe Met Leu Lys Leu Pro Thr Ser Glu Asn Ala Pro				
	820		825	830
Gly Met Leu Arg Ala Asn Ile Thr Thr Gln Val Phe Glu Pro Gly Gly				
	835		840	845
Asp Ala Ser Ile Gln Thr Leu Ser Val Pro Tyr Ser Pro Phe Pro Ser				
	850		855	860
Tyr Val Gly Ile Asn Leu Asn Gln Pro Gln Gly Arg Tyr Ile Glu Thr				
865		870		875
Asp Lys Glu His Ile Phe Asp Ile Val Thr Val Asn Ser Asp Gly Lys				
	885		890	895
Pro Val Asn Arg Ser Gly Leu Glu Tyr Lys Ile Tyr Arg Ile Ser Trp				
	900		905	910
Ser Trp Trp Trp Glu Asn Asp Asn Glu Ser Phe Glu Thr Tyr Ile Asn				
915		920		925

Ser Ser Ser Ile Thr Pro Val Ala Thr Gly Arg Leu Asn Thr Thr Gly
 930 935 940
 Gly Lys Gly Gln Phe Ser Phe Lys Val Asn Tyr Pro Asp Trp Gly Arg
 945 950 955 960
 Tyr Leu Val Tyr Val Lys Asp Arg Glu Ser Gly His Ala Thr Gly Gly
 965 970 975
 Thr Ile Tyr Val Asp Trp Pro Asp Trp Arg Gly Arg Ser Asn Lys Ser
 980 985 990
 Asp Pro Ser Gly Ile Lys Met Leu Ser Phe Ser Ile Asp Lys Asp Ser
 995 1000 1005
 Tyr Glu Pro Gly Glu Thr Val Thr Ala Ile Leu Pro Ala Ser Ala Gly
 1010 1015 1020
 Gly Arg Ala Leu Val Thr Leu Glu Asn Gly Ser Ser Val Ile Gln Arg
 1025 1030 1035 1040
 Glu Trp Ile Glu Val Ser Gly Lys Glu Asp Thr Lys Tyr Gln Phe Lys
 1045 1050 1055
 Val Thr Pro Glu Met Ala Pro Asn Val Tyr Leu His Ile Ser Leu Leu
 1060 1065 1070
 Gln Pro His Ala Gln Thr Val Asn Asp Leu Pro Ile Arg Met Tyr Gly
 1075 1080 1085
 Ile Met Pro Val Phe Val Thr Asp Lys Gln Thr Val Leu Glu Pro Gln
 1090 1095 1100
 Ile Lys Met Pro Glu Val Leu Arg Pro Glu Gln Val Phe Asn Leu Thr
 1105 1110 1115 1120
 Ile Asn Glu Lys His Gly Arg Pro Met Thr Tyr Thr Leu Ala Ile Val
 1125 1130 1135
 Asp Asp Gly Leu Leu Asp Leu Thr Asn Phe Lys Thr Pro Asp Pro Trp
 1140 1145 1150
 Asn Asn Phe Tyr Ala Arg Glu Ala Leu Gly Ile Arg Thr Trp Asp Met
 1155 1160 1165
 Tyr Asp Asp Val Leu Gly Ala Thr Ala Gly Ser Tyr Gly Ser Met Phe
 1170 1175 1180
 Ser Thr Gly Gly Asp Glu Thr Leu Lys Pro Ser Asp Gln Lys Ala Asn
 1185 1190 1195 1200
 Arg Phe Lys Pro Val Val Lys Phe Ile Gly Pro Phe Ser Ile Gly Lys
 1205 1210 1215
 Gly Lys Ser Arg Thr His Gln Ile Thr Leu Pro Met Tyr Val Gly Ser
 1220 1225 1230
 Val Arg Ala Met Ile Val Ala Gly Gln Asp Gly Ala Tyr Gly Asn Ala
 1235 1240 1245
 Glu Lys Thr Val Pro Val Arg Thr Pro Leu Met Ile Leu Ser Thr Leu
 1250 1255 1260
 Pro Arg Val Leu Ser Thr Asn Glu Glu Ile Glu Val Pro Val Asn Val
 1265 1270 1275 1280
 Phe Ala Leu Glu Asn Asn Val Lys Asn Val Asn Val Ser Ile Gln Ala
 1285 1290 1295
 Ser Gly Ala Gly Ile Gln Val Thr Gly Asn Lys Gln Gln Thr Leu Thr
 1300 1305 1310
 Phe Thr Gln Thr Gly Asp Arg Leu Ile Phe Phe Lys Leu Lys Thr Gly
 1315 1320 1325
 Thr Lys Thr Gly Lys Ala Thr Ile His Leu Thr Ala Asn Gly Asn Gly
 1330 1335 1340
 Gln Asn Thr Lys Glu Thr Ile Glu Ile Glu Val Arg Asn Pro Asn Pro
 1345 1350 1355 1360
 Val Val Thr Leu Arg Glu Ser Gln Trp Val Glu Thr Gly Lys Ser Glu
 1365 1370 1375
 Glu Leu Asn Tyr Gln Leu Ser Ser Gly Ser Glu Gly Asn Ser Ile Gln
 1380 1385 1390
 Leu Glu Val Ser Arg Ile Pro Ser Val Asp Ile Ser Arg Arg Phe Asp

1395	1400	1405
Phe Leu Tyr Asn Tyr Gln His Asn Cys Thr Glu Gln Leu Thr Ser Lys		
1410	1415	1420
Ala Leu Pro Leu Leu Phe Ile Ser Gln Phe Lys Thr Val Asp Asn Glu		
1425	1430	1435
Glu Leu Glu Lys Ile Lys Val Asn Val Gln Glu Ala Ile Arg Gln Leu		1440
1445	1450	1455
Tyr Gly Arg Gln Leu Pro Asn Gly Gly Phe Val Tyr Trp Pro Gly Asn		
1460	1465	1470
Ala Ser Ala Asp Glu Trp Ile Thr Ser Tyr Ala Gly Met Phe Leu Ile		
1475	1480	1485
Leu Ala Gln Glu Lys Gly Tyr Ala Val Asn Ser Asn Val Leu Asn Lys		
1490	1495	1500
Trp Lys Arg Phe Gln Arg Ala Ala Ala Gln Asn Trp Gln Pro Val Ala		
1505	1510	1515
Gln Glu Gln Ser Trp Trp Tyr Trp Gln Ala Asp Phe Gln Gln Ala Phe		
1525	1530	1535
Arg Leu Tyr Thr Leu Ala Met Ala Gly Ala Pro Glu His Gly Ala Met		
1540	1545	1550
Asn Arg Met Lys Glu Leu Pro Thr Leu Ser Gln Gln Ala Lys Trp Arg		
1555	1560	1565
Leu Ala Ala Ala Tyr Ala Leu Asn Gly Lys Glu Lys Ala Ala Gly Glu		
1570	1575	1580
Leu Val Phe Ser Ala Lys Thr Thr Val Glu Pro Tyr Ser Ser Asn Asn		
1585	1590	1595
Tyr Val Tyr Gly Ser Ser Asp Arg Asp Glu Ala Met Ile Leu Glu Thr		
1605	1610	1615
Leu Leu Leu Met Asn Arg Gln Arg Glu Ala Met Glu Gln Ala Lys Ile		
1620	1625	1630
Val Ser His Asn Leu Thr Arg Glu Thr Trp Phe Ser Thr Gln Ser Thr		
1635	1640	1645
Ala Phe Ser Leu Met Ala Met Gly Arg Leu Ala Glu Lys Leu Ser Gly		
1650	1655	1660
Thr Leu Asp Phe Ser Trp Thr Leu Asn Gly Lys Gln Gln Pro Ala Val		
1665	1670	1675
Lys Ser Ala Lys Ala Val Tyr Glu Thr Pro Ile Ser Thr Ser Ser Arg		
1685	1690	1695
Glu Gly Lys Val Ile Leu Lys Asn Asn Gly Lys Gly Ala Leu Asn Ala		
1700	1705	1710
Asp Leu Ile Thr Arg Thr Gln Leu Leu Asn Asp Thr Leu Pro Pro Ile		
1715	1720	1725
Ala Asn Asn Leu Arg Ile Ser Val Lys Tyr Val Asp Asn Asn Gly Ser		
1730	1735	1740
Pro Ile Asp Thr His Ser Leu His Gln Gly Thr Asp Phe Met Ala Val		
1745	1750	1755
Val Thr Val Ala Asn Thr Ser Gly Thr Thr Asp Tyr Thr Asn Leu Ala		
1765	1770	1775
Leu Thr His Ile Ile Pro Ala Gly Trp Glu Ile Phe Asn Glu Arg Met		
1780	1785	1790
Thr Gly Gln Ile Ser Thr Ser Ala Pro Tyr Ser Tyr Gln Asp Ile Arg		
1795	1800	1805
Asp Asp Arg Ile Leu Thr Tyr Phe Asn Leu Gln Gln Gly Gln Ala Lys		
1810	1815	1820
Thr Phe Thr Val Arg Leu Gln Ala Thr Tyr Ser Gly Asp Phe Val Met		
1825	1830	1835
Pro Ala Ile Gln Cys Glu Ala Met Tyr Asp Ala Asn Val Gln Ala Arg		
1845	1850	1855
Thr Gln Ala Gly Arg Thr Lys Val Val Arg Gln Ser Ile Glu		
1860	1865	1870

<210> 9369
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 9369

Tyr	Leu	Val	Ser	Glu	Glu	Cys	Ser	Ser	Phe	Phe	Tyr	Leu	His	Asn	Ser
1				5					10					15	
Asp	Phe	Asn	Met	Phe	Gly	Lys	Lys	Lys	Asn	Glu	Asp	Tyr	Ser	Val	Lys
			20					25					30		
Thr	Val	Lys	Val	Gly	Val	Asp	Lys	Leu	Thr	Thr	Ile	Ala	Leu	Gly	Thr
		35					40					45			
Met	Val	Lys	Gly	Thr	Ile	Thr	Val	Glu	Gly	Asp	Leu	Arg	Leu	Asp	Gly
		50				55				60					
Ile	Ile	Glu	Gly	Asn	Val	Ser	Cys	Arg	Gly	Lys	Val	Val	Ile	Gly	Pro
65				70					75					80	
Gln	Gly	Arg	Ile	Lys	Gly	Asn	Val	Thr	Cys	Thr	Gly	Ala	Val	Leu	His
			85					90					95		
Gly	Met	Leu	Gln	Gly	Asp	Ile	Gln	Val	Ala	Glu	Asp	Leu	Ile	Met	Lys
			100				105						110		
Ser	Gly	Cys	Thr	Met	Asn	Gly	Asp	Val	Tyr	Thr	Cys	Lys	Leu	Glu	Ile
		115				120					125				
Glu	Ser	Lys	Ala	Arg	Phe	Asn	Gly	Thr	Cys	Asn	Thr	Thr	Glu	Lys	Asp
	130					135				140					
Thr	Leu	Val	Thr	Ser	Gln	Val	Val	Lys	Pro	Glu	Thr	Val	Asp	Thr	Glu
145					150					155					160
Lys															

<210> 9370
 <211> 421
 <212> PRT
 <213> B.fragilis

<400> 9370

Ser	Glu	Leu	Phe	Met	Arg	Lys	Lys	Ser	Met	Phe	Leu	Trp	Ser	Leu	Leu
1				5					10					15	
Ala	Ala	Met	Thr	Met	Ser	Ala	Cys	Ser	Glu	His	Asn	Glu	Leu	Pro	Ser
			20					25				30			
Gly	Glu	Val	Pro	Gly	Gly	Asn	Ser	Lys	Ala	Asn	Phe	Ile	Val	Lys	Leu
		35				40					45				
Asn	Phe	Glu	Gly	Thr	Ser	Met	Glu	Gln	Gly	Gly	Lys	Thr	Arg	Ala	Ala
	50					55				60					
Gln	Ser	Thr	Ala	Val	Pro	Glu	Thr	Ser	Trp	Ser	Asn	Ile	Arg	Gln	Val
65				70					75					80	
Gln	Ile	Leu	Leu	Tyr	Asp	Ala	Ser	Asn	Ile	Val	Arg	Phe	Ser	Asp	Val
			85					90				95			
Val	Thr	Pro	Thr	Ala	Gly	Asn	Thr	Thr	Phe	Thr	Tyr	Thr	Asp	Val	Pro
			100				105					110			
Ala	Gly	Thr	Tyr	Thr	Met	Val	Ala	Ile	Ala	Asn	Ala	Lys	Ser	Ser	Ala
		115				120					125				
Asp	Ala	Ile	Asn	Thr	Tyr	Leu	Asp	Gly	Gly	Thr	Thr	Pro	Val	Glu	Trp
	130					135				140					
Gly	Met	Trp	Asn	Val	Arg	Gln	Lys	Gln	Val	Gln	Asn	Met	Val	Met	Lys
145					150				155						160
Tyr	Lys	Thr	Gly	Thr	Phe	Pro	Ala	Phe	Cys	Ser	Ala	Ala	Leu	Ala	Gly
			165					170				175			
Asn	Thr	Ala	Tyr	Thr	Glu	Pro	Ala	Glu	Ile	Phe	Met	Gly	Ala	Val	Ser

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      180              185              190
Asn Val Val Ile Ser Ser Asp Ala Thr Ala Thr Pro Ser Pro Ile Ala
      195              200              205
Leu Lys Arg Glu Val Ser Leu Met Arg Val Arg Leu Asn Val Lys Asp
      210              215              220
Lys Glu Gly Asn Thr Asn Asn Glu Asn Thr Ala Lys Gly Val Asp Phe
      225              230              235              240
Thr Gln Asp Ala Ser Ile Met Ile Tyr Arg Leu Pro Asp Tyr Leu Lys
      245              250              255
Val Met Ala Gly Asn Asp Gly Gly Val Ser Ala Thr Ser Thr Ala Thr
      260              265              270
Asn Ile Leu Ser Ile Ser Asp Gly Glu Val Phe Lys Thr Ala Glu Pro
      275              280              285
Gly Ala Gly Tyr Asn Pro Gly Gly Met Ile Leu Asn Gly Asn Phe Thr
      290              295              300
Met Trp Arg Asp Val Val Val Phe Pro Asn Asn Gly Gly Arg Val Asn
      305              310              315              320
Asp Ser Ala Thr Thr Gly Thr Ala Asp Arg Gln Arg Gln Tyr Phe Ile
      325              330              335
Val Val Ser Gly Arg Gly Lys Ala Gly His Ile Leu Gly Asp Gly Thr
      340              345              350
Ala Leu Pro Ser Asp Ala Thr Val Trp Ser Gly Val Val Lys Glu
      355              360              365
Asn Phe Val Pro Asn Val Ile Arg Glu Val Asn Leu Thr Leu Arg Thr
      370              375              380
Gly Gly Ser Thr Thr Val Pro Val Thr Pro Thr Glu Tyr Gly Gly Leu
      385              390              395              400
Thr Ile Thr Val Gly Ala Pro Thr Pro Trp Asp Ser Asn Ile Val Asn
      405              410              415
Ser Asp Ile Ile Met
      420

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<210> 9371

<211> 386

<212> PRT

<213> B.fragilis

<400> 9371

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Glu Tyr Ser Phe Tyr Leu Leu Leu Leu Pro Ile Leu Thr Ile Phe Ala
1      5      10      15
Leu Arg Leu Lys Thr Lys Val Met Gly Lys Glu Lys Ile Ile Leu Thr
      20      25      30
Gly Asp Arg Pro Thr Gly Lys Leu His Ile Gly His Tyr Val Gly Ser
      35      40      45
Leu Lys Arg Arg Val Glu Leu Gln Asn Ser Gly Ser Phe Asp Lys Thr
      50      55      60
Phe Ile Phe Ile Ala Asp Ala Gln Ala Leu Thr Asp Asn Ile Asp Asn
      65      70      75      80
Pro Glu Lys Val Arg Gln Asn Val Ile Glu Val Ala Leu Asp Tyr Leu
      85      90      95
Ala Cys Gly Leu Asp Pro Glu Lys Ser Thr Ile Phe Ile Gln Ser Gln
      100      105      110
Ile Pro Glu Leu Cys Glu Leu Thr Phe Tyr Tyr Met Asp Leu Val Thr
      115      120      125
Val Ser Arg Leu Gln Arg Asn Pro Thr Val Lys Thr Glu Ile Gln Met
      130      135      140
Arg Asn Phe Glu Thr Ser Ile Pro Val Gly Phe Phe Thr Tyr Pro Ile
      145      150      155      160
Ser Gln Ala Ala Asp Ile Thr Ala Phe Arg Ala Thr Thr Val Pro Val

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165 170 175
 Gly Glu Asp Gln Glu Pro Met Ile Glu Gln Ala Arg Glu Ile Val Arg
 180 185 190
 Arg Phe Asn Tyr Ile Tyr Gly Glu Thr Leu Val Glu Pro Glu Ile Leu
 195 200 205
 Leu Pro Asp Asn Ala Ala Cys Leu Arg Leu Pro Gly Thr Asp Gly Lys
 210 215 220
 Ala Lys Met Ser Lys Ser Leu Gly Asn Cys Ile Tyr Leu Ala Glu Glu
 225 230 235 240
 Ala Asp Glu Ile Gln Lys Lys Val Met Ser Met Phe Thr Asp Pro Asp
 245 250 255
 His Leu Arg Val Gln Asp Pro Gly Lys Ile Glu Gly Asn Thr Val Phe
 260 265 270
 Thr Tyr Leu Asp Ala Phe Cys Arg Pro Glu His Phe Glu Arg Tyr Leu
 275 280 285
 Pro Asp Tyr Pro Asn Leu Asn Glu Leu Lys Ala His Tyr Gln Arg Gly
 290 295 300
 Gly Leu Gly Asp Val Lys Val Lys Arg Phe Leu Asn Ser Ile Met Gln
 305 310 315 320
 Glu Glu Leu Glu Pro Ile Arg Asn Arg Arg Lys Glu Phe Glu Lys Asp
 325 330 335
 Ile Pro Ala Ile Tyr Glu Met Leu Arg Lys Gly Cys Glu Val Ala Arg
 340 345 350
 Ala Ala Ala Ala Asp Thr Leu Ser Asp Val Arg Lys Ala Met Lys Ile
 355 360 365
 Asn Tyr Phe Asp Asp Ala Glu Leu Ile Asn Glu Gln Val Lys Arg Phe
 370 375 380
 Asn Lys
 385

<210> 9372

<211> 399

<212> PRT

<213> B.fragilis

<400> 9372

Leu Leu Arg Tyr Met Lys Lys Ile Leu Met Leu Leu Ala Leu Ala Gly
 1 5 10 15
 Val Thr Ser Val Ala Ser Ala Gln Gln Thr Thr Ile Thr Gly Tyr Glu
 20 25 30
 Val Ile Gln Val Gln Asp Lys Tyr Gln Val Ile Thr Asn Pro Phe Trp
 35 40 45
 Asp Asn Trp Phe Phe Ser Ile Gly Gly Gly Ala Glu Ala Leu Phe Gly
 50 55 60
 Asp Asn Asp His Val Gly Lys Phe Arg Asp Arg Ile Ser Pro Thr Leu
 65 70 75 80
 Asn Val Ala Val Gly Lys Trp Phe Thr Pro Gly Leu Gly Leu Arg Leu
 85 90 95
 Gln Tyr Ser Gly Leu Gln Gly Arg Gly Phe Ala Gly Ser Glu Thr Ala
 100 105 110
 Asp Phe Val Lys Ser Gly Lys Leu Ala Asn Gly Tyr Tyr Lys Gln Lys
 115 120 125
 Phe Asn Tyr Met Asn Leu His Gly Asp Val Met Phe Asn Leu Asn Ala
 130 135 140
 Leu Phe Gly Gly Tyr Asn Ser His Arg Val Tyr Glu Ile Ile Pro Tyr
 145 150 155 160
 Leu Gly Ala Gly Phe Thr His Ser Tyr Ser Lys Pro His Arg Glu Ala
 165 170 175
 Phe Ala Met Asn Ala Gly Ile Ile Asn Arg Phe Arg Val Ser Ser Ala

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      180              185              190
Val Asp Ile Asn Ile Glu Ile Gly Gly Met Leu Ala Glu Asp Lys Phe
      195              200              205
Asp Gly Glu Ile Gly Gly Lys His Gly Tyr Asp Gly Val Ala Ser Leu
      210              215              220
Thr Ala Gly Leu Thr Tyr Arg Phe Pro Ala Arg Gly Phe Ala Arg Pro
      225              230              235              240
Met Pro Gln Ile Ile Ser Glu Ile Glu Leu Ala Asn Met Arg Arg Gln
      245              250              255
Met Asn Asp Met Ala Ala Ala Asn Gln Ser Leu Gln Gln Gln Leu Val
      260              265              270
Asp Ala Gln Asn Gln Pro Val Ala Glu Val Ala Glu Gln Val Val Val
      275              280              285
Thr Asp Ala Asn Ile Ala Pro Arg Thr Val Phe Phe Thr Ile Gly Ser
      290              295              300
Ser Glu Leu Ser Pro Arg Glu Glu Met Asn Leu Ser Tyr Leu Ala Ala
      305              310              315              320
Lys Met Lys Glu Phe Pro Asp Thr Gln Tyr Thr Val Tyr Gly Tyr Ala
      325              330              335
Asp Ser Ala Thr Gly Thr Pro Ala Phe Asn Lys Glu Leu Ser Gln Lys
      340              345              350
Arg Ala Gln Ala Val Val Asn Ala Leu Val Lys Lys Tyr Gly Val Asp
      355              360              365
Ser Ser Arg Leu Lys Val Asp Ala Gly Gly Gly Val Asp Lys Phe Gly
      370              375              380
Lys Pro Ile Tyr Leu Asn Arg Val Val Leu Val Glu Ser Val Lys
      385              390              395

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<210> 9373
 <211> 62
 <212> PRT
 <213> B.fragilis

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<400> 9373
Val Asn Tyr Lys Thr Gly Arg Lys Lys Asp Gly Lys Met Ile Val Tyr
1      5      10
Asn His Lys Lys Gly Glu Lys Pro Phe Ile Gly Phe Ser Pro Leu Ser
20     25     30
Tyr Tyr Leu Ile Val Ala Asn Arg Ile Ile Tyr Ile Pro Ala Ser Ser
35     40     45
Leu Ser Glu Tyr Leu Pro Val Ser Asp Arg Arg Met Pro Arg
50     55     60

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<210> 9374
 <211> 304
 <212> PRT
 <213> B.fragilis

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<400> 9374
Asn Met Arg Lys Asn Arg Leu Leu Ile Val Leu Phe Thr Gly Val Ala
1      5      10      15
Val Leu Leu Ser Leu Ala Ser Cys Thr Tyr Asp Tyr Phe Glu Asp Glu
20     25     30
Thr Asn Tyr Gln Val Phe Val Pro Glu Val Leu Asn Lys Thr Val Ser
35     40     45
Asp Cys Arg Val Leu Val Tyr Asn Asp Ala Gly Thr Leu Val Gly Ala
50     55     60
Arg Tyr Ala Thr Ser Pro Trp Asp Lys Asp Pro Arg Met Glu Ala Gly
65     70     75     80

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Leu Phe Ser Phe Arg Leu Thr Pro Gly Glu Tyr Lys Val Tyr Cys Tyr
 85 90 95
 Thr Asn Thr Asp Ser Leu Thr Phe Val Asp Gly Gln His Leu Asp Ala
 100 105 110
 Ser Ala Phe Ile Leu Lys Ser Ser Thr Gly Pro Asn Arg Tyr Val
 115 120 125
 Gln Leu Ser Asp Ile Leu Phe Gln Lys Phe Val Pro Ala Ile Val His
 130 135 140
 Pro Gly Ile Leu Gln Thr Asp Thr Ala Ala Leu Glu Arg Tyr Thr Gly
 145 150 155 160
 Arg Ile Thr Val Arg Phe Lys Lys Phe Pro Gly Asp Val Ser His Ile
 165 170 175
 Lys Lys Val Gln Leu Leu Ala Glu Gly Ala Pro Val Met Gln Tyr Leu
 180 185 190
 Lys Asn Asp Thr Leu Thr Gly Arg Leu Thr Pro Glu Asp Lys Met Phe
 195 200 205
 His Phe Gly Thr Leu Pro Val Gln Glu Lys Ala Asp Val Leu Glu Val
 210 215 220
 Asp His Arg Phe Ile Pro Ser Val Glu Asn Glu Pro Met Arg Leu Asn
 225 230 235 240
 Tyr Thr Phe Leu Asp Glu Asn Gly Ala Val Val Asn His Leu Pro Val
 245 250 255
 Glu Val Thr Glu Arg Glu Thr Gly Leu Pro Leu Arg Leu Leu His Gly
 260 265 270
 Lys Arg Ile Ile Ile Glu Ile Glu Ser Tyr Thr Val Ile Lys Ile Ser
 275 280 285
 Val Val Gly Trp Asn Glu Asp Ile Glu Ser Gly Asp Thr Asp Met Glu
 290 295 300

<210> 9375

<211> 529

<212> PRT

<213> B.fragilis

<400> 9375

Lys Val Ala Glu Met Arg Lys Lys Lys Ile Gln Ile Leu Leu Ser Ala
 1 5 10 15
 Ala Ala Phe Leu Phe Leu Met Gly Gly Thr Met Pro Ser Val Ala Gln
 20 25 30
 Glu Arg Lys Ile Gly Arg Val Glu Arg Arg Ala Asp Arg Asn Phe Ile
 35 40 45
 Arg Gln Lys Phe Asp Lys Ala Met Ala Gln Tyr Glu Thr Ala Ile Arg
 50 55 60
 Arg Glu Lys Asp Glu Ala Gly Gln Ala Ala Leu His Leu Lys Thr Ala
 65 70 75 80
 Arg Leu Tyr Phe Met Val Arg Glu Tyr Gly Arg Ala Ser Glu His Tyr
 85 90 95
 Asp Lys Ala Met Ser Leu Arg Pro Asp Leu Leu Gly Val Asp Asp Val
 100 105 110
 Cys Asp Tyr Val Asp Ala Leu Arg Phe Gln Gly Gln Ala Arg Lys Ala
 115 120 125
 Glu Ala Ile Cys Leu Asp Asn Ala Tyr Lys Asp Ile Tyr Ser Arg Tyr
 130 135 140
 Gln Arg Tyr Gln Asn Thr Leu Gln Ala Leu Ala Met Arg His Ser Val
 145 150 155 160
 Gln Glu Asp Pro Gly Phe Ser Ala Lys Arg Leu Leu Leu Asn Thr Ser
 165 170 175
 Asn Ala Glu Phe Trp Val Gly Asn Tyr Gly Glu Gln Pro Phe Tyr Ala
 180 185 190

Ile Ser Tyr Ser Lys Phe Asn Asp Pro Gly Lys Leu Phe Phe His Arg
 195 200 205
 Thr His Tyr Tyr Ala Leu Asp Glu Pro Gly Glu Thr Gly Val Glu Thr
 210 215 220
 Gln Lys Pro Pro Arg Tyr Tyr Gly Tyr Phe Arg Lys Ile Pro Ala Asp
 225 230 235 240
 Leu Gln Asn Gly Pro Val Thr Phe Ser Pro Asp Met Lys Ser Met Val
 245 250 255
 Ala Thr Val Ile Glu Tyr Asp Lys Glu Lys Thr Thr Val Glu Met Ala
 260 265 270
 Asn Arg Lys Leu Arg Pro Phe Arg Thr Lys Leu Phe Tyr Ser Val Leu
 275 280 285
 Lys Asn Lys Lys Lys Arg Phe Thr Lys Tyr Val Pro Ala Phe Pro Gln
 290 295 300
 Glu Glu Met Ser Ser Tyr Ala His Pro Tyr Leu Phe Asn Glu Gly Lys
 305 310 315 320
 Ser Leu Leu Phe Thr Ser Asp Met Pro Gly Gly Tyr Gly Gly Phe Asp
 325 330 335
 Leu Tyr Val Val His Trp Asp Glu Glu Ala Gln Ala Trp Gly Thr Pro
 340 345 350
 Val Asn Leu Gly Pro Asp Val Asn Thr Glu Gly Asp Glu Ile Phe Pro
 355 360 365
 Val Ile Tyr Lys Gly Arg Leu Ile Phe Ser Ser Asn Gly Leu Pro Gly
 370 375 380
 Phe Gly Gly Tyr Asp Leu Phe Ser Ala Tyr Tyr Asp Lys Asp Gly Val
 385 390 395 400
 Ile Pro Gly Ser Ile Ser His Phe Pro Tyr Pro Val Asn Ser Val Phe
 405 410 415
 Asn Asp Tyr Tyr Met Cys Pro Leu Asp Leu Arg Thr Ala Tyr Phe Val
 420 425 430
 Ser Asp Arg Glu Met Ala Ser Arg Asp Asp Ile Tyr Tyr Leu Arg Thr
 435 440 445
 Val Glu Asp Leu Gly Thr Gln Gln Gly Met Pro Phe Tyr Gly Met Ser
 450 455 460
 Glu Glu Asn Ala Ile Leu Gly Gly Ala Leu Leu Leu Asn Gly Thr Thr
 465 470 475 480
 Glu Thr Val Ser Pro Glu Ser Val Thr Leu Lys Gln Tyr Ala Pro Glu
 485 490 495
 Gly Leu Leu Met Thr Leu Tyr Phe Asp Phe Asp Ser Asp Glu Leu Thr
 500 505 510
 Asp Glu Cys Leu His His Gly Ala Gly Arg Ile Asp Gly Cys Ser Ala
 515 520 525
 Ile

<210> 9376

<211> 332

<212> PRT

<213> B.fragilis

<400> 9376

Ala Lys Ala Cys Asp Asn Leu Ile Cys Asn Leu Asn Arg Leu Lys Met
 1 5 10 15
 Lys Lys Glu Leu Leu Thr Arg Phe Met Glu Lys Arg Ile Val Glu Leu
 20 25 30
 Lys Lys Glu Gln Arg Asn Gly Thr Ala His Val Tyr Gln Ser Thr Leu
 35 40 45
 Asn Arg Leu Lys Asn Phe Met Asn Gly Arg Glu Ile Thr Phe Ser Gln
 50 55 60

Leu Thr Pro Glu Trp Leu Ala Leu Phe Glu Gln Lys Leu Leu Ala Asp
 65 70 75 80
 Gln Leu Lys Trp Asn Thr Ile Ser Thr Tyr Met Arg Met Leu Arg Ser
 85 90 95
 Val Tyr Asn Gln Ala Leu Glu Arg Gly Val Ala Thr Tyr Val Pro Arg
 100 105 110
 Leu Phe Asn Lys Val His Thr Gly Ile Asp Cys Pro Val Lys Arg Ala
 115 120 125
 Val Ser Pro Glu Val Ile Cys Arg Leu Met Thr Asp Arg Lys Pro Leu
 130 135 140
 Pro Gly Lys Leu Ala Phe Ser Arg Asp Leu Phe Val Leu Leu Phe Leu
 145 150 155 160
 Leu Arg Gly Met Pro Phe Val Asp Leu Ala Phe Leu Arg Arg Cys Asp
 165 170 175
 Leu Gln Gly Asn Val Ile Thr Tyr His Arg Arg Lys Thr Ser Arg Lys
 180 185 190
 Leu Thr Val Val Val Gly Lys Glu Ala Met Glu Ile Ile Gln Lys Tyr
 195 200 205
 Met Tyr Ala Ile Pro Asp Ser Pro Tyr Leu Phe Pro Ile Ile Gln Asn
 210 215 220
 Pro Gly Lys Asp Glu Tyr Gly Gln Tyr Ala Arg Met Leu Arg Leu Gln
 225 230 235 240
 Asn Tyr Arg Leu Thr Gln Val Ala Asn Ile Leu Gly Ile Arg Asp Arg
 245 250 255
 Leu Ser Thr Tyr Thr Ala Arg His Thr Trp Ala Thr Thr Ala Leu Arg
 260 265 270
 Gln Asn Tyr Asn Ser Ser Leu Ile Cys Asp Ala Met Gly His Ser Ser
 275 280 285
 Val Lys Val Thr Glu Thr Tyr Phe Gln Pro Tyr Arg Asp Asp Glu Val
 290 295 300
 Asn Arg Met Asn Ser Ser Leu Ile Thr Tyr Ile Leu Ser Lys Lys Lys
 305 310 315 320
 Arg Gly Thr Asp Lys Lys Asn Lys Lys Leu Ile Ala
 325 330

<210> 9377

<211> 202

<212> PRT

<213> B.fragilis

<400> 9377

Lys Arg Ile Arg Met Lys Ser Val Ile Arg His Ile Leu Ser Val Ala
 1 5 10 15
 Val Leu Phe Cys Leu Ile Ser Gly Val Gln Ala Gln Ser Val Lys Val
 20 25 30
 Asn Ile Pro Phe Trp Leu Thr Gly Ser Pro Asn Val Gly Phe Glu Tyr
 35 40 45
 Thr Leu Thr Arg Gln Leu Thr Val Asn Gly Glu Val Leu Trp Met Pro
 50 55 60
 Tyr Leu Phe Lys Lys His Glu Glu Val Phe Arg Ala Leu Gln Ser Ser
 65 70 75 80
 Val Glu Leu Arg Tyr Tyr Val Asn Pro Arg Asn Phe Tyr Thr Asn Asp
 85 90 95
 Ser Trp Asp Gly Phe Tyr Ile Gly Pro Tyr Ala Met Tyr Gly Asn Phe
 100 105 110
 Asn Ile Gly Leu Leu Lys His Asn Asp Pro Leu Gln Ser Tyr Arg Arg
 115 120 125
 Lys Gly Trp Gly Val Ser Gly Gly Ile Ser Thr Gly Tyr Lys Phe Ala
 130 135 140

Leu Asp Tyr Tyr Ile Cys Lys Ile Pro Arg Trp Asp Leu Thr Lys Phe
 355 360 365
 Ala Gly Val Ser Arg Glu Ile Gly Ser Ser Met Lys Ser Val Gly Glu
 370 375 380
 Ile Met Ser Ile Gly Arg Ser Phe Glu Glu Ile Ile Gln Lys Gly Leu
 385 390 395 400
 Arg Met Ile Gly Gln Gly Met His Gly Phe Val Gly Asn Asp Asp Val
 405 410 415
 His Phe Glu Asp Leu Asp Lys Glu Leu Ser His Pro Thr Asp Leu Arg
 420 425 430
 Ile Phe Ala Leu Ala Gln Ala Met Glu Glu Gly Tyr Thr Ile Glu Arg
 435 440 445
 Ile His Glu Leu Thr Lys Ile Asp Pro Trp Phe Leu Gly Lys Leu Lys
 450 455 460
 Asn Ile Val Asp Tyr Lys Ala Lys Leu Ser Ala Tyr Asp Lys Val Glu
 465 470 475 480
 Asp Ile Pro Ala Asp Val Leu Arg Glu Ala Lys Val Leu Gly Phe Ser
 485 490 495
 Asp Phe Gln Ile Ala Arg Phe Val Leu Asn Pro Val Gly Asn Met Glu
 500 505 510
 Lys Glu Asn Leu Met Val Arg Ala Arg Arg Lys Glu Leu Gly Ile Leu
 515 520 525
 Pro Ala Val Lys Arg Ile Asn Thr Ile Ala Ser Glu His Pro Glu Leu
 530 535 540
 Thr Asn Tyr Leu Tyr Met Thr Tyr Ala Val Gln Gly Tyr Asp Val Asn
 545 550 555 560
 Tyr Tyr Lys Asn Glu Lys Ser Val Val Val Leu Gly Ser Gly Ala Tyr
 565 570 575
 Arg Ile Gly Ser Ser Val Glu Phe Asp Trp Cys Ser Val Asn Ala Val
 580 585 590
 Gln Thr Ala Arg Lys Leu Gly Tyr Lys Ser Ile Met Ile Asn Tyr Asn
 595 600 605
 Pro Glu Thr Val Ser Thr Asp Tyr Asp Met Cys Asp Arg Leu Tyr Phe
 610 615 620
 Asp Glu Leu Ser Phe Glu Arg Val Leu Asp Val Ile Asp Leu Glu Gln
 625 630 635 640
 Pro Arg Gly Val Ile Val Ser Val Gly Gly Gln Ile Pro Asn Asn Leu
 645 650 655
 Ala Met Lys Leu Tyr Arg Gln Ser Val Pro Val Leu Gly Thr Ser Pro
 660 665 670
 Ile Ser Ile Asp Arg Ala Glu Asn Arg Asn Lys Phe Ser Ala Met Leu
 675 680 685
 Asp Gln Leu Gly Ile Asp Gln Pro Ala Trp Gln Glu Leu Thr Ser Leu
 690 695 700
 Glu Asp Val Lys Gly Phe Val Glu Lys Val Gly Tyr Pro Val Leu Val
 705 710 715 720
 Arg Pro Ser Tyr Val Leu Ser Gly Ala Ala Met Asn Val Cys Tyr Asp
 725 730 735
 Asp Glu Glu Leu Glu Asn Phe Leu Lys Met Ala Ala Glu Val Ser Lys
 740 745 750
 Glu Tyr Pro Val Val Val Ser Gln Phe Leu Glu Asn Thr Lys Glu Ile
 755 760 765
 Glu Phe Asp Ala Val Ala Gln Asn Gly Glu Val Val Glu Tyr Ala Ile
 770 775 780
 Ser Glu His Ile Glu Phe Ala Gly Val His Ser Gly Asp Ala Thr Leu
 785 790 795 800
 Val Phe Pro Ala Gln Lys Ile Tyr Phe Ala Thr Ala Arg Arg Ile Lys
 805 810 815
 Lys Ile Ser Arg Gln Ile Ala Lys Glu Leu Asn Ile Ser Gly Pro Phe

820	825	830
Asn Ile Gln Phe Leu Ala Arg	Asn Asn Glu Val Lys Val Ile Glu Cys	
835	840	845
Asn Leu Arg Ala Ser Arg Ser	Phe Pro Phe Val Ser Lys Val Leu Lys	
850	855	860
Arg Asn Phe Ile Glu Thr Ala Thr Arg	Ile Met Leu Asp Ala Pro Tyr	
865	870	875
Ser Arg Pro Asp Lys Ser Ala Phe Asp	Ile Asp Trp Ile Gly Val Lys	
885	890	895
Ala Ser Gln Phe Ser Phe Ser Arg	Leu His Lys Ala Asp Pro Val Leu	
900	905	910
Gly Val Asp Met Ser Ser Thr Gly	Glu Val Gly Cys Ile Gly Asp Asp	
915	920	925
Phe Ser Glu Ala Leu Leu Asn Ala Met	Ile Ala Thr Gly Phe Lys Ile	
930	935	940
Pro Gly Lys Gly Val Met Phe Ser Ser	Gly Ala Met Lys Ser Lys Val	
945	950	955
Asp Leu Leu Glu Ala Ser Arg Met	Leu Phe Asn Gln Gly Tyr Lys Ile	
965	970	975
Tyr Ala Thr Ala Gly Thr Ala Ala Phe	Leu Asn Ala His Gly Val Asp	
980	985	990
Thr Thr Pro Val Tyr Trp Pro Asp	Glu Lys Pro Gly Ala Glu Asn Asn	
995	1000	1005
Val Met Lys Met Ile Ala Asp His	Lys Phe Asp Leu Ile Val Asn Ile	
1010	1015	1020
Pro Lys Asn His Ser Lys Arg Glu	Leu Thr Asn Gly Tyr Arg Ile Arg	
1025	1030	1035
Arg Gly Ala Ile Asp His Asn Ile	Pro Leu Ile Thr Asn Ala Arg Leu	
1045	1050	1055
Ala Ser Ala Phe Ile Glu Ala Phe	Cys Asp Leu Lys Leu Glu Asp Ile	
1060	1065	1070
Gln Ile Lys Ser Trp Gln Glu Tyr Lys		
1075	1080	

<210> 9379
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 9379
Ile Phe Thr Val Leu Lys Lys Thr Ile Lys Ser Phe Pro Ile Phe Gln
1 5 10 15
Pro Glu Lys Trp Lys Tyr Leu Leu Leu Pro Phe Pro Lys Asp Asn Pro
20 25 30
Leu Lys Met Phe Ser Tyr Leu Ile Ser Ile Ala Lys Ile Ile Val Leu
35 40 45
Leu Cys Val Ile Gln Lys Ile Tyr Leu Asn Leu Pro Pro Ile Ser Ser
50 55 60
Pro Val Thr Tyr Glu Val Thr Asp Ile Phe Ser Ile Ser Asn Gln Ala
65 70 75 80
Ile Ser Phe Leu Phe Phe Leu Ser Val Pro Leu Phe Phe Phe Asp Lys
85 90 95
Ile Tyr Val Ile Arg Glu Leu Phe Ile Arg Phe Thr Ser Ser Ser Leu
100 105 110

<210> 9380
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9380

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Leu Ser Lys Ser Phe Phe Glu Arg Ser Asn His Arg Arg Gln Arg His
1      5      10      15
Thr Ser Leu Ile Met Thr Leu Ala Asp Gln Cys Gly Cys Thr Asp His
20     25     30
Gly Ile Tyr Ala Ser Ala Ser Asn Ser Phe His Cys Thr Leu Asp Tyr
35     40     45
Asp Asp Pro Asp Asp Pro Thr Gln Ala Leu Tyr Gln Lys Glu Thr Asp
50     55     60
Asn Ser Arg Ile Lys Thr Cys Thr Leu Glu Pro Lys Leu Asp Tyr Arg
65     70     75     80
Leu Cys Val Phe Ser Cys Arg Asn Thr Leu Leu Arg Asn Arg Arg Thr
85     90     95
Tyr Tyr Leu Tyr Leu Tyr Trp Thr Ile Phe His Lys Gly Ile Pro Glu
100    105    110
Val Thr Tyr Leu Pro Pro Asn Ile Asp Phe Ala Thr Arg Gln Thr Asn
115    120    125
His Phe Phe Thr Thr Ser Tyr Glu Ser Arg Met Pro Phe Glu Thr Ile
130    135    140
Leu Asn Ser Thr His Leu His Ser Thr Tyr Asn Val Ser Gln Arg Ile
145    150    155    160
Leu Val Glu Ile Asn Ser Gly Pro Phe Tyr Trp Ile Gly Lys Pro Glu
165    170    175
Leu Leu Glu Thr Ser Pro Ser Ile Ser Gln Asp Phe Ser Arg Asn
180    185    190

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<210> 9381

<211> 389

<212> PRT

<213> B.fragilis

<400> 9381

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Tyr Lys Met Leu Gln Pro Glu Leu Lys Met Arg Arg Asp Lys Ile Arg
1      5      10      15
Val Leu Met Ala Gln Gln Asn Ile Glu Ala Ala Leu Ile Thr Cys Asn
20     25     30
Val Asn Leu Leu Tyr Thr Tyr Gly Arg Ile Val Ser Gly Tyr Leu Tyr
35     40     45
Leu Pro Leu His Ser Pro Ala Leu Leu Phe Ile Lys Arg Pro Asn Asn
50     55     60
Ile Thr Gly Glu His Val Phe Pro Ile Arg Lys Pro Glu Gln Ile Pro
65     70     75     80
Asp Leu Ile Lys Glu Asn Asn Leu Pro Met Pro Gln Lys Leu Met Leu
85     90     95
Glu Gly Asp Glu Leu Ser Phe Thr Glu Tyr Asn Arg Leu Ala Ala Ile
100    105    110
Phe Pro Glu Ser Glu Ile Val Asn Gly Thr Pro Leu Ile Arg Glu Ala
115    120    125
Arg Ser Val Lys Thr Pro Val Glu Ile Glu Leu Phe Arg Arg Ser Gly
130    135    140
Val Ala His Ala Lys Ala Tyr Asp Gln Ile Pro Ser Val Tyr Arg Pro
145    150    155    160
Gly Met Thr Asp Leu Glu Phe Ser Ile Glu Ile Glu Arg Leu Met Arg
165    170    175
Leu Gln Gly Asn Leu Gly Ile Phe Arg Val Phe Gly Gln Ser Met Glu
180    185    190
Ile Phe Met Gly Ser Val Leu Thr Gly Asp Asn Ala Ala Tyr Pro Ser
195    200    205

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Pro Tyr Asp Phe Ala Leu Gly Gly Glu Gly Leu Asp Pro Ala Leu Pro
 210 215 220
 Gly Gly Leu Asn Lys Thr Pro Leu Lys Glu Gly Gln Ser Val Met Val
 225 230 235 240
 Asp Leu Gly Gly Asn Phe Asn Gly Tyr Met Gly Asp Met Ser Arg Val
 245 250 255
 Phe Ser Val Gly Lys Leu Ser Asp Glu Ala Tyr Thr Ala His Gln Val
 260 265 270
 Cys Leu Asp Ile Gln Glu Ala Val Ser Ser Met Ala Gln Pro Gly Val
 275 280 285
 Val Cys Glu Asp Leu Tyr Asn Ala Ala Ile Asn Ile Val Thr Lys Ala
 290 295 300
 Gly Phe Ala Asp Lys Phe Met Gly Ile Ser Gln Gln Ala Lys Phe Ile
 305 310 315 320
 Gly His Gly Ile Gly Leu Glu Ile Asn Glu Ala Pro Val Leu Ala Pro
 325 330 335
 Arg Met Lys Gln Glu Leu Glu Pro Gly Met Val Phe Ala Leu Glu Pro
 340 345 350
 Lys Ile Val Ile Pro Gly Val Gly Pro Val Gly Ile Glu Asn Ser Trp
 355 360 365
 Ala Val Thr Pro Glu Gly Val Glu Lys Leu Thr Ile Cys Asn Glu Glu
 370 375 380
 Ile Ile Glu Leu Gln
 385

<210> 9382
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9382
 Leu Ser Ala Phe Leu Tyr Ser Ala Ser Leu Thr Glu Arg Val Phe Val
 1 5 10 15
 Glu Lys Glu Gly Leu Ala Glu Ser Pro Arg Leu Asn Val Pro Thr Pro
 20 25 30
 Tyr Glu Thr Ala Ser Leu Pro Glu Ser His Glu Ala Thr His Glu Ile
 35 40 45
 Ser Ile Ala Ile Leu Thr Ile Lys Glu Ser Leu Phe Ile Met Ile Thr
 50 55 60
 Thr Asn Tyr Tyr Ser
 65

<210> 9383
 <211> 471
 <212> PRT
 <213> B.fragilis

<400> 9383
 His Gln Lys Thr Phe Leu Ile Phe Ala Tyr Glu Thr Ser Tyr Ile Leu
 1 5 10 15
 Ser Glu Ser Thr Phe Leu Lys His Thr Ile Met Asn Ile Glu Lys Ile
 20 25 30
 Met Ser Ser Leu Glu Ala Lys His Pro Gly Glu Ser Glu Tyr Leu Gln
 35 40 45
 Ala Val Lys Glu Val Leu Leu Ser Ile Glu Asp Ile Tyr Asn Gln His
 50 55 60
 Pro Glu Phe Glu Lys Ala Lys Ile Ile Glu Arg Leu Val Glu Pro Asp
 65 70 75 80
 Arg Ile Phe Thr Phe Arg Val Thr Trp Val Asp Asp Lys Gly Glu Val

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<210> 9384
<211> 248
<212> PRT
<213> B.fragilis
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<400> 9384
Val Asn Ile Lys Arg Leu Val Tyr Met Asn Ala Ile Lys Asn Ile Tyr
1             5             10             15
Ala Val Leu Ala Leu Ile Ala Leu Cys Leu Ser Ser Cys Glu Met Lys
```

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      20      25      30
Asn Glu Leu Glu Gly Lys Tyr Asn Leu Lys Asn Asp Glu Gly Leu Leu
  35      40      45
Thr Leu Asp Leu Val Asn Lys Thr Gln Ala Thr Pro Thr Thr Lys Ala
  50      55      60
Glu Ser Thr Ser Leu Thr Asp Glu Leu Asp Val Asn Thr Tyr Lys Val
  65      70      75      80
Glu Ile Val Asp Asn Ala Thr Glu Ala Val Val Arg Ser Phe Ala Ser
      85      90      95
Tyr Ala Lys Leu Lys Glu Ala Leu Pro Leu Val Val Pro Val Gly Asn
      100      105      110
Tyr Lys Ile Val Ala Lys Ser Gly Val Leu Gln Asp Ala Ser Arg Thr
      115      120      125
Pro Tyr Phe Glu Gly Ser Ser Ser Ile Glu Val Lys Gln Gly Met Glu
      130      135      140
Ser Lys Ala Glu Val Leu Cys Lys Ser Ala Thr Val Lys Val Ser Leu
      145      150      155      160
Asn Ile Ser Glu Glu Phe Leu Asn Met Phe Ala Asp Asp Tyr Val Phe
      165      170      175
Thr Val Ser Asn Gly Ile Gly Gly Val Ile Tyr Val Lys Lys Glu Asp
      180      185      190
Leu Ser Ser Ile Tyr His Ser Ile Gln Ala Gly Cys Thr Ser Ile Asn
      195      200      205
Ile Val Ser Lys Glu Arg Gln Lys Asn Ser Gly Arg Asp Ile Glu Thr
      210      215      220
Val Asp Thr Val Thr Ser His Met Gln Lys Val Cys Lys Arg Val Ile
      225      230      235      240
Leu Leu Met Ser Arg Cys Asn Arg
      245

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<210> 9385
 <211> 201
 <212> PRT
 <213> B.fragilis

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<400> 9385
Lys Ser Val Lys Ile Arg Thr Ile Gln Asn Val Thr Arg Ser Asp Gln
  1      5      10      15
Lys Trp Gly Ile Gln Leu His Ile Asp Leu Thr Met Asp Glu Thr Gly
      20      25      30
Ile Pro Val Lys Val Pro Thr Glu Leu Ile Glu Gln Ser Asn Pro Glu
      35      40      45
Asp Pro Asp Gln Pro Ser Asp Pro Asp Gln Pro Thr Val Asp Glu Pro
      50      55      60
Asp Ile Ile Gly Pro Tyr Lys Val Val Lys Val Tyr Thr Asn Asn Pro
      65      70      75      80
Pro Thr Val Gln Val Thr Met Thr Ala Pro Ala Gly Ile Gln Asn Leu
      85      90      95
Leu Val Thr Ile Thr Ser Asp Ser Thr Glu Phe Ile Gly Leu Ile Ser
      100      105      110
Gln Met Gly Leu Gly Glu Thr Phe Asp Leu Ala Asn Pro Gly Asp Leu
      115      120      125
Glu Asp Lys Leu Glu Gly Ser Leu Glu Val Gly Ser Gly Ile Gly Val
      130      135      140
Ile Asp Pro Asn Asp Pro Ile Lys Asp Lys Lys Glu Phe Ile Phe His
      145      150      155      160
Val Ser Gly Phe Met Pro Met Leu Ser Pro Phe Gly Leu Gln Gln His
      165      170      175
Tyr Phe Thr Ile Lys Leu Ile Asp Asn Asn Gly Thr Glu Leu Ala Lys

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180 185 190
 Lys Leu Thr Val Lys Val Val Lys Asn
 195 200

<210> 9386
 <211> 994
 <212> PRT
 <213> B.fragilis

<400> 9386
 Asn Tyr Gly Lys Pro Met Leu Ser Lys Phe Lys Leu Asn Gln Leu Tyr
 1 5 10 15
 Phe Lys Asp Thr Gln Phe Ala Asn Leu Met Thr Arg Arg Ile Phe Asn
 20 25 30
 Val Leu Leu Ile Ala Asn Pro Tyr Asp Ala Phe Met Leu Glu Asp Asp
 35 40 45
 Gly Arg Ile Asp Glu Lys Ile Phe Asn Glu Tyr Thr Ser Leu Ser Leu
 50 55 60
 Arg Tyr Pro Pro Arg Phe Ser Gln Val Ser Thr Glu Glu Glu Ala Leu
 65 70 75 80
 Arg Gln Leu Glu Ser Val Ser Phe Asp Leu Val Ile Cys Met Pro Gly
 85 90 95
 Thr Gly Asp Asn Asp Ser Phe Asp Ile Gly Arg His Ile Lys Glu Lys
 100 105 110
 Tyr Glu Gln Ile Pro Ile Val Ile Leu Thr Pro Phe Ser His Gly Ile
 115 120 125
 Thr Lys Arg Ile Ala Asn Glu Asp Leu Ser Ala Phe Asp Tyr Val Phe
 130 135 140
 Cys Trp Leu Gly Asn Thr Asp Leu Leu Val Ser Ile Ile Lys Leu Ile
 145 150 155 160
 Glu Asp Lys Met Asn Leu Glu His Asp Val Lys Glu Val Gly Val Gln
 165 170 175
 Leu Ile Leu Leu Val Glu Asp Ser Ile Arg Phe Tyr Ser Ser Val Leu
 180 185 190
 Pro Asn Leu Tyr Lys Phe Val Leu Lys Gln Ser Gln Glu Phe Ser Thr
 195 200 205
 Glu Ala Leu Asn Ala His Gln Arg Thr Leu Arg Met Arg Gly Arg Pro
 210 215 220
 Lys Ile Val Leu Ala Arg Thr Tyr Glu Glu Ala Met Asp Ile Tyr Asn
 225 230 235 240
 Lys Tyr Thr Asn Asn Ile Leu Gly Val Ile Thr Asp Val Arg Phe Pro
 245 250 255
 Arg Val Asp Lys Gly Glu Lys Asp Gly Met Ala Gly Ile Lys Leu Cys
 260 265 270
 Ala Glu Val Arg Lys Lys Asp Pro Phe Val Pro Leu Ile Ile Gln Ser
 275 280 285
 Ser Glu Thr Glu Asn Ala Ala Tyr Ala Ala Lys Tyr Gly Ala Thr Phe
 290 295 300
 Ile Asp Lys Asn Ser Lys Lys Met Asp Val Asp Leu Arg Arg Ile Val
 305 310 315 320
 Ser Asp Asn Phe Gly Phe Gly Asp Phe Val Phe Arg Asn Pro Glu Thr
 325 330 335
 Gly Val Glu Ile Ala Arg Val Arg Asn Leu Lys Glu Leu Gln Asn Ile
 340 345 350
 Leu Phe Ala Val Pro Ala Glu Ser Phe Leu Tyr His Ile Ser Arg Asn
 355 360 365
 His Val Ser Arg Trp Leu Tyr Ser Arg Ala Met Phe Pro Val Ala Glu
 370 375 380
 Phe Leu Arg Pro Ile Thr Trp His Ser Leu Gln Asp Val Asp Ala His

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385          390          395          400
Arg Lys Ile Ile Phe Glu Ala Ile Val Lys Tyr Arg Lys Met Lys Asn
          405          410          415
Gln Gly Val Val Ala Val Phe Lys Arg Asp Arg Phe Asp Arg Tyr Ser
          420          425          430
Asn Phe Ala Arg Ile Gly Asp Gly Ser Leu Gly Gly Lys Gly Arg Gly
          435          440          445
Leu Ala Phe Ile Asp Asn Met Val Lys Arg His Pro Glu Phe Glu Glu
          450          455          460
Phe Glu Asn Ala Arg Val Ala Ile Pro Lys Thr Val Val Leu Cys Thr
465          470          475          480
Asp Val Phe Asp Glu Phe Met Asp Thr Asn Asn Leu Tyr Gln Val Ala
          485          490          495
Leu Ser Asp Ala Asp Asp Asp Thr Ile Leu Arg Tyr Phe Leu Lys Ala
          500          505          510
Lys Leu Pro Asp Arg Leu Val Glu Asp Phe Phe Thr Phe Phe Asp Val
          515          520          525
Val Lys Ser Pro Ile Ala Ile Arg Ser Ser Ser Leu Leu Glu Asp Ser
          530          535          540
His Tyr Gln Pro Phe Ala Gly Ile Tyr Asn Thr Tyr Met Ile Pro Tyr
545          550          555          560
Leu Asp Asp Lys Tyr Glu Met Leu Arg Met Leu Ser Asp Ala Ile Lys
          565          570          575
Gly Val Tyr Ala Ser Val Tyr Phe Arg Asp Ser Lys Ala Tyr Met Gln
          580          585          590
Ala Thr Ser Asn Val Ile Asp Gln Glu Lys Met Ala Val Ile Leu Gln
          595          600          605
Gln Val Val Gly Asn Gln Tyr Gly Asp Arg Tyr Tyr Pro Ser Met Ser
          610          615          620
Gly Val Ala Arg Ser Leu Asn Tyr Tyr Pro Ile Gly Asp Glu Lys Ala
625          630          635          640
Glu Glu Gly Thr Val Asn Leu Ala Leu Gly Leu Gly Lys Tyr Ile Val
          645          650          655
Asp Gly Gly Met Thr Leu Arg Phe Ser Pro Ala His Pro Ser Lys Val
          660          665          670
Leu Gln Thr Ser Glu Leu Asp Ile Ala Leu Lys Glu Thr Gln Thr Arg
          675          680          685
Phe Tyr Ala Leu Asp Leu Lys Asn Ala Gly Asp Asn Phe Ser Ile Asp
690          695          700
Asp Gly Phe Asn Leu Leu Lys Leu His Val Lys Glu Ala Glu Lys Asp
705          710          715          720
Gly Ser Leu Arg Tyr Ile Ala Ser Thr Tyr Asp Pro Tyr Asp Gln Val
          725          730          735
Ile Arg Asp Gly Leu Tyr Pro Gly Gly Arg Lys Val Ile Thr Phe Ala
          740          745          750
Asn Ile Leu Gln His Asp Val Phe Pro Leu Ala Arg Ile Leu Arg Trp
          755          760          765
Val Leu Arg Tyr Gly Gln Gln Glu Met Arg Arg Pro Val Glu Ile Glu
          770          775          780
Phe Ala Val Thr Leu Asn His Asp Arg Asp Lys Thr Gly Thr Phe Tyr
785          790          795          800
Leu Leu Gln Val Arg Pro Ile Val Asp Ser Lys Asp Met Leu Asp Glu
          805          810          815
Asp Leu Thr Thr Ile Pro Asp Glu Asp Val Leu Leu Arg Ser Asn Asn
          820          825          830
Ser Leu Gly His Gly Ile Met Asn Glu Ile His Asp Ile Val Tyr Val
          835          840          845
Lys Thr Asp His Tyr Ser Ala Ser Asn Asn Gln Asn Ile Ala Trp Glu
850          855          860

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Ile Glu Lys Ile Asn Gln Gln Phe Leu Asn Glu Gly Lys Asn Tyr Val
 865 870 875 880
 Leu Val Gly Pro Gly Arg Trp Gly Ser Ser Asp Thr Trp Leu Gly Ile
 885 890 895
 Pro Val Lys Trp Pro His Ile Ser Ala Ala Arg Val Ile Val Glu Ala
 900 905 910
 Gly Leu Thr Asn Tyr Arg Val Asp Pro Ser Gln Gly Thr His Phe Phe
 915 920 925
 Gln Asn Leu Thr Ser Phe Gly Val Gly Tyr Phe Thr Ile Asn Ala Phe
 930 935 940
 Met Asn Asp Gly Val Tyr Asn Gln Glu Phe Leu Asn Thr Gln Pro Ala
 945 950 955 960
 Val Phe Glu Thr Glu Tyr Leu Arg His Val Arg Phe Glu Arg Pro Ile
 965 970 975
 Val Val Lys Met Asp Gly Lys Lys Lys Leu Gly Val Val Leu Met Pro
 980 985 990
 Asp Lys

<210> 9387
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 9387
 Asn Ser Thr Asp Lys Ser Arg Cys Phe Tyr Trp Glu Lys Gln Glu Lys
 1 5 10 15
 Thr Ile His Phe Ile Ala Asp Tyr Pro Tyr Met His Arg Leu Leu Ser
 20 25 30
 Arg Phe Arg Leu Lys Ile Ser Pro Thr Leu Ile Arg Ile Asp His Lys
 35 40 45
 Ala Gly His Gly Ser Asn Lys Ala Thr Thr Lys Leu Val Lys Glu Gln
 50 55 60
 Ala Asp Ile Tyr Ala Phe Ile Met Tyr Asn Leu Gly Met Lys Met Lys
 65 70 75 80
 Tyr

<210> 9388
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 9388
 Leu Val Val Ile Ile Met Lys Arg Leu Ser Phe Met Val Ser Met Ala
 1 5 10 15
 Met Leu Ile Ser Cys Val Ala Ser Cys Asp Ser Gly Ser Asp Ala Val
 20 25 30
 Ser Tyr Gly Val Gly Thr Leu Ser Leu Gly Leu Ser Ala Asn Pro Ser
 35 40 45
 Phe Ser Thr Lys Thr Arg Ser Val Asn Glu Ala Glu Tyr Lys Lys Ala
 50 55 60
 Asp Asn Tyr Gln Val Thr Val Lys Asp Ala Asp Gly Ala Ser Leu Tyr
 65 70 75 80
 Asn Gly Leu Tyr Lys Asp Met Pro Leu Ser Ile Asp Leu Thr Ala Gly
 85 90 95
 Lys Gly Tyr Thr Val Lys Ala Phe Tyr Gly Glu Asn Val Asn Ala Gly
 100 105 110
 Phe Asp Lys Leu Tyr Val Glu Gly Ser Gln Glu Phe Thr Val Ser Glu

115	120	125
Gly Glu Gln Lys Asn Val	Ile Leu Tyr Cys Lys	Pro Ala Asn Val Lys
130	135	140
Val Ser Val Ile Tyr Thr	Glu Asp Phe Leu Lys Tyr	Tyr Ser Asp Cys
145	150	155
Thr Val Ser Leu Ser Thr	Ser His Leu Thr Ala	Pro Phe Glu Val Asn
165	170	175
Met Lys Lys Asp Phe Gly	Lys Asp Ala Tyr Leu Lys	Ala Asn Ala Asp
180	185	190
Gly Glu Lys Val Ser Ile	Thr Val Gly Gly Phe Arg	Asp Lys Glu Gly
195	200	205
Asn Glu Val Val Met Glu	Ala Leu Val Ala Glu Lys	Lys Val Ala Pro
210	215	220
Lys Thr His Leu Thr Ile	Thr Val Asp Pro Glu Val	Ile Thr Ile Ser
225	230	235
Thr Gly Thr Ala Ser Leu	Asp Val Thr Val Asp Thr	Gly Thr Glu Asp
245	250	255
Lys Asp Val Asn Ile Glu	Ile Pro Glu Glu Tyr Trp	Pro Gly Asn Ala
260	265	270
Ser Lys		

<210> 9389
 <211> 104
 <212> PRT
 <213> B.fragilis

<400> 9389

Arg Leu Ser Ala Phe Val	Leu Pro Tyr Arg His Arg	Tyr Thr Tyr Gln
1	5	10
Lys Pro Val Pro Ile Asp	Tyr Lys Leu Leu Asp Ser	Gln Ile Tyr Ser
20	25	30
Tyr Leu Ala Ser Leu Ala	Leu Leu Ala Ile Gly Tyr	Gln Ser Val Ala
35	40	45
Ser Leu Leu Tyr Pro Tyr	Phe Leu Leu Ser Leu Val	Ser Ser Leu Leu
50	55	60
Pro Ser Tyr Tyr Leu Ser	Ile Tyr Lys Tyr Thr Gln	Leu His Asn Ile
65	70	75
Pro Gln Arg Lys Phe Lys	Phe Phe Lys Ile Lys Gly	Lys Leu Leu Asn
85	90	95
Asn Leu Leu Tyr Thr	Leu Leu Leu	
100		

<210> 9390
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9390

Ile Ser Lys Tyr Ser Pro	Leu Cys Gln Arg Lys Thr	Gln Leu Thr Ile
1	5	10
Phe Phe Val Phe Leu Gln	Ser Leu Leu Phe Lys His	Thr Phe Leu Tyr
20	25	30
Ser Asn Val Phe Val Tyr	Tyr Lys Phe Ser Ile Phe	Leu Leu Lys Phe
35	40	45
Val Leu Phe Leu Pro Glu	Lys Leu Tyr Val Cys Thr	Ser His Arg
50	55	60

<210> 9391

<211> 336
 <212> PRT
 <213> B.fragilis

<400> 9391

Ile	Gly	Asn	Lys	Lys	Val	Ile	Lys	Met	Lys	Gln	Ala	Thr	Thr	Gly	Asn
1				5					10					15	
Lys	Asp	Ile	Ile	Lys	Lys	Leu	Leu	Thr	Asp	Ser	Leu	Ser	Pro	Glu	Glu
			20					25					30		
Arg	Glu	Lys	Leu	Asn	Asn	Tyr	Lys	Phe	Val	Asn	Gln	Ala	Ile	Tyr	Ser
		35					40					45			
Gln	Trp	Glu	Gln	Ala	Ser	Asp	Met	Tyr	Thr	Asp	Val	Asp	Lys	Glu	Glu
	50					55					60				
Arg	Met	Leu	Thr	Asn	Val	Met	His	Gln	Ile	Lys	Lys	Gly	Lys	Thr	Gly
65					70					75					80
Arg	Phe	Arg	Gln	Asn	Leu	His	Arg	Tyr	Gly	Trp	Val	Ala	Ser	Ile	Ala
				85					90					95	
Leu	Leu	Leu	Ile	Cys	Gly	Thr	Leu	Ser	Leu	Met	Leu	Leu	Ser	Arg	Lys
			100					105						110	
Ala	Glu	Pro	Glu	Val	Trp	Tyr	Val	Leu	Asn	Ser	Gly	Arg	Gln	Ser	Met
		115					120						125		
Asp	Ser	Val	Arg	Leu	Ala	Asp	Gly	Thr	Leu	Val	Met	Leu	Asn	Ala	Gly
		130				135					140				
Ser	Arg	Leu	Thr	Tyr	Pro	Lys	Glu	Phe	Ser	Gly	Asn	Lys	Arg	Glu	Val
145					150					155					160
Thr	Leu	Ser	Gly	Gln	Ala	Phe	Phe	Ser	Val	His	Pro	Asp	Lys	Ala	His
				165					170					175	
Pro	Phe	Val	Val	Lys	Thr	Lys	Asn	Met	Asp	Val	Thr	Ala	Leu	Gly	Thr
			180					185					190		
Ala	Phe	Glu	Val	Phe	Ser	Phe	Asp	Gly	Asp	Glu	Ser	Val	Glu	Thr	Val
		195					200					205			
Leu	Leu	Asn	Gly	Lys	Val	Lys	Val	Glu	Pro	Lys	Asp	His	Lys	Glu	Gln
		210				215					220				
Ile	Lys	Gly	Glu	Tyr	Ile	Leu	Gln	Pro	Asn	Glu	Lys	Leu	Thr	Cys	Gln
225					230					235					240
Val	Asn	Gly	Asp	Ile	Arg	Ile	Asp	Arg	Val	Asp	Ala	Asn	Ser	Tyr	Ser
			245						250					255	
Ala	Trp	Arg	Ile	Gly	Gly	Arg	Leu	Ser	Phe	Lys	Asn	Glu	Thr	Leu	Ala
			260				265						270		
Met	Ile	Leu	Pro	Arg	Leu	Glu	Lys	Trp	Tyr	Gly	Gln	Lys	Ile	Asp	Cys
		275					280					285			
Pro	Gln	Lys	Thr	Ala	Asp	His	Tyr	Arg	Phe	Thr	Phe	Thr	Leu	Arg	Asn
		290				295					300				
Glu	Pro	Leu	Asp	Leu	Ile	Leu	Asn	Ile	Met	Ser	His	Ser	Ala	Pro	Leu
305					310					315					320
Asn	Tyr	Lys	Leu	Ile	Ser	Asn	Asp	Tyr	Tyr	Val	Leu	Glu	Glu	Leu	Lys
				325					330					335	

<210> 9392
 <211> 515
 <212> PRT
 <213> B.fragilis

<400> 9392

Lys	Gln	Ala	Asn	Ala	Glu	Ala	Glu	Ser	Gly	Val	Trp	Lys	His	Leu	Leu
1				5					10					15	
Val	Leu	Pro	Glu	Leu	His	Gln	Ser	Val	Trp	Arg	Gln	Asn	His	Lys	Glu
			20					25					30		
Leu	Ile	Cys	Lys	Asp	Met	Lys	Thr	Ile	Tyr	Ile	Leu	Leu	Ile	Thr	Val

35	40	45
Leu Ser Trp Ser Leu Gln Ala Cys Thr Ala Gln Cys Gly Lys Pro Asp		
50	55	60
Ala Cys Thr Asp Ser Ile Pro Arg Ile Tyr Pro Asp Tyr Ala Gly Val		
65	70	75
Thr Phe Pro Leu Asn Ile Ala Pro Pro Asn Phe Arg Ile Gly Glu Asn		
85	90	95
Ala Asp Ala Phe Gln Thr Glu Ile Gly Thr Gly Glu Thr Ala Asp Ile		
100	105	110
Leu Tyr Thr Ser Lys Ser Pro Glu Val Ile Ile Pro Thr Lys Lys Trp		
115	120	125
Lys Lys Leu Leu Gln Lys Ala Ala Gly Lys Glu Ile Phe Ile Arg Ile		
130	135	140
Thr Leu Leu Arg Gly Gly Lys Trp Thr Arg Tyr Ala Asp Ile Lys Asp		
145	150	155
Thr Ile Ser Asn Glu Pro Ile Asp Glu Tyr Leu Val Tyr Arg Leu Leu		
165	170	175
Tyr Pro Gly Tyr Glu Leu Trp Asn Glu Met Gly Ile Tyr Gln Arg Asp		
180	185	190
Leu Thr Gly Tyr Glu Glu Thr Pro Ile Ala Glu Asn Arg Asn Phe Gly		
195	200	205
Lys Gln Cys Ile Asn Cys His Thr Phe Asn Gln Asn Ser Pro Glu Thr		
210	215	220
Met Met Val His Val Arg Gly Lys Ser Gly Gly Thr Leu Ile Cys Lys		
225	230	235
Asn Gly Lys Val Glu Lys Val Asn Thr Lys Pro Glu Gly Phe Lys Asn		
245	250	255
Gly Gly Thr Tyr Ala Ala Trp His Pro Ser Gly Arg Tyr Ile Ala Phe		
260	265	270
Ser Met Asn Glu Ile Gln Gln Phe Phe His Ser Ser Gly Gln Lys Pro		
275	280	285
Ile Glu Val Ser Asp Leu Ala Ala Asp Leu Met Val Tyr Asp Thr Glu		
290	295	300
Lys Lys Thr Phe Leu Thr Asp Ser Leu Ile Cys Gly Glu Arg Tyr Met		
305	310	315
Glu Thr Phe Pro Asn Trp Thr Pro Asp Gly Lys Thr Leu Tyr Phe Cys		
325	330	335
Arg Gly Asn Ala Tyr Lys Glu Lys Met Pro Leu Asp Ser Ile Arg Tyr		
340	345	350
Asp Leu Cys Arg Ile Gly Phe Asp Pro Glu Ser Gly Lys Phe Gly Thr		
355	360	365
Pro Glu Cys Val Tyr Arg Ala Ser Glu Gln Gly Lys Ser Val Ser Phe		
370	375	380
Pro Arg Val Ser Pro Asp Gly Lys Tyr Leu Met Phe Thr Leu Ser Asp		
385	390	395
Tyr Gly Asn Phe Ser Ile Trp His Pro Glu Ser Glu Leu Cys Leu Leu		
405	410	415
Thr Met Asp Thr Gly Glu Ile Arg Phe Leu Asn Glu Val Asn Ser Asn		
420	425	430
Asp Val Glu Ser Phe His Thr Trp Ser Ser Ser Gly Arg Trp Phe Val		
435	440	445
Phe Ser Ser Lys Arg Leu Asp Gly Leu Trp Ala Arg Pro Phe Phe Ala		
450	455	460
Ser Phe Asp Pro Glu Thr Gly Lys Ala Gly Lys Pro Phe Leu Met Pro		
465	470	475
Gln Lys Asp Pro Asp Phe Tyr Asp Thr Phe Thr Lys Thr Tyr Asn Leu		
485	490	495
Pro Glu Leu Ile Lys Gln Pro Val Arg Asn Gly Asn Glu Met Ile Lys		
500	505	510

Ala Ile His
515

<210> 9393

<211> 545

<212> PRT

<213> B.fragilis

<400> 9393

Gln	Asn	Met	Lys	Asn	Lys	Ile	Leu	Tyr	Ile	Ile	Ala	Ser	Val	Met	Leu
1				5					10					15	
Thr	Gly	Phe	Thr	Ser	Cys	Ser	Asp	Phe	Leu	Asp	Arg	Tyr	Pro	Thr	Glu
			20					25					30		
Glu	Leu	Ser	Asp	Gly	Ser	Phe	Trp	Lys	Thr	Lys	Thr	Asp	Ala	Glu	Met
		35					40					45			
Ala	Val	Ser	Asp	Ile	Tyr	Arg	Cys	Leu	Pro	Asn	Trp	Asp	Ile	Asp	Glu
	50					55					60				
Asp	Ile	Asn	Ser	Asp	Asn	Ala	Val	His	Gly	Ile	Lys	Trp	Ala	Asn	Gly
65					70				75						80
Asn	Val	Ser	Lys	Gly	Val	Tyr	Asp	Pro	Ala	Asp	Gln	Gly	Trp	Ser	Glu
			85					90						95	
Asp	Tyr	Gly	Tyr	Ile	Arg	Arg	Cys	Asn	Leu	Val	Leu	Gln	Lys	Leu	Glu
		100						105					110		
Glu	Met	Glu	Leu	Ser	Gln	Ser	Asp	Lys	Glu	Pro	Ile	Ala	Gly	Gln	Ala
	115						120					125			
Tyr	Phe	Phe	Arg	Gly	Tyr	Ile	Tyr	Phe	Glu	Leu	Ile	Arg	Lys	Phe	Gly
	130					135						140			
Asp	Val	Pro	Tyr	Ile	Asp	Gln	Pro	Leu	Lys	Leu	Thr	Asp	Val	Glu	Asp
145					150				155						160
Ile	Thr	Arg	Thr	Ser	Lys	Asp	Glu	Ile	Tyr	Thr	Lys	Ile	Met	Ala	Asp
				165				170						175	
Phe	Asp	Lys	Ala	Phe	Ser	Tyr	Leu	Pro	Glu	Glu	Trp	Pro	Ala	Thr	Gln
			180					185					190		
Trp	Gly	Arg	Ile	Thr	Lys	Gly	Ala	Ala	Met	Ala	Met	Lys	Ala	Arg	Ala
	195						200					205			
Ala	Leu	Tyr	Phe	Gly	Asn	Trp	Glu	Thr	Ala	Ala	Thr	Ala	Ala	Lys	Ser
	210				215						220				
Val	Met	Asp	Leu	Asn	Lys	Tyr	Asp	Leu	Tyr	Asp	Lys	Glu	Asn	Thr	Gly
225					230				235						240
Lys	Tyr	Gln	Glu	Leu	Phe	Trp	Glu	Lys	Thr	Asp	Gly	Cys	Glu	Glu	Ile
			245					250						255	
Ile	Leu	Ala	Val	Gln	Tyr	Asn	Ala	Pro	Asp	Lys	Thr	Asn	Tyr	Leu	Ile
			260					265					270		
Gly	Trp	Glu	Cys	Phe	Pro	Thr	Lys	Gly	Trp	Gly	Gly	Leu	Asn	Pro	Thr
		275					280					285			
Gln	Ser	Leu	Val	Asp	Ala	Phe	Glu	Asp	Ser	Glu	Gly	Ala	Pro	Ile	Ser
		290				295					300				
Lys	Ser	Lys	Ile	Tyr	Ser	Glu	Lys	Asn	Pro	Phe	Ala	Asn	Arg	Asp	Pro
305					310					315					320
Arg	Leu	Glu	Val	Asn	Val	Leu	His	Asp	Gly	Glu	Glu	Met	Tyr	Gly	Val
				325					330					335	
Thr	Ile	Lys	Val	Ala	Pro	Leu	Lys	Ser	Gly	Ser	Thr	Gly	Ile	Ala	
			340					345					350		
Gln	His	Gly	Asp	Ala	Thr	Ala	Thr	Gly	Tyr	Tyr	Gln	Gln	Lys	Trp	Leu
		355					360					365			
Asp	Pro	Ser	Ile	Asp	Pro	Gln	Ser	Ala	Gly	Trp	Glu	Met	Gly	Lys	Asp
	370					375					380				
Trp	Val	Thr	Ile	Arg	Tyr	Ala	Glu	Val	Leu	Leu	Thr	Tyr	Ala	Glu	Ala
385					390					395					400

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Lys Asn Glu Val Ser Pro Leu Asp Asp Ser Ala Phe Glu Ala Val Asn
 405 410 415
 Gln Val Arg Arg Arg Val Gly Met Pro Glu Leu Gln Lys Thr Asp Ala
 420 425 430
 Thr Lys Pro Thr Tyr Cys Ala Thr Gln Asp Asp Leu Arg Gln Arg Ile
 435 440 445
 Arg Asn Glu Trp Arg Val Glu Phe Ala Leu Glu Gly Gly Lys Arg Gln
 450 455 460
 Trp Asp Ile Arg Arg Trp Gly Ile Ala Lys Asp Val Leu Asn Ala Pro
 465 470 475 480
 Phe Leu Gly Ile Lys Tyr Lys Met Val Asp Asp Ala Val Asn Ala Asp
 485 490 495
 Pro Lys Asp Gly Gly Lys Val Cys Val Leu Tyr Glu Gly Asp Asn Val
 500 505 510
 Lys Leu Ala Gly Ser Arg Tyr Glu Asp His Asn Tyr Ile Tyr Pro Ile
 515 520 525
 Pro Gln Ser Glu Ile Asp Leu Asn Pro Lys Leu Thr Gln Asn Pro Gly
 530 535 540
 Tyr
 545

<210> 9394

<211> 62

<212> PRT

<213> B.fragilis

<400> 9394

His Arg Ala Lys Met Lys Phe Lys Ser Pro Pro Leu Lys Ser Tyr Leu
 1 5 10 15
 Leu Pro Leu Ile Asp Tyr Asn Ser Thr Ile Ile Asn Ile Ile Asn Ser
 20 25 30
 Tyr Tyr Lys His His Ile Ala Ser Arg Phe Arg Ile Tyr Val Ala Asn
 35 40 45
 Lys Ser Tyr Thr Thr Arg Phe Val Cys His Lys Leu Phe Tyr
 50 55 60

<210> 9395

<211> 452

<212> PRT

<213> B.fragilis

<400> 9395

Lys Asn Glu Asp Gly Gly Tyr Glu Met Ser Arg Leu Ser Tyr Phe Gly
 1 5 10 15
 Arg Val Gln Tyr Asp Phe Met Asn Lys Tyr Leu Phe Glu Ala Asn Leu
 20 25 30
 Arg Ala Asp Ala Ser Ser Arg Phe Pro Lys Asp Asn Arg Trp Gly Val
 35 40 45
 Phe Pro Ala Ile Ser Ala Gly Trp Arg Ile Ser Glu Glu Thr Phe Ile
 50 55 60
 Lys Asp Asn Val Ser Trp Ile Ser Asn Leu Lys Leu Arg Leu Gly Trp
 65 70 75 80
 Gly Lys Thr Gly Asn Glu Glu Leu Asp Pro Asp Asp Ile Tyr Pro Ala
 85 90 95
 Ile Pro Thr Tyr Ala Tyr Glu Lys Tyr Met Phe Gly Asn Ser Leu Tyr
 100 105 110
 Ser Thr Ala Tyr Glu Ser Arg Tyr Val Asn Asn Asn Leu Gln Trp Ala
 115 120 125
 Thr Val Thr Asn Tyr Glu Leu Gly Leu Glu Ala Gly Phe Leu Asn Asn

130		135		140
Met Phe Gly Phe Glu	Leu Ser Val Tyr Lys	Lys Lys Thr Asn Asp	Met	
145	150	155	160	
Leu Leu Tyr Met Pro	Ile Gln Gly Val	Ile Gly Met Gly	Ala Pro Ala	
	165	170	175	
Gln Asn Ala Gly Ser	Val Glu Asn Thr	Gly Phe Asp Leu	Asn Leu Leu	
	180	185	190	
His Asn Asn Arg Ile	Asn Lys Asp Trp	Ser Tyr Ala Val	Asn Leu Asn	
	195	200	205	
Ile Ala Tyr Val Lys	Asn Glu Ile Ile	Asp Met Asn Gly	Thr Glu Gly	
	210	215	220	
Ala Asn Ser Lys Asn	Asp Lys Leu Trp	Tyr Ile Glu Gly	Asn Pro Ile	
225	230	235	240	
Gly Ser Tyr Tyr Gly	Tyr Val Ala Asn	Gly Tyr Phe Asn	Thr Asp Asp	
	245	250	255	
Glu Leu Ala Asn Tyr	Pro Lys Arg Thr	Gly Lys Glu Gln	Leu Gly Asp	
	260	265	270	
Ile Lys Tyr Leu Asp	Leu Asn Gly Asp	Gly Lys Ile Thr	Ala Asp Gly	
	275	280	285	
Asp Arg Gln Ile Ile	Gly Lys Asn Phe	Pro Ser Trp Thr	Thr Thr Gly	Leu
290	295	300		
Asn Leu Thr Leu Tyr	Tyr Lys Asp Phe	Asp Phe Ser Ala	Met Phe Gln	
305	310	315	320	
Gly Ala Phe Asp Val	Asp Gly Tyr Tyr	Met Ala Glu Ala	Ala Tyr Ala	
	325	330	335	
Phe Tyr Asn Gly Ala	Asn Ala Leu Lys	Arg His Leu Asp	Arg Trp Thr	
	340	345	350	
Pro Glu His His Asn	Ala Ser Tyr Pro	Arg Ile Thr Lys	Asp Ser Gln	
	355	360	365	
Thr Asn Phe Thr Thr	Ser Ser Phe Trp	Leu Gln Asn Ala	Ser Tyr Val	
370	375	380		
Arg Leu Lys Thr Ile	Ser Leu Gly Tyr	Asn Leu Pro Asn	Ser Phe Leu	
385	390	395	400	
Ser Lys Leu Gly Val	Gln Lys Ala Lys	Leu Tyr Val Ala	Gly Glu Asn	
	405	410	415	
Leu Leu Thr Phe Ser	Asp Leu Glu Gly	Ile Asp Pro Glu	Glu Gly Asn	
	420	425	430	
Glu Arg Gly Trp Ser	Tyr Gly Asn Val	Lys Lys Val Ser	Ile Gly Leu	
435	440	445		
Lys Val Ser Phe				
450				

<210> 9396

<211> 201

<212> PRT

<213> B.fragilis

<400> 9396

Asn Leu Tyr Cys Phe	Ser Leu Lys Asn	Cys Met Phe	Ala His His	Thr
1	5	10	15	
Asp Arg Phe Met Thr	Glu Lys Glu Leu	Ile Val Ser	Leu Lys Gln	Gly
	20	25	30	
Asp Glu Ala Ala Phe	Thr Ala Leu Tyr	Arg Met Tyr	Trp Pro Lys	Val
	35	40	45	
His Asn Phe Ser Arg	Leu Tyr Leu Ser	Ser Ile Ala	Glu Val Glu	Glu
	50	55	60	
Val Val Gln Glu Val	Phe Val Lys Leu	Trp Glu Ala	Arg Ile Phe	Leu
65	70	75	80	
Lys Glu Asn Glu Ser	Phe Lys Gly Phe	Leu Phe Ile	Ile Thr Arg	Asn

				85					90					95			
Ile	Ile	Phe	Asn	Gln	Phe	Arg	Lys	Ser	Phe	Asn	Glu	Asn	Ala	Tyr	Lys		
			100					105					110				
Thr	Thr	Val	Leu	Ser	Ser	Ala	Glu	Val	Glu	Tyr	Asp	Ile	Glu	Asn	Glu		
		115					120					125					
Met	Asp	Ala	Ala	Asp	Leu	Gln	Gly	Tyr	Ile	Lys	Lys	Leu	Ile	Ser	Glu		
	130					135					140						
Leu	Thr	Pro	Arg	Gln	Gln	Glu	Val	Phe	His	Leu	Ser	Arg	Glu	Glu	His		
145					150					155					160		
Leu	Ser	Tyr	Lys	Glu	Ile	Ala	Ile	Arg	Leu	Ser	Ile	Ser	Glu	Lys	Thr		
			165					170					175				
Val	Glu	Arg	His	Ile	Asn	Glu	Ala	Leu	Lys	Phe	Leu	Arg	Lys	Asn	Ile		
		180						185					190				
Tyr	Leu	Phe	Phe	Ile	Phe	Leu	Ser	Leu									
	195						200										

<210> 9397

<211> 583

<212> PRT

<213> B.fragilis

<400> 9397

His	Phe	Lys	Ser	Asn	Asp	Tyr	Met	Lys	Lys	Ile	Ile	Thr	Leu	Leu	Cys		
1				5				10						15			
Ala	Val	Thr	Thr	Leu	Thr	Ala	Cys	Asp	Ile	Asp	Arg	Leu	Pro	Tyr	Gly		
		20						25				30					
Ser	Met	Ser	Ala	Glu	Gln	Ile	Thr	Gln	Asp	Pro	Thr	Ser	Ser	Leu	Glu		
	35					40					45						
Ser	Leu	Val	Asn	Gly	Cys	Tyr	Ala	Gln	Leu	Lys	Ser	Trp	Ser	Asp	Pro		
	50				55					60							
Met	His	Arg	Leu	Gly	Glu	Tyr	Ala	Gly	Asp	Asn	Met	Ala	Lys	Asp	Lys		
65				70					75					80			
Ser	Ser	Thr	Asp	Ala	Phe	Phe	Asp	Phe	Ile	Ser	Tyr	Ser	Arg	Asp	Ala		
			85					90					95				
Asp	Asn	Tyr	Arg	Leu	Gln	Ser	Phe	Trp	Asp	Ser	Gly	Tyr	Lys	Ala	Ile		
		100					105					110					
Ala	Gln	Ala	Ser	Asn	Ile	Ile	Lys	Met	Ile	Asp	Glu	Gly	Lys	Ser	Lys		
	115					120						125					
Ile	Ile	Asp	Tyr	Gln	Leu	Gly	Glu	Cys	Tyr	Tyr	Ile	Arg	Gly	Met	Met		
	130				135					140							
Tyr	Phe	Tyr	Leu	Gly	Arg	Ala	Phe	Gly	Arg	Pro	Tyr	Trp	Asp	Lys	Pro		
145				150					155						160		
Glu	Gly	His	Met	Gly	Val	Pro	Ile	Val	Asn	Gly	Thr	Pro	Asp	Asp	Val		
			165					170					175				
Asn	Asn	Leu	Asn	Leu	Pro	Asp	Arg	Ser	Thr	Val	Gln	Asp	Thr	Tyr	Glu		
		180					185					190					
Gln	Ala	Ile	Asp	Asp	Leu	Lys	Val	Ala	Ala	Arg	Leu	Met	Glu	Asn	Gly		
	195					200					205						
Glu	Thr	Lys	Arg	Glu	Gly	Pro	Ala	Tyr	Ala	Ser	Lys	Glu	Ala	Ala	Trp		
	210				215					220							
Ala	Met	Leu	Ser	Arg	Ile	Tyr	Leu	Phe	Met	Ser	Gly	Thr	Tyr	Glu	Ala		
225				230					235						240		
Pro	Asn	Ser	Glu	Asn	Ala	Gln	Leu	Ala	Ile	Asp	Tyr	Ala	Thr	Arg	Val		
			245					250						255			
Ile	Glu	Ser	Thr	Ser	Glu	Gly	Gly	Leu	Lys	Tyr	Glu	Leu	Leu	Ser			
		260				265					270						
Arg	Glu	Asn	Phe	Met	Arg	Tyr	Asn	Thr	Phe	Met	Pro	Glu	Asn	Asn	Lys		
	275					280					285						
Glu	Ser	Ile	Phe	Val	Val	Lys	Ile	Met	Ala	Ser	Glu	Lys	Pro	Asp	Tyr		

290		295		300
Trp Asn Ser Ile Gly Gly Met Tyr Ser Tyr Ala Gly Gln Gln Gly Trp				
305	310		315	320
Gly Glu Met Tyr Ala Ser Ala Lys Tyr Met Asp Leu Leu Asn Glu Gln				
	325		330	335
Gly Arg Asn Asp Trp Arg Pro Asp Lys Lys Lys Ile Val Asp Ala Arg				
	340		345	350
Ala Asn Phe Ile Ser Pro Ser Tyr Ile Thr Asp Ser Asp Gly Lys Tyr				
	355		360	365
Val Glu Val Phe Arg Phe Ile Lys Asn Val Tyr Asn Lys Asn Asn Ile				
	370		375	380
His Thr Gly Tyr Thr Tyr Val Gln Leu Pro Ile Ser Lys Arg Gly Asn				
385	390		395	400
Thr Val Thr Cys Lys Glu Gly Glu Thr Asn Tyr Thr Leu Ser Leu Ile				
	405		410	415
Asn Ser Ser Glu Glu Lys Tyr Ser Ile Asn Tyr Ser Asp Gly Gln Thr				
	420		425	430
Tyr Ser Gly Val Ile Asp Tyr Glu Ile Glu Leu Ser Ser Gly Gln Pro				
	435		440	445
Lys Phe Tyr Ile Leu Lys Cys Ser Asn Glu Gly Thr Ala Ser Gly Glu				
	450		455	460
Ala Glu Ser Gln Leu His Ser Pro Val Ile Ser Arg Leu Gly Glu Val				
465	470		475	480
Tyr Leu Asn Arg Ala Glu Ala Tyr Ala Lys Lys Gly Asp Tyr Ser His				
	485		490	495
Ala Gln Ala Asp Leu Asn Ile Ile Arg Glu Arg Ser Leu Pro Gly Arg				
	500		505	510
Gly Tyr Asn Asp Leu Asn Ala Ser Asn Ala Lys Val Arg Ile Glu Lys				
	515		520	525
Glu Arg Gln Leu Glu Leu Ala Tyr Gln Ala Glu Arg Ser Tyr Asp Val				
	530		535	540
Phe Arg Asn Cys Glu Thr Leu Thr Arg Lys Tyr Pro Gly Val His Asp				
545	550		555	560
Ala Met Leu Glu Ile Pro Ala Thr Asp Tyr Arg Val Ile Tyr Phe Ile				
	565		570	575
Pro Gln Ser Ala Ile Asn Ser				
	580			

<210> 9398

<211> 1128

<212> PRT

<213> B.fragilis

<400> 9398

Ser Ser Thr Gly Phe Leu Lys Asp Asp Val Tyr Tyr Leu Leu Asn Leu				
1	5		10	15
Asn Tyr Asn Leu Ile Ile Met Val Phe Met Lys Lys Cys Asn Gln Lys				
	20		25	30
Trp Phe Asn Pro Gln Lys Val Lys Lys Gln Ile Ala Ile Ala Val Ala				
	35		40	45
Ile Ser Leu Val Cys Ala Ile Pro Ile Ser Thr Phe Ala Gln Val Leu				
	50		55	60
Lys Phe Ser Ile Lys Lys Ser Asn Thr Ser Ile Gln Ser Val Leu Gln				
65	70		75	80
Glu Leu Glu Lys Glu Ser Gly Tyr Thr Phe Phe Tyr Asn Asp Asn Gln				
	85		90	95
Val Lys Leu Asp Lys Lys Ile Ser Ile Asn Ile Glu Asp Ala Ser Ile				
	100		105	110
Glu Val Val Leu Asn Gln Ile Phe Glu Asn Leu Gly Tyr Ser Tyr Arg				

115	120	125
Ile Val Glu Asn Gln Ile Val Ile Tyr Thr Thr Pro Thr Thr Thr Val		
130	135	140
Gln Gln Thr Val Gln Gln Lys Lys Gln Gln Lys Val Thr Gly Val Val		
145	150	155
Lys Asp Ile Ala Gly Asp Pro Ile Ile Gly Ala Ser Ile Ile Glu Lys		
165	170	175
Gly Ser Ser Ser Asn Gly Thr Ile Thr Asn Val Asn Gly Asp Phe Ser		
180	185	190
Leu Ile Val Thr Gly Asn Glu Leu Gln Val Ser Tyr Ile Gly Tyr Ile		
195	200	205
Pro Gln Thr Ile Asn Leu Lys Pro Gly Val Ser Ser Tyr Asn Val Ile		
210	215	220
Met Lys Glu Asp Thr Lys Thr Leu Asp Glu Val Val Val Val Gly Tyr		
225	230	235
Ser Thr Gln Lys Lys Glu Ser Leu Thr Gly Ala Leu Gln Thr Val Lys		
245	250	255
Ser Asp Lys Leu Lys Asp Ile Thr Thr Pro Ser Val Glu Asn Met Leu		
260	265	270
Asn Gly Lys Val Pro Gly Val Tyr Val Ala Pro Gly Ser Gly Gln Pro		
275	280	285
Gly Ser Gly Gly Ala Val Val Ile Arg Gly Gln Ala Thr Leu Ser Gly		
290	295	300
Thr Thr Ala Pro Leu Trp Val Ile Asp Gly Val Ile Val Gly Ser Asn		
305	310	315
Ala Gly Ala Leu Asn Pro Ser Asp Ile Glu Thr Met Thr Ile Leu Lys		
325	330	335
Asp Ala Ala Ser Thr Ala Ile Tyr Gly Ser Gln Gly Ala Asn Gly Val		
340	345	350
Ile Leu Val Thr Thr Lys Asn Gly Lys Ala Glu Lys Met Thr Val Asn		
355	360	365
Val Ser Ala Lys Val Gly Ile Ser Lys Leu Gly Arg Gly Asn Met Glu		
370	375	380
Met Met Asp Gly Ala Glu Leu Tyr Asp Tyr Tyr Lys Ser Phe Ser Asn		
385	390	395
Gln Glu Ala Ile Thr Phe Ser Arg Tyr Asn Asp Lys Leu Arg Asn Cys		
405	410	415
Asn Phe Asp Trp Phe Asp Leu Ala Ala Gln Thr Gly Val Thr Gln Asp		
420	425	430
Tyr Asn Val Ser Leu Ser Gly Gly Asn Glu Lys Ile Arg Ser Phe Leu		
435	440	445
Ser Ile Gly Val Tyr Asp Glu Glu Gly Ala Val Lys Gly Tyr Asp Tyr		
450	455	460
Thr Arg Tyr Asn Phe Arg Leu Lys Thr Thr Tyr Lys Pro Phe Glu Trp		
465	470	475
Leu Ser Ile Lys Pro Ala Leu Ala Gly Ser Arg Arg Asp Ile Glu Asp		
485	490	495
Lys Gln Tyr Asp Val Thr Ser Met Phe Gln Arg Leu Pro Trp Asp Ser		
500	505	510
Pro Phe Asp Glu Glu Gly Asn Leu Val Pro Asn Arg Tyr Thr Gly Trp		
515	520	525
Val Asn Ser Ser Asn Ser Asn Tyr Leu Tyr Asp Leu Gln Trp Asn Lys		
530	535	540
Ser Asn Ser Thr Asn Tyr Glu Phe Met Gly Asn Leu Asp Phe Asp Ile		
545	550	555
Arg Ile Thr Asp Trp Leu Ser Phe Ser Ser Val Asn Asn Tyr Lys Tyr		
565	570	575
Ile Gly Tyr Asn Tyr Ser Glu Tyr Thr Asp Pro Arg Ser Ser Ser Gly		
580	585	590

Glu	Gly	Val	Asp	Gly	Arg	Met	Arg	Glu	Tyr	Gln	Thr	Thr	Thr	Val	Arg
		595					600					605			
Arg	Tyr	Ser	Asn	His	Ile	Ile	Arg	Phe	Asn	Lys	Met	Phe	Gly	Lys	His
	610					615					620				
Ser	Ile	Asn	Ala	Leu	Ala	Ala	Tyr	Glu	Phe	Asn	Asp	Tyr	Trp	Ala	Lys
625					630					635					640
Ala	Thr	Asp	Met	Tyr	Gly	Ile	Gly	Phe	Ile	Pro	Gly	Phe	Glu	Val	Leu
				645					650					655	
Asp	Val	Val	Ala	Lys	Pro	Glu	Lys	Val	Gly	Gly	Ser	Ile	Ser	Glu	Trp
			660					665					670		
Ala	Val	Gln	Ser	Leu	Leu	Phe	Asn	Ala	Asn	Tyr	Ala	Phe	Asp	Asn	Lys
		675					680					685			
Tyr	Leu	Ala	Gln	Leu	Ser	Phe	Arg	Arg	Asp	Gly	Ala	Ser	Asn	Phe	Gly
	690					695					700				
Asp	Asn	Ala	Lys	Tyr	Gly	Asn	Phe	Phe	Ser	Ile	Ser	Ala	Gly	Trp	Asn
705					710					715					720
Ile	Asn	Arg	Glu	Lys	Trp	Phe	His	Ala	Ser	Trp	Val	Asp	Ile	Leu	Lys
				725					730					735	
Leu	Arg	Ile	Ser	Tyr	Gly	Ser	Val	Gly	Asn	Arg	Pro	Ser	Ser	Leu	Tyr
		740						745					750		
Pro	Gln	Tyr	Asp	Leu	Tyr	Ser	Val	Ser	Ser	Lys	Tyr	Asn	Glu	Glu	Ser
		755					760					765			
Gly	Ala	Leu	Ile	Ser	Gln	Leu	Gly	Asn	Lys	Asp	Leu	Thr	Trp	Glu	Lys
	770					775					780				
Thr	Tyr	Thr	Thr	Gly	Thr	Gly	Ile	Asp	Val	Ala	Phe	Phe	Asp	Asn	Arg
785					790					795					800
Leu	Arg	Ala	Ser	Phe	Asp	Trp	Tyr	Asn	Lys	Tyr	Thr	Ser	Asn	Ile	Leu
				805					810					815	
Tyr	Ala	Val	Pro	Ile	Ser	Gly	Leu	Val	Gly	Val	Thr	Ser	Met	Trp	Lys
			820						825				830		
Asn	Ile	Gly	Glu	Met	Gln	Asn	Gln	Gly	Phe	Glu	Leu	Ser	Ile	Gly	Gly
		835					840					845			
Asp	Ile	Ile	Arg	Thr	Lys	Asp	Trp	Asp	Trp	Asn	Ile	Glu	Ile	Asn	Leu
	850					855					860				
Gly	His	Asn	Lys	Asn	Lys	Leu	Lys	Lys	Leu	Tyr	Lys	Thr	Lys	Asn	Ala
865					870					875					880
Glu	Gly	Gln	Phe	Val	Glu	Lys	Pro	Ile	Ile	Ser	Asp	Gly	Thr	Ser	
				885					890					895	
Ile	Ala	Gly	Thr	Ala	Lys	Arg	Val	Leu	Gln	Pro	Gly	Tyr	Pro	Cys	Asp
			900					905					910		
Thr	Tyr	Tyr	Leu	Lys	Glu	Trp	Ala	Gly	Val	Asn	Pro	Glu	Asn	Gly	Ala
		915					920					925			
Pro	Gln	Trp	Tyr	Lys	Thr	Val	Glu	Asn	Glu	Asp	Gly	Thr	Leu	Ser	Arg
		930				935					940				
Gln	Lys	Thr	Ser	Asn	Tyr	Ser	Glu	Ala	Asp	Gln	Val	Lys	Cys	Gly	Ser
945					950					955					960
Ser	Ser	Pro	Asp	Ile	Phe	Gly	Gly	Phe	Ser	Thr	Val	Leu	Arg	Trp	Lys
				965					970					975	
Asp	Leu	Asp	Leu	Asn	Ala	Val	Phe	Gly	Tyr	Ser	Val	Gly	Gly	Gln	Ile
			980					985					990		
Tyr	Asn	Tyr	Ser	Arg	Gln	Glu	Tyr	Asp	Ser	Asp	Gly	Ala	Tyr	Asn	Asp
	995					1000						1005			
Arg	Asn	Gln	Met	Lys	Leu	Gln	Lys	Gly	Trp	Asn	Arg	Trp	Glu	Lys	Pro
	1010					1015					1020				
Gly	Asp	Ile	Ala	Thr	His	Pro	Val	Ala	Ser	Tyr	Ser	Asn	Thr	Ser	Lys
1025					1030					1035					1040
Ser	Asn	Ser	Ser	Ser	Ser	Arg	Tyr	Leu	Glu	Lys	Asn	Asp	Tyr	Leu	Lys
				1045					1050					1055	
Leu	Arg	Ser	Leu	Ser	Ile	Gly	Tyr	Asn	Leu	Lys	Leu	Pro	Gln	Tyr	Tyr

1060	1065	1070
Ile Asn Asn Met Arg Ile Phe Phe Thr Gly Glu Asn Leu Phe Cys Val		
1075	1080	1085
Thr Asn Tyr Ser Gly Val Asp Pro Glu Ile Pro Ala Ser Asp Gly Ser		
1090	1095	1100
Val Ile Gly Thr Ala Leu Pro Ser Val Tyr Pro Thr Val Arg Lys Phe		
1105	1110	1115
Met Phe Gly Leu Asn Leu Thr Phe		1120
1125		

<210> 9399

<211> 496

<212> PRT

<213> B.fragilis

<400> 9399

Ala Ala Leu Ile Met Arg Lys Tyr Phe Pro Tyr Ile Leu Phe Ile Phe		
1	5	10
Leu Phe Phe Ile Tyr Phe Leu Cys Tyr Gln Ser Val Leu Ser His Val		15
20	25	30
Ile Tyr Tyr Gln Glu Gln His His Leu Phe Leu Tyr Ser Lys Thr Phe		
35	40	45
Phe Leu Gln His Ile Gln Ser Gln Gly Trp Met Ser Tyr Leu Thr Ala		
50	55	60
Phe Ile Ile Gln Phe Phe His Ile Pro Thr Ile Gly Ser Ile Leu Leu		
65	70	75
Ala Gly Ile Leu Ala Leu Ile Tyr Leu Leu Thr Asn Asp Ala Ile Lys		
85	90	95
Lys Ile Thr Gly His Asn Asp Leu Leu Leu Leu Ser Leu Ile Pro Ser		
100	105	110
Ile Tyr Leu Phe Leu Tyr Ser Met Thr Val Asp His Ser Leu Thr Pro		
115	120	125
Ile Ile Ala Thr Phe Leu Gly Leu Leu Ile Met Gly Leu Phe His Gln		
130	135	140
Ile Thr Val Arg Pro Trp Ser Phe Ile Arg Lys Ile Tyr Ser Pro Leu		
145	150	155
Pro Pro Asn Asn Lys Tyr Arg Leu Leu Ile Tyr Ser Leu Leu Ile Ala		
165	170	175
Ile Tyr Ala Gly Thr Ser Phe Tyr Phe Phe Val Gln Thr Tyr Asn Met		
180	185	190
Ser Glu His Arg Met Ile Met Ala Glu Lys Ser Val Lys Glu Lys Asn		
195	200	205
Trp Glu Asn Val Leu Thr Gln Thr Glu Lys Tyr Ile Asn Ser Gly Arg		
210	215	220
Thr Asn Gln Leu Ile Ser Tyr Phe His Asn Leu Ala Leu Tyr His Thr		
225	230	235
Glu Lys Leu Pro Tyr Gln Leu Phe Asp Tyr Pro Gln Lys Leu Gly Val		
245	250	255
Lys Ala Leu Tyr Phe Pro Trp Asn Ser Asp Ser Arg Glu Ser Glu Tyr		
260	265	270
Gly His Phe Ile Tyr Glu Asp Leu Gly Tyr Ile Asn Glu Ala Gln Arg		
275	280	285
Trp Glu Phe Glu Ala Met Val Val Trp Gly Glu Thr Ala Pro His Leu		
290	295	300
Leu Asn Leu Ala Arg Tyr Asn Ile Val Asn Lys Arg Pro Glu Val Ala		
305	310	315
Arg Arg Phe Ile Asn Leu Leu Lys Gln Ser Leu Phe Tyr Arg Lys Asp		
325	330	335
Ala Glu Glu Leu Glu Lys Gln Leu His Ala Gly Ser Val Pro Gly Leu		

260 265 270
 Gly Ser Ile Thr Ile Arg Gly Lys Asn Ser Ile Asn Ala Ala Ser Pro
 275 280 285
 Leu Val Ile Val Asp Gly Val Pro Gly Thr Met Asp Thr Ile Asp Pro
 290 295 300
 Ser Asp Ile Glu Thr Leu Thr Val Leu Lys Asp Ala Ala Ser Ser Ala
 305 310 315 320
 Ile Tyr Gly Val Gln Ala Ala Asn Gly Val Ile Val Ile Thr Thr Lys
 325 330 335
 Gln Gly Lys Lys Gly Glu Lys Thr His Ile Asn Tyr Ser Gly Ile Val
 340 345 350
 Ser Trp Ala Ser Pro Val Val Lys Arg Gln Tyr Val Asn Ala Tyr Glu
 355 360 365
 His Ala Ile Leu Tyr Asn Glu Ala Val His Asn Glu Asn Pro Asn Ala
 370 375 380
 Val Leu Pro Phe Thr Asp Glu Asp Ile Glu Asn Tyr Arg Asn Gly Thr
 385 390 395 400
 Tyr Pro Ser Thr Asn Trp Tyr Asp Glu Ala Phe Lys Lys Ser Ala Phe
 405 410 415
 Glu Gln Met His Asn Leu Ser Ile Ser Gly Gly Ser Glu Lys Thr Thr
 420 425 430
 Tyr Asn Ala Ser Ile Gly Tyr Thr Asn Gln Gly Gly Leu Thr Asp Glu
 435 440 445
 Ile Ser Tyr Lys Arg Tyr Asn Ala Arg Met Ser Leu Asn Ser Asp Ile
 450 455 460
 Asn Lys Tyr Val Ser Val Gly Val Asn Ala Ser Gly Tyr Arg Gly Ile
 465 470 475 480
 Lys Glu Asp Gly Trp Met Gly Tyr Val Thr Val Ala Gln Gly Val Ser
 485 490 495
 Arg Ser Tyr Pro Thr Asp Pro Val Tyr Ala Glu Asp Gly Ser Phe Asn
 500 505 510
 Tyr Ser Gly Lys Asp Asn Pro Val Ala Ile Gln Asp Gln Ser Gly Phe
 515 520 525
 Thr Arg Ser Thr Ala Gln Gln Leu Asn Ala Thr Ala Tyr Ala Gln Ile
 530 535 540
 Asn Ile Leu Pro Glu Leu Ser Val Lys Gly Val Phe Ser Leu Arg His
 545 550 555 560
 Asp Tyr Thr Asn Gln Glu Gly Phe Lys Lys His Phe Thr Tyr Gly Asn
 565 570 575
 Phe Asp Ser Gly Leu Arg Glu Gly Tyr Asp Glu Tyr Tyr Asn His Asn
 580 585 590
 Arg Tyr Thr Ser Gln Val Leu Ala Asn Tyr Asn Lys Thr Phe Gly Lys
 595 600 605
 His Ser Ile Ala Val Leu Gly Gly Phe Glu Ser Phe Glu His Ile Tyr
 610 615 620
 Lys Phe Thr Lys Ala Ser Arg Lys Gly Gly Gly Asn Asn Glu Leu Thr
 625 630 635 640
 Glu Ser Leu Asn Thr Leu Lys Lys
 645

<210> 9401

<211> 1140

<212> PRT

<213> B.fragilis

<400> 9401

Leu Ile Val Phe Met Lys Lys Cys Asn Leu Arg Trp Phe Ser Pro Gln
 1 5 10 15
 Lys Ile Lys Arg Gln Leu Ala Phe Val Leu Ala Ile Cys Leu Val Cys

Phe	Ser	Met	Val	Pro	Val	Thr	Phe	Val	Ala	Lys	Gln	Ser	Asn	Gly	Asp
			500					505					510		
Trp	Gly	Thr	Val	Asn	Gly	Gly	Gln	Thr	Ala	Thr	Ser	Asn	Phe	Ile	Thr
		515					520					525			
Gly	Asn	Pro	Leu	Arg	Ala	Leu	Ser	Lys	Lys	Asp	Trp	Ser	Lys	Ser	Lys
	530					535					540				
Ser	Glu	Asn	Thr	Met	Tyr	Asp	Leu	Gly	Phe	Asp	Ile	Lys	Pro	Val	Lys
545					550					555					560
Gly	Leu	Ile	Ile	Ser	Gly	Gln	Gly	Val	Phe	Lys	Gly	Tyr	Glu	Tyr	Lys
			565						570					575	
Ser	Lys	Ser	Tyr	Thr	Ala	Leu	Gln	Pro	Asn	Ala	Ile	Asn	Tyr	Phe	Ser
			580					585					590		
Gly	Glu	Glu	Ile	Ala	Gly	Thr	Gly	Val	Thr	Lys	Asn	Lys	Met	Ser	Met
		595					600					605			
Asp	Trp	Gln	Ser	Thr	Asn	Thr	Met	Leu	Tyr	Thr	Ala	Thr	Ala	Arg	Tyr
	610					615					620				
Asp	Trp	Ser	Asn	Asp	Lys	His	Ala	Val	Gly	Ala	Leu	Val	Gly	Thr	Ser
625					630					635					640
Tyr	Glu	His	Tyr	Lys	Tyr	Glu	Arg	Leu	Ala	Gly	Ser	Arg	Glu	Glu	Phe
			645						650					655	
Pro	Ser	Asp	Ala	Leu	Thr	Asp	Met	Glu	Ala	Gly	Ser	Thr	Ser	Gly	Ala
			660					665					670		
Gly	Tyr	Thr	Asn	Gly	Ala	Gly	Ser	Ser	Glu	Tyr	Lys	Met	Leu	Ser	Tyr
		675					680					685			
Phe	Ala	Arg	Val	Asn	Tyr	Thr	Leu	Met	Asp	Arg	Tyr	Leu	Phe	Glu	Val
	690					695					700				
Asn	Met	Arg	Ala	Asp	Ala	Ser	Ser	Arg	Phe	His	Lys	Asp	His	Arg	Trp
705					710					715					720
Gly	Tyr	Phe	Pro	Ser	Phe	Ser	Ala	Gly	Trp	Arg	Met	Ser	Glu	Glu	Ser
			725					730						735	
Phe	Met	Lys	Asp	Ile	Glu	Trp	Ile	Asn	Asn	Leu	Lys	Ile	Arg	Ala	Ser
			740					745					750		
Tyr	Gly	Thr	Leu	Gly	Asn	Ile	Asn	Asn	Val	Gly	Asn	Tyr	Asp	Tyr	Phe
		755					760					765			
Gln	Asn	Tyr	Ser	Ser	Gly	Asn	His	Tyr	Ser	Phe	Ser	Asp	Ser	Pro	Val
	770					775						780			
Ile	Gly	Ile	Gly	Glu	Ser	Lys	Pro	Ala	Asn	Glu	Thr	Leu	Gly	Trp	Glu
785					790					795					800
Lys	Val	Ala	Leu	Thr	Asp	Ile	Gly	Leu	Asp	Phe	Asp	Ile	Phe	Asn	Gly
			805						810				815		
Leu	Leu	Gly	Val	Thr	Ala	Asp	Tyr	Tyr	Ile	Lys	Asn	Thr	Ser	Asp	Ile
			820					825				830			
Leu	Leu	Gly	Tyr	Asn	Val	Pro	Thr	Glu	Thr	Gly	Ile	Thr	Ala	Ala	Pro
		835					840					845			
Ser	Gln	Asn	Ile	Gly	Lys	Val	Lys	Asn	Thr	Gly	Phe	Glu	Leu	Ala	Leu
	850					855					860				
Asn	His	Arg	Asn	Lys	Ile	Gly	Ala	Val	Asn	Tyr	Ser	Ile	Gly	Ala	Asn
865					870					875					880
Ile	Ala	Thr	Asn	Lys	Asn	Lys	Ile	Thr	Asn	Leu	Gly	Gly	Ser	Asp	Asn
			885						890					895	
Ile	Ile	Gln	Thr	Ser	Ser	Tyr	Ile	Val	Lys	Tyr	Ile	Leu	Lys	Lys	Gly
		900						905				910			
Glu	Ser	Ile	Gly	Ser	Phe	Tyr	Gly	Phe	Lys	Thr	Asp	Gly	Leu	Tyr	Thr
		915					920					925			
Gln	Ala	Asp	Ile	Asp	Ala	Gly	His	Tyr	Tyr	Thr	Leu	Ser	Gly	Val	Val
	930					935					940				
Pro	Asn	Ala	Gly	Asp	Ile	Lys	Phe	Val	Pro	Gln	Arg	Asp	Ile	Glu	Tyr
945					950					955					960
Lys	Gln	Glu	Ile	Thr	Asp	Glu	Asp	Arg	Thr	Ile	Leu	Gly	Lys	Asp	Val

965 970 975
 Pro Asp Phe Thr Tyr Gly Val Asn Leu Ser Leu Gln Tyr Lys Gly Phe
 980 985 990
 Glu Phe Ser Met Phe Gly Gln Gly Ile Ser Gly Thr Lys Val Ala Phe
 995 1000 1005
 Asp Val Tyr Gly Val His Pro Phe Tyr His Gly Gln Asp Ser Pro Arg
 1010 1015 1020
 Lys Tyr His Leu Lys Arg Trp Thr Glu Glu Asn Pro Asn Pro His Ala
 1025 1030 1035 1040
 Ala Tyr Pro Arg Ile Tyr Ser Ala Ser Ser Val His Thr Thr Tyr Asn
 1045 1050 1055
 Arg Asn Phe Ser Asp Tyr His Leu Phe Asp Ser Asp Tyr Phe Arg Phe
 1060 1065 1070
 Lys Thr Leu Ser Leu Gly Tyr Thr Val Pro Ser Ala Thr Val Lys Asn
 1075 1080 1085
 Trp Gly Leu Gln Ser Leu Lys Val Tyr Val Thr Gly Glu Asn Leu Phe
 1090 1095 1100
 Thr Val Arg Ala Asp Lys Lys Met Glu Asp Phe Asp Pro Glu Thr Ala
 1105 1110 1115 1120
 Gly Gly Val Ile Tyr Thr Leu Gly Thr Lys Ser Val Ala Phe Gly Val
 1125 1130 1135
 Asn Ile Ser Phe
 1140

<210> 9402
 <211> 591
 <212> PRT
 <213> B.fragilis

<400> 9402
 Lys Ile Glu Phe Thr Met Lys Asn Asn Ile Arg Lys Ile Ala Leu Gly
 1 5 10 15
 Leu Cys Leu Thr Gly Ala Leu Thr Ala Cys Asp Leu Asp Val Val Pro
 20 25 30
 Pro Ala Asp Ile Ala Ala Glu Asn Phe Trp Gln Thr Glu Lys Asp Ala
 35 40 45
 Trp Tyr Ala Leu Asn Thr Cys Tyr Ala Thr Leu Asp Gly Val Asp Ile
 50 55 60
 Trp Asp Glu Leu Cys Thr Asp Asn Ala His Ser His Lys Pro Trp Glu
 65 70 75 80
 Gly Asn Phe Glu Met Val Gln Gln Asn Gly Ile Ser Thr Ala Asn Gly
 85 90 95
 Tyr Gly Ser Tyr Tyr Phe Gly Thr Val Arg Ile Val Asn Asn Phe Ile
 100 105 110
 Ala Asn Ile Asp Lys Cys Ala Val Ser Glu Glu Leu Lys Thr Arg Met
 115 120 125
 Lys Ala Glu Ala Arg Phe Phe Arg Ala Leu Ser Tyr Leu Asp Leu Thr
 130 135 140
 Thr Lys Phe Gly Lys Val Pro Val Ile Thr Glu Val Leu Ala Tyr Asp
 145 150 155 160
 Ala Pro Asn Val Lys Arg Asp Glu Val Glu Thr Val Arg Lys Phe Ile
 165 170 175
 Leu Asp Glu Leu Ala Glu Ile Ala Glu Ile Leu Pro Asp Ser Tyr Asn
 180 185 190
 Gly Ser Tyr Leu Tyr Glu Thr Gly Arg Ile Thr Arg Ala Gly Ala Leu
 195 200 205
 Ala Leu Arg Ala Arg Ala Ala Leu Tyr Phe Gly Asn Tyr Ala Glu Ala
 210 215 220
 Glu Ala Ser Ala Gly Lys Ile Ile Ser Glu Gly His His Ser Leu Phe

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225          230          235          240
Arg Val Ser Ser Leu Thr Thr Ala Gln Gln Lys Glu Ala Asp Glu Met
          245          250          255
Asp Ala Tyr Ile Asp Tyr Ala Thr Lys Gly Ile Asp Lys Asp Lys Phe
          260          265          270
Val Lys Gly Met Phe Ser Tyr Glu Ser Leu Trp His Lys Gly Asn Ala
          275          280          285
Ser Pro Ala Asn Pro Glu Tyr Ile Val Thr Arg Glu Tyr Met Ala Asp
          290          295          300
Ala Asn Asn Tyr Asp Trp Thr Arg Tyr Thr Tyr Phe Ile Pro Lys Ser
305          310          315          320
Phe Ser Gln Tyr Asp Gly Tyr Cys Ser Tyr Glu Pro Met Gln Asp Leu
          325          330          335
Ile Asp Ala Tyr Trp Asp Val Asp Gly Lys Thr Met Arg Asn Asp Ile
          340          345          350
Thr Met Glu Gln Arg Lys Glu Arg Tyr Ala Glu Ile Trp Lys Asp Phe
          355          360          365
Lys Asp Met Ser Gln Ser Gln Phe Ile Glu Lys Val Pro Gln Thr Asp
          370          375          380
Ile Met Lys Tyr Asp Tyr Met Lys Glu Phe Arg Asn Arg Asp Ser Arg
385          390          395          400
Leu Tyr Val Ser Met Met Phe Pro Phe Lys Gly Trp His Glu Thr Ile
          405          410          415
Lys Gly Thr Phe Tyr Phe Arg Trp Asp Pro Asp Leu Ile Asn Lys Asp
          420          425          430
Gly Asn Glu Ser Trp Thr Gly Tyr Phe Tyr Arg Lys Met Val Thr Leu
          435          440          445
Asp Pro Tyr Asp Thr Trp Thr Ala Glu Glu Asp Tyr Pro Val Ile Arg
          450          455          460
Tyr Ala Glu Val Leu Leu Thr Tyr Ala Glu Ala Arg Ile Gln Asn Ser
465          470          475          480
Gly Trp Asp Thr Glu Val Gln Lys Ala Leu Asn Asp Leu Arg Asp Arg
          485          490          495
Cys Gly Met Pro Asp Val Pro Thr Thr Met Pro Ser Lys Glu Glu Ala
          500          505          510
Leu Ala Phe Val Arg Asn Glu Arg Arg Ile Glu Leu Ala Ala Glu Gly
          515          520          525
His Arg Phe Asp Asp Ile Arg Arg Tyr Gly Asn Asp Tyr Cys Ser Lys
          530          535          540
Ala Met Asn Gly Pro Ser Tyr Ala Pro Asn Gly Tyr Val Val Ile Asn
545          550          555          560
Lys Val Trp Asp Asn Arg Leu Met Leu Met Pro Ile Pro Gln Gly Ala
          565          570          575
Ile Asp Leu Asn Pro Leu Leu Lys Asp Asp Gln Asn Pro Gly Tyr
          580          585          590

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<210> 9403

<211> 169

<212> PRT

<213> B.fragilis

<400> 9403

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Leu Gly Met Phe Asp Ile His Phe Val Thr His Asp Gln Leu Thr Glu
1          5          10          15
Ile Ile Leu Leu Glu Val Ile Arg Leu Lys Ser Ser Ala Trp Asn Tyr
          20          25          30
Ser Tyr Glu Asp Gln Val Ser Trp Ile Asn Thr His Ile Lys Asp Ser
          35          40          45
Asp Leu His Cys Phe Leu Ser Glu Asp Gly Val Asn Val Gly Tyr Leu

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      50                      55                      60
Asn Leu Ile Glu Thr Asn Ile Ile Val Asp Asp Leu Ser Tyr Arg Ala
65                      70                      75                      80
Tyr Gly Val Gly Asn Val Cys Ser Ile Val Arg Lys Lys Gly Tyr Gly
      85                      90                      95
Ser Ile Leu Leu Asn Tyr Val Asn Asp Phe Ile Val Asn Lys Glu Tyr
      100                      105                      110
Ile Gly Val Leu Leu Cys Lys Pro Glu Leu Ser His Phe Tyr Asn Lys
      115                      120                      125
Ser Gly Trp Lys Leu Val Pro Tyr Leu Lys Leu Leu Cys Glu Phe Ser
      130                      135                      140
Leu Thr Asn Ile Glu Met Met Thr Tyr Asn Cys Glu Phe Asn Tyr Lys
145                      150                      155                      160
Gln Ile Ile Tyr Lys Gly Gly Pro Phe
      165

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<210> 9404
 <211> 87
 <212> PRT
 <213> B.fragilis

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<400> 9404
Asn Val Val Pro Leu Pro Asp Leu Leu Arg Val Gln Glu Asn Leu Tyr
1                      5                      10                      15
Val Val Pro Cys Glu Gln Val Arg Arg Cys Cys Asn Phe Tyr Glu Asp
      20                      25                      30
Cys Leu Asn Ala Gly Gly Thr Glu Gln Glu Arg Gly Tyr Gly Arg Ser
      35                      40                      45
Ile Leu Lys Asp Phe Ser Asn Asp Ala Gln Ile Lys Ser Leu Gln Ser
      50                      55                      60
Asp Gly Tyr Asn Val Tyr Met Tyr Leu Asp Asp Glu Leu Ile Glu Val
65                      70                      75                      80
Pro Pro Cys Pro Cys Ala Glu
      85

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<210> 9405
 <211> 161
 <212> PRT
 <213> B.fragilis

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<400> 9405
Val Met Asn Thr Leu Thr Ser Gln Ile Glu Gln Leu Gln Ser Leu Ala
1                      5                      10                      15
His Glu Leu Leu Tyr Leu Gly Val Asp Gly Ala Pro Ile Tyr Thr Asp
      20                      25                      30
His Phe Arg Gln Leu Asn Lys Glu Val Leu Glu Gln Ser Asp Ala Leu
      35                      40                      45
Tyr Pro Gln Arg Gly Ala Thr Ser Glu Glu Glu Ala Asn Ile Cys Leu
      50                      55                      60
Ala Leu Leu Met Gly Tyr Asn Ala Thr Ile Tyr Asn Gln Gly Asp Lys
65                      70                      75                      80
Glu Glu Lys Lys Gln Val Val Leu Asn Arg Cys Trp Asp Val Leu Asp
      85                      90                      95
Gln Leu Pro Ala Thr Leu Leu Lys Cys Gln Leu Leu Thr Tyr Cys Tyr
      100                      105                      110
Gly Glu Val Phe Glu Glu Glu Leu Ala Lys Glu Ala His Thr Ile Ile
      115                      120                      125
Glu Ser Trp Lys Asp Lys Glu Leu Ser Glu Asp Lys Lys Glu Ala Ile
      130                      135                      140

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Asn Asn Leu Arg Asn Leu Glu Glu Asn Pro Tyr Pro Tyr Ser Glu Met
 145 150 155 160
 Glu

<210> 9406
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 9406
 Leu Pro Leu Thr Lys Glu Ile Asp Glu Val His Gln Tyr Pro Asn Val
 1 5 10 15
 Lys Leu Met Thr Glu Asp Ser Gln Tyr Lys His Glu Thr Tyr Leu Gln
 20 25 30
 Thr Asp Lys Leu Leu Leu Pro Leu Gln Tyr Ser His Tyr Thr Ile Ser
 35 40 45
 Cys Val Ile Leu Ala Leu Lys Tyr Gln Gln Glu Glu Asp Lys Val Ser
 50 55 60
 Leu Lys Val Ser Leu Leu Phe Ile Leu Phe Ile Tyr Thr
 65 70 75

<210> 9407
 <211> 94
 <212> PRT
 <213> B.fragilis

<400> 9407
 Leu Ser Arg Thr His Ile Leu Ser Val Ile Gly Leu Tyr Leu Gly Cys
 1 5 10 15
 Lys Asn Ser Ile Glu Leu Thr Phe Lys Ser Glu Lys Asp Ile Met Arg
 20 25 30
 Cys Ile Asp Thr Val Thr Ile Thr Ile Ser Lys Met Glu Ile Asp Leu
 35 40 45
 Pro Lys Ile Glu Ile Val Lys Gln Cys Gly Met Ile Ala Ala Asn Thr
 50 55 60
 Val Phe Leu Ile Asn Ser Leu Thr Ser Asn Ile Pro Tyr Met Phe Leu
 65 70 75 80
 Asp Arg Leu Arg Gly Val Lys Val Thr Trp Asp Lys Ile Lys
 85 90

<210> 9408
 <211> 76
 <212> PRT
 <213> B.fragilis

<400> 9408
 Ala Thr Asn Ala Leu Arg Ala Ala Gly Asp Val Asn Tyr Pro Phe Tyr
 1 5 10 15
 Val Gly Leu Val Val Met Trp Ser Val Ala Val Gly Ile Gly Tyr Leu
 20 25 30
 Phe Gly Ile Tyr Trp Ala Trp Gly Ile Cys Gly Met Trp Val Ala Phe
 35 40 45
 Ala Leu Asp Glu Asn Ile Arg Gly Ile Ile Phe Val Arg Arg Trp Tyr
 50 55 60
 Gly Met Lys Trp Val Asn Lys Ser Phe Val Arg Ser
 65 70 75

<210> 9409

<211> 85
 <212> PRT
 <213> B.fragilis

<400> 9409

Ala	Glu	Lys	Ala	Gly	Thr	Asn	Leu	Gln	Pro	Gln	Gly	Ile	Tyr	Lys	Asp
1				5				10						15	
Asn	Glu	Pro	Glu	Thr	Leu	Gly	Val	Ile	Gln	His	Leu	Arg	Ile	Asn	Gly
			20					25					30		
Gln	Ser	Glu	Val	Pro	Gly	Gln	Asn	Ala	Gly	Lys	Lys	Asp	Lys	Gly	Asn
			35				40					45			
Ala	Lys	Arg	Asn	Ala	Thr	Asn	Met	Asn	Phe	Ala	Gln	Ser	Glu	Pro	Asn
			50				55				60				
Gly	Gly	Asn	Gln	Gly	Lys	Asn	Asp	Asn	Cys	Leu	Gln	Ser	Arg	Met	Phe
65					70					75					80
Asp	Lys	Glu	Thr	Ile											
				85											

<210> 9410
 <211> 402
 <212> PRT
 <213> B.fragilis

<400> 9410

Ile	Met	Lys	Ala	Cys	Phe	Met	Gly	Leu	Gly	Tyr	Ile	Gly	Leu	Pro	Thr
1				5				10						15	
Ala	Ile	Ile	Ala	Ala	Lys	His	Gly	Ile	Gln	Ile	Thr	Gly	Val	Asp	Ile
			20					25					30		
Asn	Pro	Lys	Val	Val	Glu	Met	Thr	Asn	Leu	Gly	Lys	Leu	His	Ile	Ile
			35				40					45			
Glu	Pro	Gly	Met	Gln	Ala	Leu	Leu	Gln	Glu	Val	Val	Ser	Ser	Gly	Trp
			50			55					60				
Leu	Lys	Ala	Ser	Thr	Thr	Pro	Asp	Val	Ser	Asp	Ala	Tyr	Phe	Val	Val
65					70					75					80
Val	Pro	Thr	Pro	Phe	Lys	Gly	Asn	His	Glu	Pro	Asp	Ile	Ser	Tyr	Val
				85				90						95	
Glu	Thr	Ala	Thr	Arg	Ala	Val	Ile	Pro	Phe	Leu	Lys	Glu	Gly	Asp	Leu
			100					105					110		
Tyr	Val	Ile	Glu	Ser	Thr	Ser	Pro	Val	Gly	Thr	Thr	Asp	Lys	Met	Ala
			115				120					125			
Asp	Leu	Ile	Phe	Asp	Leu	Arg	Pro	Glu	Leu	Lys	Asp	Lys	Leu	Tyr	Ile
						135					140				
Ala	Tyr	Cys	Pro	Glu	Arg	Val	Leu	Pro	Gly	Asn	Val	Ile	Tyr	Glu	Leu
145					150					155					160
Val	His	Asn	Asp	Arg	Val	Ile	Gly	Gly	Ile	Asn	Glu	Ala	Ser	Thr	Asp
				165						170				175	
Lys	Ala	Ile	Glu	Phe	Tyr	Ser	His	Phe	Val	Gln	Gly	Thr	Leu	His	Arg
			180					185					190		
Thr	Asn	Cys	Lys	Thr	Ala	Glu	Met	Cys	Lys	Leu	Thr	Glu	Asn	Ser	Ser
			195				200					205			
Arg	Asp	Val	Gln	Ile	Ala	Phe	Ala	Asn	Glu	Leu	Ser	Leu	Ile	Cys	Asp
			210			215					220				
Lys	Ala	Gly	Ile	Asn	Val	Trp	Glu	Leu	Ile	Ser	Leu	Ala	Asn	Lys	His
225					230					235					240
Pro	Arg	Val	Asn	Ile	Leu	Gln	Pro	Gly	Cys	Gly	Val	Gly	Gly	His	Cys
				245					250					255	
Ile	Ala	Val	Asp	Pro	Tyr	Phe	Ile	Thr	Ser	Asn	Phe	Pro	Met	Glu	Ser
			260					265					270		
Lys	Ile	Ile	Ser	Thr	Ala	Arg	Glu	Ile	Asn	Asn	Tyr	Lys	Ala	Phe	Trp

275	280	285
Cys Ala Glu Lys Val Gln Asn Ser Met Leu Lys Phe Glu Leu Glu His		
290	295	300
His Arg Arg Pro Ala Ile Ala Met Met Gly Leu Ala Phe Lys Pro Asp		
305	310	315
Ile Asp Asp Leu Arg Glu Ala Pro Ala Lys Tyr Ile Thr Thr Lys Val		
	325	330
Met Gln Ser Cys Asn Asn Ala Asp Ile Met Val Val Glu Pro Asn Val		
	340	345
Gln Glu His Asn Val Phe Lys Leu Thr Asp Tyr Lys Glu Ala Tyr Thr		
	355	360
Lys Ala Asp Ile Val Val Phe Leu Val Ala His Thr Ser Phe Lys Ser		
	370	375
Leu Pro Tyr Asp Glu Thr Lys Val Ile Leu Asp Phe Cys Gly Ile Ser		
385	390	395
Lys Arg		400

<210> 9411

<211> 431

<212> PRT

<213> B.fragilis

<400> 9411

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe		
1	5	10
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro		
	20	25
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr		
	35	40
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly		
	50	55
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser		
65	70	75
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala		
	85	90
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly		
	100	105
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile		
	115	120
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp		
	130	135
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys		
145	150	155
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile		
	165	170
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val		
	180	185
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu		
	195	200
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys		
	210	215
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr		
225	230	235
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu		
	245	250
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn		
	260	265
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile		

275	280	285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu		
290	295	300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg		
305	310	315
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe		
325	330	335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe		
340	345	350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn		
355	360	365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu		
370	375	380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val		
385	390	395
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr		
405	410	415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly		
420	425	430

<210> 9412

<211> 81

<212> PRT

<213> B.fragilis

<400> 9412

Ile Asn Ser Tyr Met Asn Asp Ile Phe Asp Glu Leu Val Ser Ser Asn		
1	5	10
Tyr Trp Asn Gly Lys Leu Pro Lys Val Glu Phe Ala Arg Lys Ser Tyr		
20	25	30
Thr Asn Arg Ile Phe Gly Tyr Val Gly Asn Arg Leu Val Lys Val Leu		
35	40	45
Thr Gly Gln Arg Gly Val Gly Lys Gly Cys Leu Leu Arg Gln Ile Ile		
50	55	60
Tyr Gln Leu Met Arg Trp Gly Val Ser Ser Arg Asp His Ser Ile Tyr		
65	70	75
Lys		80

<210> 9413

<211> 278

<212> PRT

<213> B.fragilis

<400> 9413

Pro Ile Asn Gln Gln His Asn Asn Leu Thr Ile Met Ala Thr Thr Tyr		
1	5	10
Asp Gly Ile Asn Tyr Phe Pro Ile Ala Val Asn Phe Met Glu Glu Asn		
20	25	30
Ala Met Glu Val Ile Glu Ala Lys Tyr Gly Met Lys Gly Leu Ala Ile		
35	40	45
Val Leu Lys Leu Leu Cys Lys Ile Tyr Lys Glu Gly Tyr Tyr Ile Pro		
50	55	60
Trp Gly Glu Glu Gln Cys Leu Ile Phe Ala Asn Lys Thr Gly Lys Glu		
65	70	75
Ala Asp Ala Glu Glu Val Gln Gly Ile Ile Glu Ile Met Ile Glu Lys		
85	90	95
Gly Met Ile Asp Arg Gly Ser Tyr Ala Glu His Lys Val Leu Thr Ser		
100	105	110

Glu Ala Ile Gln Lys Val Trp Ile Glu Ala Thr Lys Arg Arg Lys Arg
 115 120 125
 Asn Trp Thr Ala Met Pro Tyr Leu Leu Ile Lys Pro Lys Glu Thr Cys
 130 135 140
 Asn Glu Glu Lys Thr Val Cys Thr Gln Asn Val Glu Gln Asp Ala Gly
 145 150 155 160
 Ser Asp Ala Lys Asn Ala Cys Asn Thr Glu Gln Ser Lys Val Lys Gln
 165 170 175
 Ser Arg Glu Phe Pro Pro Ser Ala Pro Pro Arg Gly Lys Glu Glu Glu
 180 185 190
 Val Asn Ala Thr Pro Val Ser Met Pro Gly Tyr Ala Phe Asn Thr Met
 195 200 205
 Thr His Asn Tyr Val Gly Leu Met Gly Asn Leu Glu Arg Phe Gly Ile
 210 215 220
 Thr Asp Glu Lys Glu Ile Glu Ala Ile Leu Arg Leu Ser Asp Tyr Gly
 225 230 235 240
 Arg Lys Gly Thr Pro Val Trp Lys Leu Ile Cys Ser Thr Asn Trp Ser
 245 250 255
 Asn Ile Gly Ala Lys Gly Lys Tyr Met Ile Ala Ala Leu Asn Arg Ala
 260 265 270
 Lys Lys Arg Ser Gly Thr
 275

<210> 9414
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 9414
 Met Ser Glu Gln Gln Lys Tyr Trp Phe Ala Ala Arg Thr Arg Asp Lys
 1 5 10 15
 Gln Glu Phe Ala Ile Arg Asp Ser Leu Glu Lys Leu Lys Thr Glu Leu
 20 25 30
 Asp Leu Asn Tyr Tyr Leu Pro Thr Gln Phe Val Ile Arg Gln Leu Lys
 35 40 45
 Tyr Arg Arg Lys Arg Val Glu Val Pro Val Ile Lys Asn Leu Ile Phe
 50 55 60
 Ile Gln Ala Thr Lys Gln Asp Ala Cys Asp Ile Ser Asn Lys Tyr Asn
 65 70 75 80
 Ile Gln Leu Phe Phe Pro Lys Asp Leu Leu Thr Arg Ala Met Leu Ile
 85 90 95
 Val Pro Asp Lys Gln Met Gln Asp Phe Ile Phe Val Met Asp Leu Asp
 100 105 110
 Pro Asn Gly Val Ser Phe Asp Asn Asp His Leu Ser Val Gly Ser Arg
 115 120 125
 Val Gln Val Val Lys Gly Asp Phe Cys Gly Val Glu Gly Glu Leu Ala
 130 135 140
 Ser Glu Ala Asn Lys Thr Tyr Val Val Ile Arg Ile Ala Gly Val Leu
 145 150 155 160
 Ser Ala Ser Val Lys Val Pro Lys Ser Tyr Leu Arg Val Ile
 165 170

<210> 9415
 <211> 565
 <212> PRT
 <213> B.fragilis

<400> 9415
 Leu Tyr Leu His Asn Leu Ser Ser Asn Val Gln Lys Thr Met Glu Gln

1		5		10		15									
Ser	Phe	Ile	Ala	Tyr	Ile	Glu	Asn	Ser	Ile	Lys	Asn	Asn	Trp	Asp	Leu
		20						25					30		
Asp	Ala	Leu	Thr	Asp	Tyr	Lys	Gly	Ala	Thr	Leu	Gln	Tyr	Lys	Asp	Val
		35					40					45			
Ala	Arg	Lys	Ile	Glu	Lys	Leu	His	Ile	Ile	Phe	Glu	Glu	Ser	Gly	Ile
		50				55					60				
Arg	Lys	Gly	Asp	Lys	Ile	Ala	Val	Cys	Gly	Arg	Asn	Ser	Ser	His	Trp
65					70					75					80
Gly	Val	Thr	Phe	Leu	Ala	Thr	Leu	Thr	Tyr	Gly	Ala	Val	Ile	Val	Pro
			85						90					95	
Ile	Leu	His	Glu	Phe	Lys	Ala	Asp	Asn	Val	His	Asn	Ile	Val	Asn	His
		100						105					110		
Ser	Glu	Ala	Lys	Leu	Leu	Phe	Val	Gly	Asp	Val	Val	Trp	Glu	Asn	Leu
		115					120					125			
Asn	Glu	Ser	Ala	Met	Pro	Leu	Leu	Glu	Gly	Ile	Leu	Met	Met	Asn	Asp
		130				135					140				
Phe	Thr	Leu	Leu	Val	Ser	Arg	Ser	Glu	Arg	Leu	Thr	His	Ala	Arg	Glu
145					150					155					160
His	Leu	Asn	Glu	Met	Phe	Gly	Lys	Lys	Phe	Pro	Lys	Asn	Phe	Arg	Lys
			165						170					175	
Glu	His	Ile	Glu	Tyr	His	Lys	Asp	Gln	Pro	Glu	Glu	Leu	Ala	Val	Ile
		180						185					190		
Asn	Tyr	Thr	Ser	Gly	Thr	Thr	Ser	Tyr	Ser	Lys	Gly	Val	Met	Leu	Pro
		195					200					205			
Tyr	Arg	Ser	Leu	Trp	Ser	Asn	Thr	Ala	Phe	Ala	Phe	Glu	Val	Leu	Pro
		210				215					220				
Leu	Lys	Ala	Gly	Asp	Lys	Ile	Val	Ser	Met	Leu	Pro	Met	Ala	His	Met
225					230					235					240
Tyr	Gly	Leu	Ala	Phe	Glu	Phe	Leu	Tyr	Glu	Phe	Ala	Val	Gly	Cys	Gln
			245						250					255	
Ile	Tyr	Phe	Leu	Thr	Arg	Met	Pro	Ser	Pro	Lys	Ile	Ile	Phe	Gln	Ala
		260						265					270		
Phe	Ala	Asp	Val	Lys	Pro	Asn	Leu	Ile	Val	Ala	Val	Pro	Leu	Ile	Ile
		275					280					285			
Glu	Lys	Ile	Ile	Lys	Lys	Ser	Val	Leu	Pro	Lys	Leu	Glu	Thr	Pro	Thr
		290				295					300				
Met	Lys	Leu	Leu	Leu	Lys	Val	Pro	Ile	Ile	Asn	Asp	Lys	Ile	Lys	Ala
305					310					315					320
Thr	Val	Arg	Glu	Glu	Met	Ile	Lys	Gly	Phe	Gly	Gly	Asn	Phe	Glu	Ala
			325						330					335	
Val	Ile	Val	Gly	Gly	Ala	Ala	Phe	Asn	Gln	Glu	Val	Glu	Gln	Phe	Leu
		340						345					350		
Arg	Met	Ile	Asp	Phe	Pro	Tyr	Thr	Val	Gly	Tyr	Gly	Met	Thr	Glu	Cys
		355					360					365			
Gly	Pro	Ile	Ile	Cys	Tyr	Glu	Asp	Trp	Lys	Arg	Phe	Lys	Pro	Gly	Ser
		370				375					380				
Cys	Gly	Lys	Ala	Ala	Leu	Asn	Met	Glu	Val	Lys	Val	Leu	Ser	Pro	Asp
385					390					395					400
Pro	Glu	Asn	Val	Val	Gly	Glu	Ile	Val	Cys	Lys	Gly	Pro	Asn	Val	Met
			405						410					415	
Leu	Gly	Tyr	Tyr	Lys	Asn	Glu	Glu	Ala	Thr	Ala	Gln	Val	Ile	Asp	Lys
		420						425					430		
Asp	Gly	Trp	Leu	His	Thr	Gly	Asp	Leu	Ala	Leu	Glu	Asp	Ala	Glu	Gly
		435					440					445			
Asn	Ile	Thr	Ile	Lys	Gly	Arg	Ser	Lys	Asn	Met	Leu	Leu	Ser	Ala	Ser
		450				455					460				
Gly	Gln	Asn	Ile	Tyr	Pro	Glu	Glu	Ile	Glu	Asp	Lys	Leu	Asn	Asn	Leu
465					470					475					480

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500

Pro Tyr Val Ala Glu Ser Ile Ile Val Gln Gln Asn Asp Lys Leu Val
 485 490 495
 Gly Leu Val Tyr Pro Asp Phe Asp Glu Ala Phe Ala His Gly Leu Lys
 500 505 510
 Asn Glu Asp Met Glu Arg Val Met Glu Glu Asn Arg Val Thr Leu Asn
 515 520 525
 Glu Met Leu Pro Ala Tyr Ser Gln Ile Ser Lys Met Lys Ile Tyr Pro
 530 535 540
 Glu Glu Phe Glu Lys Thr Pro Lys Lys Ser Ile Lys Arg Phe Leu Tyr
 545 550 555 560
 Gln Glu Ala Lys Gly
 565

<210> 9416
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9416
 Leu Ser Leu Gln His Cys Pro Val Val Thr Ala Glu Gly His Val Leu
 1 5 10 15
 Ile Phe Asp Asn Gly Tyr Gly Cys Asn Phe Ser Gly Ser Asn Arg His
 20 25 30
 Ser Arg Gly Glu Tyr Lys Ile Val Gly Leu Asp Val Glu Gln Ile Trp
 35 40 45
 Glu Tyr Gly Lys Glu Arg Gly Glu Asp Phe Phe Ser Pro Ile Thr Ser
 50 55 60
 Glu Val Gln Tyr Ile Glu Glu Ser
 65 70

<210> 9417
 <211> 103
 <212> PRT
 <213> B.fragilis

<400> 9417
 Gln Cys Ser Gln Val Tyr Tyr Asp Ala Tyr Ser Lys Cys Val Ala Val
 1 5 10 15
 Leu Ser Leu Ser Cys Phe Ala Gly Gly Glu Asn Ser Phe Val Ser Leu
 20 25 30
 Glu Gly Met Asn Val Ala Ala His Lys Gly Gly Tyr Gly Gln Ser Ser
 35 40 45
 Ile Phe Arg Asp Gly Gly Arg Lys Ser Gly Gly Leu Met Arg Val Gly
 50 55 60
 Ser Phe Arg Ala Pro Asn Gly Trp Gly Glu Tyr Ala Asn Glu Lys Asn
 65 70 75 80
 Gln Ala Arg Ala Lys Leu Val Ile Phe Pro Thr Asn Tyr Ile Asp Lys
 85 90 95
 Asp Ser Lys Lys Ser Asn Arg
 100

<210> 9418
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9418
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15

Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9419
 <211> 114
 <212> PRT
 <213> B.fragilis

<400> 9419
 Phe Arg Trp His Ile Arg Val Asn Leu Tyr Gly Tyr Arg Leu Val Gly
 1 5 10 15
 Arg Phe Phe Pro Val Tyr Ser Gly Ser Gly Cys Lys Gly Val Thr Tyr
 20 25 30
 Lys Lys Asp Ile Val Asp Asp Leu Ile Glu His Lys Cys Asp Cys Ser
 35 40 45
 Lys Leu Pro Ala Gly Thr Val Ile Leu Lys Val Met Lys Arg Gln Asn
 50 55 60
 Leu Pro Ile Trp Val Asp Lys Gly Thr Val Gln Leu Asn Lys Leu Ile
 65 70 75 80
 Pro Ala Leu Lys Gly Ile Ala Leu Glu Leu Gly Ser Asn Val His Val
 85 90 95
 Asp Glu Thr Trp Cys Arg Tyr Arg Thr Cys Phe Glu Tyr Lys Lys Ile
 100 105 110
 Tyr Met

<210> 9420
 <211> 129
 <212> PRT
 <213> B.fragilis

<400> 9420
 Lys Pro Asp Asn Asn Ser Leu Ile Asn Leu Lys Lys Ser Ile Met Lys
 1 5 10 15
 Lys Asn Arg Lys Ala Val Ser Lys Asn Glu Met Met Lys Gly Lys Trp
 20 25 30
 Lys Arg Gln Ile Met Leu Glu Lys Asp Tyr Thr Glu Gln Cys Ser Glu
 35 40 45
 Trp Met Ala Glu Arg Leu Glu Ala Leu Ile Glu Tyr Met Gln Tyr Gly
 50 55 60
 His Ala Ala Val Ala Tyr Met Lys Gln Asp Gly Thr Phe Lys Leu Val
 65 70 75 80
 Lys Gly Thr Leu Val Gly Tyr Glu Lys Asp Phe Gly Lys Gln Tyr Asp
 85 90 95
 Pro Met Glu Ile Lys Asn Thr Val Val Tyr Arg Asp Val Glu Gln Gln
 100 105 110
 Arg Trp Met Thr Phe Lys Ile Glu Asn Phe Met Glu Trp Arg Ala Ile
 115 120 125
 Val

<210> 9421
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 9421

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Leu Arg Leu Asn Met Ile Asp Arg Met Asp Lys Asn Ala Lys Ile Tyr
1          5          10          15
Val Ala Gly His His Gly Leu Val Gly Ser Ala Ile Trp Lys Asn Leu
20          25          30
Gln Glu Lys Gly Tyr Thr Asn Leu Val Gly Arg Thr His Lys Glu Leu
35          40          45
Asp Leu Leu Asp Gly Ala Ala Val Lys Gln Phe Phe Asp Glu Glu Met
50          55          60
Pro Glu Tyr Val Phe Leu Ala Ala Ala Phe Val Gly Gly Ile Met Ala
65          70          75          80
Asn Ser Ile Tyr Arg Ala Asp Phe Ile Tyr Lys Asn Leu Gln Ile Gln
85          90          95
Gln Asn Val Ile Gly Glu Ser Phe Arg His Gln Val Lys Lys Leu Leu
100         105         110
Phe Leu Gly Ser Thr Cys Ile Tyr Pro Arg Asp Ala Glu Gln Pro Met
115         120         125
Lys Glu Asp Val Leu Leu Thr Ser Pro Leu Glu Tyr Thr Asn Glu Pro
130         135         140
Tyr Ala Ile Ala Lys Ile Ala Gly Leu Lys Met Cys Glu Ser Phe Asn
145         150         155         160
Leu Gln Tyr Gly Thr Asn Tyr Ile Ala Val Met Pro Thr Asn Leu Tyr
165         170         175
Gly Pro Asn Asp Asn Phe Asp Leu Glu Arg Ser His Val Leu Pro Ala
180         185         190
Met Ile Arg Lys Ile His Leu Ala His Cys Leu Lys Lys Gly Asp Trp
195         200         205
Glu Ala Val Arg Lys Asp Met Asn Leu Arg Pro Val Glu Gly Ile Ser
210         215         220
Gly Ala Asn Ser Asn Glu Glu Ile Leu Arg Ile Leu Arg Lys Tyr Gly
225         230         235         240
Ile Thr Glu Thr Glu Val Thr Leu Trp Gly Thr Gly Thr Pro Leu Arg
245         250         255
Glu Phe Leu Trp Ser Glu Glu Met Ala Asp Ala Ser Val Phe Val Met
260         265         270
Glu His Val Asp Phe Lys Asp Thr Tyr Lys Ala Gly Ala Lys Asp Ile
275         280         285
Arg Asn Cys His Ile Asn Ile Gly Thr Gly Lys Glu Ile Thr Ile Arg
290         295         300
Glu Leu Ala Gly Leu Ile Val Asn Thr Val Gly Tyr Gln Gly Lys Leu
305         310         315         320
Thr Phe Asp Ser Ser Lys Pro Asp Gly Thr Met Arg Lys Leu Thr Asp
325         330         335
Pro Ser Lys Leu His Asn Leu Gly Trp His His Lys Ile Asp Ile Glu
340         345         350
Glu Gly Val Gln Arg Met Tyr Glu Trp Tyr Leu Gly
355         360

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<210> 9422
 <211> 386
 <212> PRT
 <213> B.fragilis

<400> 9422

Leu Met Lys Lys Ile Ile Leu Val Ala Ala Leu Leu Ser Ala Ala Val
 1 5 10 15
 Cys Leu Pro Ala Gln Asn Lys Gly Gly Asn Lys Ser Gly Gly Ile Asn
 20 25 30
 Leu Ser Leu Trp Lys Lys Ala Cys Thr Gln Pro Leu Asp Ser Thr Gln
 35 40 45
 Thr Thr Tyr Val Asn Leu Gly Leu Phe Ser Ala Met His Lys Leu His
 50 55 60
 Gly Val Gly Phe Asn Ala Phe Gly Ser Met Val Gln Asn Asn Met Asn
 65 70 75 80
 Gly Val Gln Ile Ser Gly Leu Ala Asn Leu Ala Gly Gly Ser Met His
 85 90 95
 Gly Val Gln Ile Gly Gly Ile Ser Asn Val Asn Gly Asn Asn Leu Ala
 100 105 110
 Gly Leu Ser Val Ser Gly Leu Val Asn Ile Thr Gly Asn Lys Ala Lys
 115 120 125
 Gly Val Leu Ile Thr Gly Leu Ser Asn Ile Ala Gly Asp Asn Met Arg
 130 135 140
 Gly Leu Met Met Ser Gly Ile Met Asn Ile Thr Gly Asp Lys Ala Ala
 145 150 155 160
 Gly Val Gln Leu Ala Gly Leu Ala Asn Val Thr Gly Glu Glu Tyr Asp
 165 170 175
 Gly Leu Met Met Ser Gly Leu Leu Asn Val Val Gly Glu Glu Met Asn
 180 185 190
 Gly Leu Gln Leu Ser Gly Leu Ala Asn Val Thr Gly Gly Gln Met Asn
 195 200 205
 Gly Val Gln Leu Gly Leu Phe Asn Phe Ala Ser Lys Ala Lys Gly Leu
 210 215 220
 Gln Ile Gly Leu Phe Asn Tyr His Lys Glu Asp Met Lys Gly Leu Gln
 225 230 235 240
 Leu Gly Leu Val Asn Ala Asn Pro Gln Thr Lys Val Gln Leu Met Val
 245 250 255
 Phe Gly Gly Asn Ser Thr Lys Ile Asn Val Gly Ala Arg Phe Lys Asn
 260 265 270
 Lys Leu Phe Tyr Thr Ile Leu Gly Gly Gly Thr His Tyr Leu Asp Phe
 275 280 285
 Asp Asp Lys Phe Ser Ala Ala Leu Phe Tyr Arg Ala Gly Leu Glu Leu
 290 295 300
 Pro Leu Tyr Arg Asn Leu Phe Val Ser Gly Asp Leu Arg Tyr Gln His
 305 310 315 320
 Ile Glu Thr Phe Arg Asn Lys Lys Val Glu Gly Ile Pro Ala Arg Leu
 325 330 335
 Tyr Ala Leu Gln Ala Arg Leu Asn Leu Glu Tyr Arg Phe Thr Asp Lys
 340 345 350
 Phe Gly Leu Phe Val Thr Gly Gly Tyr Gly Gly Ser Arg Tyr Tyr Asn
 355 360 365
 Lys Ala Arg Thr Tyr Asp Lys Gly Val Ile Ala Glu Ala Gly Val Val
 370 375 380
 Leu Phe
 385

<210> 9423

<211> 83

<212> PRT

<213> B.fragilis

<400> 9423

His Val Asp Leu Phe Ser Ile Arg Leu Tyr Leu Cys Cys Thr Phe Lys
 1 5 10 15

Asn Asn Phe Met Tyr Ser Ser Ser Asp Phe Glu Lys Tyr Asn Phe Ser
 20 25 30
 Thr Arg Gln Arg Val Asn Pro Lys Gly Ile Ser Ile Asn Ser Phe Cys
 35 40 45
 Leu Ile Gln Gly Val Leu Tyr Arg Asn Phe Asn Thr Trp Phe Val Lys
 50 55 60
 Thr Arg Lys Arg Ile Val Pro Val Gln Ile Glu Gly Phe Leu Phe Leu
 65 70 75 80
 Ile Ser Leu

<210> 9424
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9424
 Arg Cys Arg Leu Ala His Val Arg Asn Lys Phe Lys Asp Ala Tyr Asn
 1 5 10 15
 Gln Gly Tyr Arg Lys Ala Arg Phe Phe Leu Glu Gln Val Ala Lys Leu
 20 25 30
 Tyr Lys His Glu Asp Asp Tyr Arg Arg Asp Asn Leu Leu Ala Thr Glu
 35 40 45
 Thr Lys Glu Lys Cys Asn Asp Ile Tyr Ile Asn Gly Ile Val Asp Ala
 50 55 60
 Leu Cys Asp Gly Leu
 65

<210> 9425
 <211> 63
 <212> PRT
 <213> B.fragilis

<400> 9425
 Ser Arg Leu Leu Val Ser Gly Ala Leu Lys Tyr Asp Leu Asn Tyr Thr
 1 5 10 15
 Asp Ser Leu Asn Asn Ser Val Phe Pro Asn Thr Asn Phe Val Ser Thr
 20 25 30
 Arg Ile Ile Glu Val Asp Ser Lys Asn Asn Val Ser Phe Glu Met Leu
 35 40 45
 Tyr Lys Ser Gln Lys Met Asp Met Thr Phe Arg Met Gln Lys Met
 50 55 60

<210> 9426
 <211> 390
 <212> PRT
 <213> B.fragilis

<400> 9426
 Ile Leu Phe Cys Phe Met Lys Lys Val Val Leu Val Phe Gly Thr Arg
 1 5 10 15
 Pro Glu Ala Ile Lys Met Ala Pro Ile Val Lys Glu Phe Gln Lys His
 20 25 30
 Pro Asp Glu Phe Lys Thr Ile Val Cys Val Thr Gly Gln His Arg Glu
 35 40 45
 Met Leu Asp Gln Val Leu Asn Ile Phe Glu Ile Thr Pro Asp Tyr Asp
 50 55 60
 Leu Asn Ile Met Lys Gln Gly Gln Asp Leu Tyr Asp Ile Thr Ser Arg
 65 70 75 80

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Val Leu Thr Gly Met Arg Asp Val Leu Arg Glu Ser Gln Pro Asp Ile
      85                      90                      95
Val Leu Val His Gly Asp Thr Thr Thr Ser Met Ala Ser Ala Leu Ala
      100                    105                    110
Ala Phe Tyr Gln Gln Ile Pro Val Gly His Ile Glu Ala Gly Leu Arg
      115                    120                    125
Thr His Asn Ile Tyr Ser Pro Trp Pro Glu Glu Met Asn Arg Gln Ile
      130                    135                    140
Thr Ser Arg Ile Thr Thr Cys His Phe Ser Pro Thr Leu Leu Ser Lys
      145                    150                    155                    160
Gln Asn Leu Leu Asp Glu Gly Ile Arg Glu Ser Ser Ile Thr Val Thr
      165                    170                    175
Gly Asn Thr Val Ile Asp Ala Leu Tyr Met Val Val Asp Lys Ile Lys
      180                    185                    190
Asn Asn Lys Glu Leu Asn Lys Glu Leu Glu Ser Ile Leu Lys Gln Thr
      195                    200                    205
Gly Tyr Asp Ile Asn Arg Leu Gln Asn Gly Arg Lys Leu Ile Leu Ile
      210                    215                    220
Thr Gly His Arg Arg Glu Asn Phe Gly Asn Gly Phe Ile Ser Met Cys
      225                    230                    235                    240
Lys Ala Ile Asn Thr Leu Lys Lys Lys Tyr Pro Asp Val Asp Phe Val
      245                    250                    255
Tyr Pro Met His Leu Asn Pro Asn Val Arg Lys Pro Ile His Glu Ile
      260                    265                    270
Phe Gly Asp Asn Leu Ser Asn His Asn Asn Leu Phe Phe Ile Glu Pro
      275                    280                    285
Leu Glu Tyr Leu Ser Phe Val Tyr Leu Met Glu Lys Ser Thr Ile Val
      290                    295                    300
Leu Thr Asp Ser Gly Gly Ile Gln Glu Glu Ala Pro Gly Leu Gly Lys
      305                    310                    315                    320
Pro Val Leu Val Met Arg Asp Thr Thr Glu Arg Pro Glu Ala Leu Glu
      325                    330                    335
Ala Gly Thr Val Lys Leu Val Gly Thr Asn Tyr Asp Lys Ile Val Asp
      340                    345                    350
Gly Ile Ser Thr Leu Leu Asp Asp Lys Val Tyr Tyr Glu Glu Met Ser
      355                    360                    365
Lys Ser Val Asn Pro Tyr Gly Asp Gly Lys Ala Ser Glu Arg Ile Val
      370                    375                    380
Asn Asn Ile Asn Tyr Val
      385                    390

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<210> 9427

<211> 673

<212> PRT

<213> B.fragilis

<400> 9427

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Ile Val Asn Arg Lys Ile Val Asn His Met Thr Ala Gln Ser Asn Ile
1      5      10      15
Thr Pro Glu Ser Ile Val Ala Asp Leu Arg Tyr Leu Gln Leu Leu Ser
      20      25      30
Arg Ser Phe Pro Thr Ile Ala Ala Ser Thr Glu Ile Ile Asn Leu
      35      40      45
Glu Ala Ile Leu Asn Leu Pro Lys Gly Thr Glu His Phe Leu Thr Asp
      50      55      60
Ile His Gly Glu Tyr Glu Ala Phe Gln His Val Leu Lys Asn Ala Ser
      65      70      75      80
Gly Ala Val Lys Arg Lys Val Asn Glu Ile Phe Gly His Thr Leu Arg
      85      90      95

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Glu	Ile	Glu	Lys	Lys	Glu	Leu	Cys	Thr	Leu	Ile	Tyr	Tyr	Pro	Glu	Glu
			100					105					110		
Lys	Leu	Gln	Leu	Ile	Lys	Ala	Thr	Glu	Thr	Asp	Ile	Asp	Asp	Trp	Tyr
		115						120				125			
Leu	Ile	Thr	Leu	Asn	Gln	Leu	Val	Lys	Val	Cys	Gln	Asn	Val	Ser	Ser
		130				135					140				
Lys	Tyr	Thr	Arg	Ser	Lys	Val	Arg	Lys	Ser	Leu	Pro	Ala	Glu	Phe	Ser
145					150					155					160
Tyr	Ile	Ile	Gln	Glu	Leu	Leu	His	Glu	Ser	Thr	Ile	Glu	Pro	Asn	Lys
			165					170						175	
His	Ala	Tyr	Ile	Asn	Val	Ile	Ile	Ser	Thr	Ile	Ile	Ser	Thr	Arg	Arg
			180					185					190		
Ala	Asp	Asp	Phe	Ile	Ile	Ala	Met	Cys	Asn	Leu	Ile	Gln	Arg	Leu	Thr
		195					200					205			
Ile	Asp	Ser	Leu	His	Ile	Val	Gly	Asp	Ile	Tyr	Asp	Arg	Gly	Pro	Gly
		210				215					220				
Ala	His	Ile	Ile	Met	Asp	Thr	Leu	Cys	Asp	Tyr	His	Asn	Phe	Asp	Ile
225					230					235					240
Gln	Trp	Gly	Asn	His	Asp	Ile	Leu	Trp	Met	Gly	Ala	Ala	Ser	Gly	Asn
			245					250						255	
Glu	Ala	Cys	Met	Ala	Asn	Val	Ile	Arg	Leu	Ser	Met	Arg	Tyr	Gly	Asn
			260					265					270		
Leu	Gly	Thr	Leu	Glu	Asp	Gly	Tyr	Gly	Ile	Asn	Leu	Leu	Pro	Leu	Ala
		275					280					285			
Thr	Phe	Ala	Met	Asp	Thr	Tyr	Ala	Asp	Asp	Pro	Cys	Thr	Ile	Phe	Ala
		290				295					300				
Pro	Lys	Thr	Asn	Phe	Ala	Asp	Ser	Thr	Tyr	Asn	Glu	Lys	Thr	Leu	Arg
305					310					315					320
Leu	Ile	Thr	Gln	Met	His	Lys	Ala	Ile	Thr	Ile	Ile	Gln	Phe	Lys	Leu
			325					330						335	
Glu	Ala	Asn	Ile	Ile	Asn	Arg	Arg	Pro	Glu	Phe	Gly	Met	Gly	Gly	Arg
			340					345					350		
Lys	Leu	Leu	Glu	Lys	Ile	Asp	Phe	Glu	Arg	Gly	Val	Phe	Val	Tyr	Glu
		355					360					365			
Gly	Lys	Glu	Tyr	Pro	Leu	Arg	Asp	Thr	Asn	Phe	Pro	Thr	Val	Asp	Pro
		370				375					380				
Ala	Asp	Pro	Tyr	Arg	Leu	Thr	Asp	Glu	Glu	Gln	Glu	Leu	Ile	Glu	Lys
385					390					395					400
Ile	His	Tyr	Ser	Phe	Met	Asn	Ser	Glu	Lys	Leu	Lys	Lys	His	Met	Arg
			405					410						415	
Cys	Leu	Phe	Thr	Tyr	Gly	Gly	Met	Tyr	Leu	Val	Cys	Asn	Ser	Asn	Leu
			420					425					430		
Leu	Tyr	His	Ala	Ser	Val	Pro	Leu	Asn	Glu	Asp	Gly	Ser	Phe	Lys	His
		435					440					445			
Val	Asn	Ile	Cys	Gly	Lys	Glu	Tyr	Trp	Gly	Lys	Asn	Leu	Leu	Asp	Lys
		450				455					460				
Ile	Asp	Gln	Leu	Ile	Arg	Thr	Ala	Tyr	Phe	Asp	Glu	Asp	Asp	Glu	Glu
465					470					475					480
Glu	Lys	Arg	Phe	Ala	Met	Asp	Tyr	Ile	Trp	Tyr	Leu	Trp	Cys	Gly	Pro
			485					490						495	
Asp	Ala	Pro	Ser	Phe	Asp	Lys	Asp	Lys	Met	Ala	Thr	Phe	Glu	Arg	Tyr
			500					505					510		
Phe	Ile	Ala	Asp	Lys	Ser	Leu	His	Lys	Glu	Thr	Lys	Gly	Tyr	Tyr	Tyr
		515					520					525			
Ala	Leu	Arg	Asn	Lys	Glu	Glu	Ile	Cys	Asp	Arg	Ile	Leu	Glu	Glu	Phe
		530				535					540				
Gly	Val	Thr	Gly	Gln	His	Thr	His	Ile	Ile	Asn	Gly	His	Val	Pro	Val
545					550					555					560
Lys	Thr	Ile	Lys	Gly	Glu	Gln	Pro	Met	Lys	Ala	Gly	Gly	Lys	Leu	Leu

[illegible]

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<210> 9428
<211> 133
<212> PRT
<213> B.fragilis
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<400> 9428
Val Asn Lys Leu Leu Lys Asn Trp Ser Tyr Leu Leu Leu Ser Asp Ile
1          5          10          15
Ser Gln Ser Val Ile Asn Phe Phe Val Phe Met Leu Leu Ala Arg Lys
20          25          30
Leu Thr Pro Val Gly Tyr Gly Glu Phe Asn Val Ile Leu Ala Ile Val
35          40          45
Ala Ile Phe Ser Val Val Ala Thr Asn Leu Gly Ala Asn His Val Ile
50          55          60
Thr Arg Glu Val Thr Leu His Pro Asp Asn Thr Lys Gly Ile Cys Tyr
65          70          75          80
Asn Val Ile Pro Phe Arg Leu Ile Ala Leu Ala Ile Ala Phe Leu Gly
85          90          95
Val Phe Val Tyr Ile Val Ser Gly Lys Asp Asp Gln Phe Ser Pro Ser
100          105          110
Leu Val Leu Phe Ile Cys Ile Phe Ala Pro Ser Val Trp Arg Ser Lys
115          120          125
Arg Pro His Ser His
130

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<210> 9429
<211> 122
<212> PRT
<213> B.fragilis
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<400> 9429															
His	Tyr	Gly	Arg	Lys	Lys	Val	Val	Ile	Ser	Leu	Asn	Asp	Asn	Leu	Val
1				5					10					15	
Thr	Ile	Glu	Val	Asn	Gly	Lys	Val	Ile	Phe	Ala	Gly	Lys	Ala	Asp	Leu
			20					25					30		
Gln	Phe	Ser	Leu	Asn	Gln	Lys	Val	Arg	Glu	Pro	Leu	Arg	Ile	Thr	Lys
		35					40					45			
Gly	Lys	Gly	Lys	Leu	Met	Glu	Ala	Leu	Thr	Glu	Ser	Phe	Ile	Lys	Gly
	50					55					60				
Gly	Ile	Asn	Ser	Met	Glu	Asn	Arg	Pro	Ile	Glu	Glu	Leu	Gln	Glu	Thr
65					70					75					80
Ile	Lys	Glu	Tyr	Leu	Thr	Phe	Glu	Tyr	Gln	Arg	Lys	Gly	Ile	Ala	Thr
				85					90					95	

Glu Pro Asn Lys Arg Ser Phe Leu Ser Glu Leu Lys Lys Tyr Ala Arg
 100 105 110
 Ala Phe Arg Lys Lys Arg Asp Glu Ser Glu
 115 120

<210> 9430
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 9430
 Lys Pro Phe Gly Arg Val Asn Asn Asp His Tyr Asn Thr Ser Lys Asn
 1 5 10 15
 Arg Lys Gly Ile Asp Lys Asp Lys Pro Val Lys Ser Arg Asn Asp Asp
 20 25 30
 Cys Ser Asp Leu Asp Gly Thr Ser Ala Ser Thr Ser Thr Asp Thr Gly
 35 40 45
 Trp Leu Asp Ala Ser Ser Leu Tyr Ile Pro Val Leu Ala Val Lys Val
 50 55 60
 Leu Leu Ile Arg Lys Ile Ser Trp Met Ile Leu Leu Asn Ile Asn Val
 65 70 75 80
 Thr Val Arg Asn Phe Arg Pro Gly Arg
 85

<210> 9431
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9431
 Val Phe Asn Gly Ile Leu Glu Ala Lys Gln Leu Ile Gly Glu Glu Ile
 1 5 10 15
 Thr Ser Ser Pro Gly Phe Asn Ser Lys Thr Val Asn Ala Thr Cys Ile
 20 25 30
 Ala Glu Ala Tyr Glu Phe Val Val Ser Lys Phe Ser Ile Pro Lys Lys
 35 40 45
 Val Asp Asn Phe Ser Ser Lys Arg Ser Pro His Phe Pro
 50 55 60

<210> 9432
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 9432
 Phe Met Lys Gly Ile Val Leu Ala Gly Gly Ser Gly Thr Arg Leu Tyr
 1 5 10 15
 Pro Ile Thr Lys Gly Ile Ser Lys Gln Leu Leu Pro Ile Phe Asp Lys
 20 25 30
 Pro Met Ile Tyr Tyr Pro Ile Ser Val Leu Met Leu Ala Gly Ile Arg
 35 40 45
 Glu Ile Leu Ile Ile Ser Thr Pro His Asp Leu Pro Gly Phe Gln Arg
 50 55 60
 Leu Leu Gly Asp Gly Ser Asp Phe Gly Val His Phe Glu Tyr Ala Glu
 65 70 75 80
 Gln Pro Ser Pro Asp Gly Leu Ala Gln Ala Phe Ile Ile Gly Glu Lys
 85 90 95
 Phe Ile Gly Ser Asp Ser Val Cys Leu Val Leu Gly Asp Asn Ile Phe
 100 105 110

Tyr Gly Gln Gly Phe Thr Tyr Met Leu His Glu Ala Val Arg Thr Ala
 115 120 125
 Glu Ser Glu Asn Lys Ala Thr Val Phe Gly Tyr Trp Val Ser Asp Pro
 130 135 140
 Glu Arg Tyr Gly Val Ala Glu Phe Asp Gln Glu Gly Asn Val Leu Ser
 145 150 155 160
 Ile Glu Glu Lys Pro Gln Ile Pro Lys Ser His Tyr Ala Val Val Gly
 165 170 175
 Leu Tyr Phe Tyr Pro Asn Lys Val Val Glu Ile Ala Gln Asn Ile Lys
 180 185 190
 Pro Ser Pro Arg Gly Glu Leu Glu Ile Thr Thr Val Asn Gln Gln Phe
 195 200 205
 Leu Leu Asp Lys Lys Leu Lys Val Lys Leu Leu Gly Arg Gly Phe Ala
 210 215 220
 Trp Leu Asp Thr Gly Thr His Asp Ser Leu Ser Glu Ala Ser Thr Phe
 225 230 235 240
 Ile Glu Val Ile Glu Lys Arg Gln Gly Leu Lys Val Ala Cys Leu Glu
 245 250 255
 Gly Ile Ala Phe Arg Gln Gly Trp Ile Ser Leu Ala Lys Met Lys Ser
 260 265 270
 Leu Ala Asn Leu Met Leu Arg Asn Gln Tyr Gly Gln Tyr Leu Leu Lys
 275 280 285
 Val Ile Asn Glu Leu Ser Val Lys
 290 295

<210> 9433

<211> 556

<212> PRT

<213> B.fragilis

<400> 9433

Ile Ile His Met Glu Trp Leu Tyr Ser Leu Phe Ile Glu His Ser Ala
 1 5 10 15
 Leu Gln Ala Val Val Val Leu Ser Leu Ile Ser Ala Ile Gly Leu Gly
 20 25 30
 Leu Gly Lys Ile His Val Cys Gly Ile Ser Leu Gly Val Thr Phe Val
 35 40 45
 Phe Phe Ala Gly Ile Leu Ala Gly His Phe Gly Leu Ser Ile Asp Pro
 50 55 60
 Gln Met Leu Asn Tyr Ala Glu Ser Phe Gly Leu Ile Ile Phe Val Tyr
 65 70 75 80
 Ala Leu Gly Leu Gln Val Gly Pro Gly Phe Phe Ser Ser Phe Arg Lys
 85 90 95
 Gly Gly Val Thr Leu Asn Met Leu Ala Ile Ala Val Val Ile Leu Gly
 100 105 110
 Thr Phe Leu Ala Val Val Cys Ser Tyr Thr Thr Gly Val Ser Leu Pro
 115 120 125
 Asn Met Val Gly Ile Leu Cys Gly Ala Thr Thr Asn Thr Pro Ala Leu
 130 135 140
 Gly Ala Ala Gln Gln Thr Leu Lys Gln Met Gly Leu Glu Ser Ser Thr
 145 150 155 160
 Pro Ala Leu Gly Cys Ala Val Ala Tyr Pro Leu Gly Val Ile Gly Val
 165 170 175
 Ile Leu Ala Val Leu Leu Ile Arg Lys Leu Leu Val Arg Arg Glu Asp
 180 185 190
 Leu Glu Val Gln Glu Lys Asp Asp Ala Asn Lys Thr Tyr Ile Ala Ala
 195 200 205
 Phe Gln Val His Asn Pro Ala Ile Phe Asn Lys Ser Ile Lys Asp Ile
 210 215 220

Ala His Met Ser Tyr Pro Lys Phe Val Ile Ser Arg Leu Trp Arg Asp
 225 230 235 240
 Gly Asn Val Ser Ile Pro Thr Ser Glu Lys Ile Ile Lys Glu Gly Asp
 245 250 255
 Arg Leu Leu Val Val Thr Ser Glu Lys Asp Ala Leu Ala Leu Thr Val
 260 265 270
 Leu Phe Gly Glu Gln Glu Asn Thr Asp Trp Asn Lys Glu Asp Ile Asp
 275 280 285
 Trp Asn Ala Ile Asp Ser Gln Leu Ile Ser Gln Arg Ile Val Val Thr
 290 295 300
 Arg Pro Glu Leu Asn Gly Lys Lys Leu Gly Ala Leu Arg Leu Arg His
 305 310 315 320
 His Tyr Gly Ile Asn Ile Ser Arg Val Tyr Arg Ser Gly Val Gln Leu
 325 330 335
 Leu Ala Thr Pro Glu Leu Thr Leu Gln Leu Gly Asp Arg Leu Thr Val
 340 345 350
 Val Gly Glu Ala Ala Ala Ile Gln Asn Val Glu Lys Val Leu Gly Asn
 355 360 365
 Ala Ile Lys Ser Leu Lys Glu Pro Asn Leu Val Ala Val Phe Val Gly
 370 375 380
 Ile Ile Leu Gly Leu Ala Leu Gly Ala Val Pro Phe Ser Ile Pro Gly
 385 390 395 400
 Ile Ser Thr Pro Val Arg Leu Gly Leu Ala Gly Gly Pro Ile Ile Val
 405 410 415
 Gly Ile Leu Ile Gly Thr Phe Gly Pro Arg Leu His Met Ile Thr Tyr
 420 425 430
 Thr Thr Arg Ser Ala Asn Leu Met Leu Arg Ala Leu Gly Leu Ser Leu
 435 440 445
 Tyr Leu Ala Cys Leu Gly Leu Asp Ala Gly Ala His Phe Phe Asp Thr
 450 455 460
 Val Phe Arg Pro Glu Gly Leu Leu Trp Ile Gly Leu Gly Phe Gly Leu
 465 470 475 480
 Thr Leu Val Pro Thr Val Leu Val Gly Phe Phe Ala Phe Lys Ile Met
 485 490 495
 Lys Ile Asp Phe Gly Ser Val Ser Gly Met Leu Cys Gly Ser Met Ala
 500 505 510
 Asn Pro Met Ala Leu Asn Tyr Ala Asn Asp Thr Ile Pro Gly Asp Asn
 515 520 525
 Pro Ser Val Ala Tyr Ala Thr Val Tyr Pro Leu Ser Met Phe Leu Arg
 530 535 540
 Val Ile Ile Ala Gln Val Leu Leu Met Phe Leu Leu
 545 550 555

<210> 9434

<211> 343

<212> PRT

<213> B.fragilis

<400> 9434

Ile Ile Leu Ile Met Phe Lys Asp Lys Val Leu Met Ile Thr Gly Gly
 1 5 10 15
 Thr Gly Ser Phe Gly Asn Ala Val Leu Lys His Phe Leu Asn Ser Asp
 20 25 30
 Leu Lys Glu Ile Arg Ile Phe Ser Arg Asp Glu Lys Lys Gln Glu Asp
 35 40 45
 Met Arg Ile Glu Tyr Lys Asn Asp Lys Leu Asn Phe Ile Ile Gly Asn
 50 55 60
 Val Arg Asp Phe Asp Thr Ile Asn Asn Ala Met Ala Gly Val Asp Tyr
 65 70 75 80

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Val Phe His Ala Ala Ala Leu Lys Gln Val Pro Ser Cys Glu Phe Tyr
      85                      90                      95
Pro Met Gln Ala Ile Arg Thr Asn Leu Tyr Gly Ala Glu Asn Val Leu
      100                    105                    110
Glu Ala Ala Ala Arg Asn Asn Val Lys Lys Val Val Val Leu Ser Thr
      115                    120                    125
Asp Lys Ala Ala Tyr Pro Ile Asn Ala Met Gly Met Thr Lys Ala Leu
      130                    135                    140
Met Glu Lys Leu Ala Ile Ser Lys Ala Arg Asp Ala Arg Val Gln Ala
      145                    150                    155                    160
Asn Gly Gly Val Ile Cys Ala Thr Arg Tyr Gly Asn Val Met Cys Ser
      165                    170                    175
Arg Gly Ser Ile Ile Pro Leu Phe Ile Lys Gln Ile Lys Glu Gly Leu
      180                    185                    190
Pro Leu Thr Ile Thr Glu Pro Arg Met Thr Arg Phe Met Met Ser Leu
      195                    200                    205
Asp Asp Ala Val Asp Leu Val Leu Phe Ala Phe Lys Asn Ala Glu Pro
      210                    215                    220
Gly Asp Leu Phe Val Gln Lys Ala Pro Ala Ala Thr Ile Gln Asp Leu
      225                    230                    235                    240
Ala Ile Ala Leu Lys Glu Leu Phe His Ala Asn Asn Glu Ile His Ile
      245                    250                    255
Ile Gly Pro Arg His Gly Glu Lys Met Tyr Glu Thr Leu Cys Thr Lys
      260                    265                    270
Glu Glu Met Ser Lys Ala Thr Asp Met Gly Glu Phe Tyr Arg Val Pro
      275                    280                    285
Ala Asp Phe Arg Asp Leu Asn Tyr Thr Lys Tyr Val Gln Lys Asp Gly
      290                    295                    300
Pro Met Leu Val Glu His Glu Tyr Asn Ser Glu Asn Thr His Arg Leu
      305                    310                    315                    320
Asn Val Glu Glu Leu Lys Glu Met Leu Leu Thr Leu Asp Tyr Val Lys
      325                    330                    335
Glu Glu Leu Gly Ile Asn Lys
      340

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<210> 9435

<211> 187

<212> PRT

<213> B.fragilis

<400> 9435

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Met Asn Ile Ile Lys Thr Ala Ile Glu Gly Leu Val Ile Ile Glu Pro
1      5      10      15
Arg Leu Phe Gln Asp Asp Arg Gly Tyr Phe Phe Glu Ser Phe Asn Gln
      20      25      30
Glu Glu Phe Glu Thr Lys Val Cys Lys Thr Thr Phe Ile Gln Asp Asn
      35      40      45
Glu Ser Lys Ser Thr Tyr Gly Val Ile Arg Gly Leu His Phe Gln Lys
      50      55      60
Pro Pro Phe Ala Gln Ser Lys Leu Val Arg Val Ile Arg Gly Ser Val
      65      70      75      80
Leu Asp Val Ala Val Asp Ile Arg Lys Asp Ser Pro Thr Phe Gly Lys
      85      90      95
His Ile Ser Val Glu Leu Thr Gly Asp Asn His Arg Gln Phe Phe Ile
      100     105     110
Pro Arg Gly Phe Ala His Gly Phe Cys Val Leu Ser Glu Glu Val Val
      115     120     125
Phe Gln Tyr Lys Cys Asp Asn Phe Tyr His Pro Glu Ser Glu Gly Thr
      130     135     140

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Ile Ala Trp Asn Asp Ile Asp Leu Asn Ile Ser Trp Arg Ile Pro Leu
 145 150 155 160
 Glu Asp Val Val Leu Ser Arg Lys Asp Lys Asn Ala Leu Pro Leu Lys
 165 170 175
 Glu Met Tyr Ser Asp Val Asn Tyr Phe Arg Phe
 180 185

<210> 9436

<211> 374

<212> PRT

<213> B.fragilis

<400> 9436

Lys Tyr Arg Ile Leu His Arg Gln Lys Asp Tyr Lys Leu Lys Thr Ile
 1 5 10 15
 Asp Met Lys Lys Ala Leu Ile Ser Gly Ile Thr Gly Gln Asp Gly Ser
 20 25 30
 Phe Leu Ala Glu Phe Leu Leu Gln Lys Gly Tyr Glu Val His Gly Ile
 35 40 45
 Leu Arg Arg Ser Ser Ser Phe Asn Thr Gly Arg Ile Glu His Leu Tyr
 50 55 60
 Phe Asp Glu Trp Val Arg Asp Met Lys Gln Lys Arg Thr Val Asn Leu
 65 70 75 80
 His Tyr Gly Asp Met Thr Asp Ser Ser Ser Leu Ile Arg Ile Ile Gln
 85 90 95
 Gln Val Gln Pro Asp Glu Ile Tyr Asn Leu Ala Ala Gln Ser His Val
 100 105 110
 Lys Val Ser Phe Asp Val Pro Glu Tyr Thr Ala Glu Ala Asp Ala Leu
 115 120 125
 Gly Thr Leu Arg Met Leu Glu Ala Val Arg Ile Leu Gly Leu Glu Lys
 130 135 140
 Gln Thr Arg Ile Tyr Gln Ala Ser Thr Ser Glu Leu Tyr Gly Lys Val
 145 150 155 160
 Gln Glu Val Pro Gln Ser Glu Thr Thr Pro Phe Tyr Pro Arg Ser Pro
 165 170 175
 Tyr Gly Val Ala Lys Gln Tyr Gly Phe Trp Ile Thr Lys Asn Tyr Arg
 180 185 190
 Glu Ser Tyr Gly Met Phe Ala Val Asn Gly Ile Leu Phe Asn His Glu
 195 200 205
 Ser Glu Arg Arg Gly Glu Thr Phe Val Thr Arg Lys Ile Thr Leu Ala
 210 215 220
 Ala Ala Arg Ile Ala Gln Gly Glu Gln Asp Lys Leu Tyr Leu Gly Asn
 225 230 235 240
 Leu Asp Ala Lys Arg Asp Trp Gly Tyr Ala Lys Asp Tyr Val Glu Cys
 245 250 255
 Met Trp Leu Ile Leu Gln His Asp Val Pro Glu Asp Phe Val Ile Ala
 260 265 270
 Thr Gly Glu Met His Thr Val Arg Glu Phe Cys Thr Leu Ala Phe Ala
 275 280 285
 Glu Ile Gly Ile Asn Leu Arg Trp Glu Gly Glu Gly Val Asn Glu Lys
 290 295 300
 Gly Ile Asp Thr Ala Thr Gly Lys Val Leu Val Glu Val Asp Pro Lys
 305 310 315 320
 Tyr Phe Arg Pro Ala Glu Val Glu Gln Leu Leu Gly Asn Pro Thr Lys
 325 330 335
 Ala Arg Thr Val Leu Gly Trp Asn Pro Cys Lys Thr Pro Phe Pro Glu
 340 345 350
 Leu Val Lys Ile Met Val Arg His Asp Met Ala Lys Val Lys Arg Met
 355 360 365

Ile Ala Thr Lys His Asp
370

<210> 9437

<211> 364

<212> PRT

<213> B.fragilis

<400> 9437

Ile	Ile	Met	Ile	Pro	Leu	Val	Lys	Pro	Tyr	Leu	Pro	Pro	Ala	Asp	Ile	1	5	10	15
Leu	Met	Pro	Glu	Leu	His	Lys	Ile	Leu	Tyr	Ser	Gly	Tyr	Ile	Ala	Glu	20	25	30	
Gly	Glu	Ala	Val	Tyr	Gln	Phe	Glu	Asp	Lys	Phe	Arg	Ala	Tyr	Ile	Gly	35	40	45	
Asn	Pro	Leu	Ser	Leu	Ala	Leu	His	Ser	Gly	Thr	Asp	Gly	Leu	His	Leu	50	55	60	
Ser	Leu	Leu	Leu	Ala	Gly	Val	Lys	Pro	Gly	Asp	Glu	Val	Ile	Ser	Thr	65	70	75	80
Pro	Met	Thr	Ala	Glu	Pro	Thr	Asn	Thr	Ser	Ile	Ala	Met	Val	Gly	Gly	85	90	95	
Lys	Val	Val	Trp	Gly	Asp	Val	Asn	Pro	Asn	Asn	Gly	Leu	Leu	Asp	Pro	100	105	110	
Arg	Ser	Val	Glu	Ser	Val	Ile	Thr	Glu	Lys	Thr	Lys	Ala	Ile	Val	Leu	115	120	125	
Val	His	Tyr	Ala	Gly	Met	Val	Cys	Asp	Met	Asp	Ala	Phe	Asn	Lys	Ile	130	135	140	
Ser	Gln	Lys	Tyr	Asn	Ile	Pro	Ile	Ile	Glu	Asp	Ala	Ala	His	Ala	Leu	145	150	155	160
Gly	Ser	Lys	Tyr	Ala	Gly	Lys	Met	Val	Gly	Cys	Ser	Ser	Pro	Tyr	Thr	165	170	175	
Ile	Phe	Ser	Leu	Gln	Ala	Ile	Lys	His	Met	Thr	Thr	Ile	Asp	Gly	Gly	180	185	190	
Phe	Leu	Cys	Leu	Lys	Asp	Glu	Ile	Glu	Phe	Asp	Lys	Ala	Arg	Arg	Leu	195	200	205	
Arg	Trp	Phe	Gly	Leu	Asp	Lys	Lys	Arg	Ser	Arg	Leu	Glu	Asn	Asp	Ile	210	215	220	
Thr	Glu	Val	Gly	Tyr	Lys	Tyr	Ala	Met	Asn	Asn	Val	Asn	Ala	Thr	Ile	225	230	235	240
Gly	Asn	Val	Gln	Met	Lys	Tyr	Val	Asp	Lys	Ile	Ile	Ala	Ser	Tyr	Ile	245	250	255	
Glu	Asn	Gly	Arg	Tyr	Tyr	Asp	Leu	Ala	Leu	Ser	Asp	Ile	Asp	Gly	Ile	260	265	270	
His	Leu	Val	Asp	Tyr	Ser	Ala	Lys	Thr	Glu	Ala	Ser	Tyr	Trp	Leu	Tyr	275	280	285	
Thr	Met	Arg	Val	Asp	Glu	Arg	Asp	Asn	Phe	Ile	Lys	Ala	Met	Glu	Ser	290	295	300	
Ala	Gly	Ile	Leu	Ala	Ser	Pro	Leu	His	His	Arg	Ser	Asp	Thr	His	Ser	305	310	315	320
Ile	Phe	Lys	Glu	Ser	Lys	Arg	Glu	Leu	Pro	Asn	Met	Asp	Arg	Trp	Tyr	325	330	335	
Arg	Glu	Phe	Val	His	Ile	Pro	Cys	Gly	Trp	Trp	Ile	Thr	Glu	Glu	Val	340	345	350	
Arg	Thr	Gln	Ile	Val	Glu	Ala	Ile	Lys	Lys	Gly	Trp	355	360						

<210> 9438

<211> 83

<212> PRT

<213> B.fragilis

<400> 9438

Leu Phe Leu Val Asp Gly Gly Leu Ile Asp Ala Cys Cys Lys Lys Lys
 1 5 10 15
 Tyr Lys Cys Val Thr Trp Cys Gly Val Lys Asn Val Cys Ile Leu Leu
 20 25 30
 Leu Glu Leu Leu Val Thr Ser Cys Phe Asp Asp Asp Leu Glu Arg Lys
 35 40 45
 Val Asp Ser Leu Glu Tyr Glu Ile Glu Lys Val Ile Ser Thr Asn Asp
 50 55 60
 Ile Leu Ser Leu Lys Tyr Glu Leu Tyr Leu Ala Cys Tyr Glu Gly Lys
 65 70 75 80
 Leu Leu Lys

<210> 9439

<211> 358

<212> PRT

<213> B.fragilis

<400> 9439

Phe Ile Met Val Pro Leu Tyr Lys Pro Tyr Met Pro Glu Gln Leu Pro
 1 5 10 15
 Asp Leu Asp Ala Ile Ile His Ser Gly Ala Leu Ser Tyr Gly Lys Trp
 20 25 30
 Gly Leu Leu Leu Glu Glu Lys Leu Ser Thr Phe Leu Gly Ile Glu Asn
 35 40 45
 Leu Leu Thr Thr Asn Ser Tyr Ala Ser Ala Ile Gln Val Ala Leu Thr
 50 55 60
 Val Leu Glu Leu Lys Pro Gly Asp Glu Val Ile Ser Ser Pro Met Ser
 65 70 75 80
 Cys Leu Ala Ser Asn Met Pro Leu Lys Thr Tyr Gly Leu Asp Ile Val
 85 90 95
 Trp Ala Asp Ile Asp Pro Thr Thr Gly Thr Leu Ser Pro Asp Ser Val
 100 105 110
 Arg Glu Lys Val Thr Pro Lys Thr Lys Leu Ile Phe His Asn His Phe
 115 120 125
 Cys Gly Tyr Val Gly Tyr Val Asp Glu Ile Asn Ala Val Ala Lys Glu
 130 135 140
 Phe Gly Ile Pro Val Ile Asp Asp Cys Val Glu Ala Phe Gly Ser Lys
 145 150 155 160
 Tyr Lys Gly Lys Tyr Thr Gly Asn Leu Gly Thr Asp Leu Ser Val Phe
 165 170 175
 Ser Phe Gln Thr Val Arg Leu Pro Asn Thr Val Asp Gly Gly Ala Ile
 180 185 190
 Val Phe Asn Asn Lys Ser Leu Leu Asp Lys Ala Ile Leu Thr Arg Asp
 195 200 205
 Phe Gly Ile Asn Arg Lys Thr Phe Arg Asp Glu Tyr Ala Glu Ile Ser
 210 215 220
 Pro Ser Cys Asp Ile Ser Leu Ser Gly Tyr Gly Ala Thr Met Ser Glu
 225 230 235 240
 Leu Asn Ser Tyr Ile Gly Cys Met Gln Met Gly Thr Ile Gln Gln Leu
 245 250 255
 Leu Glu Thr Gln Arg Leu Asn Ser Glu Arg Trp Asp Thr Phe Leu Thr
 260 265 270
 Glu Asn Tyr Pro Lys Val Tyr Lys Leu Asn Thr Arg Arg Glu Ile Gln
 275 280 285
 Pro Asn Tyr Trp Val Tyr Gly Cys Leu Ala Glu Asn Lys Leu Asp Met

290 295 300
 Met Leu Gln Phe Arg Ser Leu Gly Tyr Tyr Ala Ser Gly Val His Leu
 305 310 315 320
 Asn Asn Asn Cys Tyr Ser Ile Phe Gly Asp Lys Lys Tyr Leu Pro Gly
 325 330 335
 Val Asp Ser Phe Asn Arg Asn Phe Leu Ala Ile Pro Cys Gly Trp Trp
 340 345 350
 Val Asp Arg Cys Leu Leu
 355

<210> 9440

<211> 360

<212> PRT

<213> B.fragilis

<400> 9440

Cys Asp Gly Val Phe His His Gly Thr Ile Leu Tyr Ile Ser Lys Lys
 1 5 10 15
 Phe Thr Asp Ser Gly Val Leu Ser Gly Tyr Arg Asp Leu Asp Asp Leu
 20 25 30
 Leu Phe Ile Tyr Arg Glu Lys Ile His Pro Val Gly Lys Val Tyr Ile
 35 40 45
 Phe Ile Glu Glu Ile Gln Lys Val Glu Gly Trp Glu His Phe Val His
 50 55 60
 Ser His Ser Gln Asp Phe Val Asp Thr Cys Glu Leu Phe Ile Ser Gly
 65 70 75 80
 Ser Asn Gln Asp Met Leu Ser Gly Glu Ala Glu Lys Leu Leu Ala Arg
 85 90 95
 His Tyr Val Ser Phe Glu Ile Phe Pro Phe Ser Phe Ser Glu His Arg
 100 105 110
 Ile Leu Glu Arg Val Glu Ala Thr Gly Lys Asn Tyr Ala Glu Tyr Met
 115 120 125
 Gly Lys Gly Ala Leu Pro Ile Leu Phe Asn Leu Pro Asp Ala Glu Ala
 130 135 140
 Gly Trp Lys Ala Ile Ser Ala Leu Arg Asp Thr Ile Leu Phe Arg Asp
 145 150 155 160
 Ile Ile Arg Arg Tyr Arg Ile Lys Asp Ala Arg Leu Leu Glu Asp Val
 165 170 175
 Phe Val Tyr Leu Cys Thr His Leu Ala Glu Leu Ile Thr Ile Gly Gln
 180 185 190
 Leu Val Ser His Phe Ala Ala Gln Asn Arg Lys Thr Ser Tyr Asp Thr
 195 200 205
 Val Ala Asn Tyr Ile Cys Tyr Leu Glu Asp Thr Ser Leu Ile His Arg
 210 215 220
 Val Glu Arg Tyr Gln Ile Arg Ser Lys Glu Ile Leu Leu Gly Ser Cys
 225 230 235 240
 Lys Tyr Tyr Ile Asn Asp Trp Ala Phe Met Arg His Leu Tyr Pro Phe
 245 250 255
 Phe Ala Gly Ser Arg Lys Ser Cys Phe Glu Asn Gln Val Tyr Leu Glu
 260 265 270
 Leu Arg Arg Ala Gly Tyr Thr Val Phe Val Gly Val Leu Arg Gly Gly
 275 280 285
 Lys Leu Val Asp Phe Val Gly Arg Lys Lys Asp Arg Ile Val Tyr Leu
 290 295 300
 Gln Cys Ala Pro Leu Leu Asn Asp Asp Phe Gln Val Glu Gln Met Tyr
 305 310 315 320
 Asn Thr Leu Glu Met Ile Gln Asp Asn Tyr Glu Lys Trp Val Val Ser
 325 330 335
 Met Asp Asp Thr Thr Leu Pro Ser Lys Glu Gly Ile Arg His Ile Gln

340 345 350
 Val Trp Gln Leu Pro Glu Ile Leu
 355 360

<210> 9441
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9441
 Thr Pro Val Phe Gln Cys Val Val Ala Phe Thr Cys Ala Ser Leu Trp
 1 5 10 15
 Phe Ser Val Ser Leu Cys Gln Ile Lys Ala Met Asp Gln Glu Glu Leu
 20 25 30
 His Thr Gln Ile Leu Met Arg Asp Tyr Leu Glu Arg Gln Glu Leu Lys
 35 40 45
 Ala Ser Ala Ile Ala Thr Asn His Cys Val Asp Met Glu Ser Asp Glu
 50 55 60
 Leu Arg Arg Tyr Val Tyr Ala Ser Phe Trp Gly Ser Trp Lys Arg Asn
 65 70 75 80
 Arg Ser Arg

<210> 9442
 <211> 471
 <212> PRT
 <213> B.fragilis

<400> 9442
 Leu Ile Lys Ser Tyr Ser Asn Met Phe Lys His Leu Asn Ala Leu Phe
 1 5 10 15
 Ile Gly Leu Ala Leu Phe Ala Cys Thr Ser Gly Ala Val Ala Gln Thr
 20 25 30
 Ile Lys Pro Ile Glu Thr Pro Val Pro Val Arg Pro Ala Gly Gln Lys
 35 40 45
 Asp Val Val Gly Leu Thr Thr Pro Lys Leu Asp Val Val Arg Val Gly
 50 55 60
 Phe Ile Gly Leu Gly Met Arg Gly Pro Gly Ala Val Glu Arg Phe Thr
 65 70 75 80
 His Ile Pro Gly Thr Gln Ile Val Ala Leu Cys Asp Leu Ile Pro Glu
 85 90 95
 Arg Val Ala Gly Ala Gln Lys Ile Leu Thr Lys Ala Asn Leu Pro Glu
 100 105 110
 Ala Ala Ser Tyr Ser Gly Ser Glu Asp Ala Trp Lys Lys Leu Cys Glu
 115 120 125
 Arg Lys Asp Ile Asp Leu Val Tyr Ile Ala Thr Asp Trp Lys His His
 130 135 140
 Ala Gln Met Ala Ile Tyr Ala Met Glu His Gly Lys His Val Ala Ile
 145 150 155 160
 Glu Val Pro Ser Ala Met Thr Leu Asp Glu Ile Trp Ala Leu Ile Asn
 165 170 175
 Thr Ser Glu Lys Thr Arg Lys His Cys Met Gln Leu Glu Asn Cys Val
 180 185 190
 Tyr Asp Phe Glu Leu Thr Thr Leu Asn Met Ala Gln Gln Gly Val
 195 200 205
 Phe Gly Glu Val Leu His Thr Glu Gly Ala Tyr Ile His Asn Leu Glu
 210 215 220
 Asp Phe Trp Pro Tyr Tyr Trp Lys His Trp Arg Met Asp Tyr Asn Gln
 225 230 235 240

Asn His Arg Gly Asp Val Tyr Ala Thr His Gly Met Gly Pro Ala Cys
 245 250 255
 Gln Leu Leu Asp Ile His Arg Gly Asp Lys Met Asn Tyr Leu Val Ser
 260 265 270
 Met Asp Thr Lys Ala Val Asn Gly Pro Ala Tyr Ile Lys Lys Thr Thr
 275 280 285
 Gly Lys Glu Val Lys Asp Phe Gln Asn Gly Asp Gln Thr Ser Thr Leu
 290 295 300
 Ile Arg Thr Glu Lys Gly Lys Thr Ile Leu Ile Gln His Asn Val Met
 305 310 315 320
 Thr Pro Arg Pro Tyr Ser Arg Met Tyr Gln Val Val Gly Ala Asp Gly
 325 330 335
 Tyr Ala Ser Lys Tyr Pro Ile Glu Glu Tyr Cys Met Arg Pro Thr Gln
 340 345 350
 Ile Ala Ser Asn Asp Val Pro Asn His Glu Lys Leu Asn Ala His Gly
 355 360 365
 Ser Val Pro Ala Asp Val Lys Lys Thr Leu Met Asp Lys Tyr Lys His
 370 375 380
 Pro Ile His Lys Glu Leu Glu Glu Thr Ala Lys Lys Val Gly Gly His
 385 390 395 400
 Gly Gly Met Asp Tyr Ile Met Asp Tyr Arg Leu Val Tyr Cys Leu Arg
 405 410 415
 Asn Gly Leu Pro Leu Asp Met Asp Val Tyr Asp Leu Ala Glu Trp Cys
 420 425 430
 Cys Met Ala Asp Leu Thr Lys Leu Ser Ile Glu Asn Ser Ser Ala Pro
 435 440 445
 Val Ala Ile Pro Asp Phe Thr Arg Gly Ala Trp Asn Lys Val Lys Gly
 450 455 460
 Tyr Arg His Ala Phe Ala Lys
 465 470

<210> 9443

<211> 319

<212> PRT

<213> B.fragilis

<400> 9443

Asp Ser Tyr Pro Asp Ser Arg Gln Ile Ile Ile Lys Arg Gln Gln Cys
 1 5 10 15
 Leu Gln Leu Ser Thr Pro Asn Asp Gln Ser Phe Ser Pro Arg Arg Ser
 20 25 30
 Tyr Glu Lys Cys Tyr Phe Thr Gly Gly Phe Gln Pro Ser Ser Val Gln
 35 40 45
 Ala Ala Asp Ile Trp Tyr Leu Tyr Thr Leu Tyr Gly Tyr Glu Ile Asn
 50 55 60
 Ile Asn Leu Thr Ser Ser Pro Phe Met Gln Lys Tyr Gly Leu Ile Gly
 65 70 75 80
 Tyr Pro Leu Lys His Ser Phe Ser Ile Gly Phe Phe Asn Glu Lys Phe
 85 90 95
 Lys Ser Glu Gly Ile Asp Ala Glu Tyr Val Asn Phe Glu Ile Pro Glu
 100 105 110
 Ile Asn Asp Phe Met Glu Val Ile Glu Glu Asn Pro Asn Leu Cys Gly
 115 120 125
 Leu Asn Val Thr Ile Pro Tyr Lys Glu Gln Val Ile Pro Phe Leu Asp
 130 135 140
 Glu Leu Asp Lys Asp Thr Ala Lys Ile Gly Ala Val Asn Val Ile Lys
 145 150 155 160
 Ile Ile Arg Thr Pro Lys Arg Lys Ile Lys Leu Val Gly Tyr Asn Ser
 165 170 175

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Asp Ile Ile Gly Phe Ser Gln Ser Ile Gln Pro Leu Leu Gln Pro Tyr
    180                      185                      190
His Lys Lys Ala Leu Ile Leu Gly Thr Gly Gly Ser Ser Lys Ala Ile
    195                      200                      205
Tyr His Gly Leu Lys Asn Leu Gly Ile Asp Ser Val Phe Val Ser Arg
    210                      215                      220
Thr Lys Lys Glu Gly Met Leu Thr Tyr Glu Glu Leu Thr Pro Glu Val
    225                      230                      235                      240
Met Ala Glu His Thr Val Ile Val Asn Cys Thr Pro Val Gly Met Tyr
    245                      250                      255
Pro Lys Val Asp Phe Cys Pro Ala Ile Pro Tyr Glu Leu Leu Thr Pro
    260                      265                      270
Asn His Leu Leu Tyr Asp Leu Leu Tyr Asn Pro Asn Ile Thr Leu Phe
    275                      280                      285
Met Lys Lys Gly Glu Glu His Gly Ala Val Thr Lys Asn Gly Leu Glu
    290                      295                      300
Met Leu Leu Leu Gln Ala Phe Ala Ala Trp Glu Ile Trp Asn Lys
    305                      310                      315

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<210> 9444

<211> 263

<212> PRT

<213> B.fragilis

<400> 9444

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Asn Pro Cys Pro Ile Ile Arg Leu His Asn Pro Ser Met Lys Met Lys
1                      5                      10                      15
Ile Ser Lys Pro Ser Lys Gln Gly Val Ile Arg Glu Thr Lys Asp Tyr
    20                      25                      30
Leu Met Ile Ala Leu Gly Met Ile Leu Tyr Gly Ile Gly Trp Thr Leu
    35                      40                      45
Phe Leu Leu Pro Asn Asp Ile Thr Thr Gly Gly Val Pro Gly Ile Ala
    50                      55                      60
Ser Ile Val Tyr Phe Ala Thr Gly Phe Pro Val Gln Tyr Thr Tyr Phe
    65                      70                      75                      80
Ala Ile Asn Ala Val Leu Leu Met Val Ser Leu Lys Val Leu Gly Phe
    85                      90                      95
Arg Phe Ser Leu Lys Thr Ile Phe Gly Val Phe Thr Leu Thr Phe Phe
    100                     105                     110
Leu Ser Val Ile Gln Lys Leu Thr Ala Asn Val Thr Leu Leu His Asp
    115                     120                     125
Gln Pro Phe Met Ala Cys Val Leu Gly Ala Ser Phe Cys Gly Ser Gly
    130                     135                     140
Ile Gly Ile Ala Phe Ser Ala Asn Gly Ser Thr Gly Gly Thr Asp Ile
    145                     150                     155                     160
Ile Ala Ala Val Ile Asn Lys Tyr Arg Asp Ile Thr Leu Gly Arg Val
    165                     170                     175
Met Leu Ile Cys Asp Leu Ile Ile Ile Ser Ser Ser Tyr Phe Val Leu
    180                     185                     190
Lys Asp Trp Glu Lys Val Val Tyr Gly Tyr Val Thr Leu Tyr Val Cys
    195                     200                     205
Ser Phe Val Leu Asp Gln Val Val Asn Ser Ala Arg Gln Ser Val Gln
    210                     215                     220
Phe Phe Ile Ile Ser Asn Lys Tyr Glu Glu Ile Gly Gln Arg Ile Asn
    225                     230                     235                     240
Glu Tyr Pro His Arg Gly Val Thr Ile Ile Asn Gly Thr Gly Ile Leu
    245                     250                     255
Tyr Arg Ala Arg Ala Lys Arg
    260

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<210> 9445
 <211> 274
 <212> PRT
 <213> B.fragilis

<400> 9445
 Arg Gln Leu Pro Gly Thr Arg Arg Arg Arg Ser Phe His Arg Arg Ile
 1 5 10 15
 Arg Arg Arg Lys Phe Trp Ile Arg Arg Trp Arg Arg Phe Gln Arg Trp
 20 25 30
 Lys Leu Arg Arg Arg Phe Arg Trp Arg Trp Arg Cys Arg Leu Thr Phe
 35 40 45
 Leu Lys Lys Ser Ile His Lys Ile Cys Glu Ser Gly Ile Lys Val Phe
 50 55 60
 Ala Pro Ser Asp Leu His Glu Ser Leu Ile Ser Asn Thr Lys Arg Asn
 65 70 75 80
 Asn Met Lys Lys Ser Val Ile Ile Leu Ile Ala Val Val Ala Val Ile
 85 90 95
 Ile Ile Trp Ala Ile Ser Ala Tyr Asn Gly Leu Val Ser Met Asp Glu
 100 105 110
 Asn Val Ser Ser Gln Trp Ala Asn Val Glu Thr Gln Tyr Gln Arg Arg
 115 120 125
 Ala Asp Leu Ile Pro Asn Leu Val Asn Thr Val Lys Gly Tyr Ala Ser
 130 135 140
 His Glu Lys Glu Thr Leu Glu Gly Val Val Glu Ala Arg Ser Lys Ala
 145 150 155 160
 Thr Gln Ile Lys Val Asp Ala Asn Asp Leu Thr Pro Glu Lys Leu Ala
 165 170 175
 Glu Tyr Gln Lys Ala Gln Gly Ala Val Thr Ser Ala Leu Gly Lys Leu
 180 185 190
 Leu Ala Ile Thr Glu Asn Tyr Pro Asp Leu Lys Ala Asn Gln Asn Phe
 195 200 205
 Leu Glu Leu Gln Ala Gln Leu Glu Gly Thr Glu Asn Arg Ile Asn Val
 210 215 220
 Ala Arg Lys Asn Phe Asn Asp Ala Ala Gln Ala Tyr Asn Thr Ser Ile
 225 230 235 240
 Arg Arg Phe Pro Lys Ser Ile Phe Ala Ser Val Phe Gly Phe Glu Lys
 245 250 255
 Arg Thr Tyr Phe Glu Ala Thr Glu Gly Thr Glu Lys Ala Pro Glu Val
 260 265 270
 Lys Phe

<210> 9446
 <211> 862
 <212> PRT
 <213> B.fragilis

<400> 9446
 Arg Lys Ile Pro Val Leu Arg Phe Arg Lys Arg Asn Lys His Val Pro
 1 5 10 15
 Ile Gly Ala Ser Ile Asn Val Gln Ile Cys Gln Cys Phe Asn Ile Met
 20 25 30
 Ser Tyr Thr Ile Glu Ser Ile Val Glu Lys Ile Gly Ala Arg Arg Leu
 35 40 45
 Gly Asn Lys Pro Ala Ala Ile Asp Trp Leu Leu Thr Asp Ser Arg Ser
 50 55 60
 Leu Cys Phe Pro Glu Glu Thr Leu Phe Phe Ala Ile Pro Thr Lys Arg

65					70					75				80
Asn	Asn	Gly	Ala	Arg	Tyr	Ile	Pro	Asp	Leu	Tyr	Glu	Arg	Gly	Val Arg
				85					90					95
Asn	Phe	Val	Val	Thr	Ser	Glu	Asp	Phe	Lys	Gly	Leu	Thr	Met	Asp Ser
			100					105					110	
Glu	Gln	Leu	Lys	Val	Thr	Met	Ala	Gln	Glu	Cys	Asn	Phe	Leu	Ile Ala
		115					120					125		
Pro	Asn	Thr	Leu	Lys	Ala	Leu	Gln	Lys	Leu	Ala	Glu	Gln	His	Arg Gly
	130					135					140			
Ser	Phe	Gln	Ile	Pro	Val	Val	Gly	Ile	Thr	Gly	Ser	Asn	Gly	Lys Thr
145					150					155				160
Ile	Val	Lys	Glu	Trp	Leu	His	Gln	Leu	Leu	Ser	Pro	Asp	Arg	Val Ile
				165					170					175
Val	Arg	Ser	Pro	Arg	Ser	Tyr	Asn	Ser	Gln	Ile	Gly	Val	Pro	Leu Ser
			180					185					190	
Val	Trp	Gln	Met	Asn	Glu	Glu	Ser	Glu	Leu	Gly	Ile	Phe	Glu	Ala Gly
		195					200					205		
Ile	Ser	Glu	Met	Gly	Glu	Met	Arg	Pro	Leu	Gln	Asn	Met	Ile	Lys Pro
210						215					220			
Thr	Ile	Gly	Ile	Leu	Thr	Asn	Ile	Gly	Gly	Ala	His	Gln	Glu	Asn Phe
225					230					235				240
Phe	Ser	Leu	Gln	Glu	Lys	Cys	Met	Glu	Lys	Leu	Ser	Leu	Phe	Lys Asp
				245					250					255
Cys	Asp	Val	Val	Ile	Tyr	Asn	Gly	Asp	Asn	Glu	Met	Ile	Ser	Asn Cys
			260					265					270	
Val	Gly	Lys	Ser	Met	Leu	Thr	Ala	Arg	Glu	Ile	Ala	Trp	Ser	Met Arg
			275				280					285		
Asp	Ile	Glu	Arg	Pro	Leu	Tyr	Ile	Ser	Arg	Val	Glu	Lys	Lys	Glu Asp
	290					295				300				
His	Thr	Val	Ile	Ser	Tyr	Arg	Tyr	Leu	Glu	Met	Asp	Asn	Thr	Phe Cys
305					310					315				320
Ile	Pro	Phe	Ile	Asp	Asp	Ala	Ser	Ile	Glu	Asn	Ser	Leu	Asn	Cys Leu
				325					330					335
Ala	Ala	Cys	Leu	Tyr	Leu	Met	Val	Pro	Ala	Asp	Gln	Ile	Thr	Glu Arg
			340					345					350	
Met	Ala	Arg	Leu	Glu	Pro	Val	Ala	Met	Arg	Leu	Glu	Val	Lys	Asp Gly
	355						360					365		
Lys	Asn	Asn	Cys	Ile	Leu	Ile	Asn	Asp	Ser	Tyr	Asn	Ser	Asp	Leu Ala
	370					375					380			
Ser	Leu	Asp	Ile	Ala	Leu	Asp	Phe	Leu	Tyr	Arg	Arg	Ser	Gln	Ser Lys
385					390					395				400
Gly	Leu	Lys	Arg	Thr	Leu	Ile	Leu	Ser	Asp	Ile	Leu	Glu	Thr	Gly Gln
				405					410					415
Ser	Thr	Thr	Thr	Leu	Tyr	Arg	Lys	Val	Ala	Gln	Leu	Val	His	Ser Arg
			420					425					430	
Gly	Ile	Glu	Lys	Ile	Ile	Gly	Val	Gly	Ala	Glu	Ile	Ser	Ser	Cys Ala
	435						440					445		
Ser	Lys	Phe	Asp	Ile	Glu	Lys	Tyr	Phe	Phe	Pro	Asp	Thr	Lys	Ala Leu
	450					455					460			
Leu	Ala	Ser	Asp	Val	Ile	Lys	Lys	Leu	Arg	Asn	Glu	Ile	Ile	Leu Ile
465					470					475				480
Lys	Gly	Ser	Arg	Asn	Phe	Gly	Phe	Asp	Leu	Val	Ser	Glu	Glu	Leu Glu
				485					490					495
Leu	Lys	Val	His	Glu	Thr	Ile	Leu	Glu	Val	Asn	Leu	Gly	Ala	Met Val
			500					505					510	
Ala	Asn	Leu	Asn	His	Tyr	Arg	Ser	Met	Leu	Lys	Pro	Glu	Thr	Lys Met
	515						520					525		
Val	Cys	Met	Val	Lys	Ala	Ser	Ala	Tyr	Gly	Ala	Gly	Ser	Tyr	Glu Ile
	530					535					540			

Ala Lys Thr Leu Gln Glu His His Ala Asp Tyr Leu Ala Val Ala Val
 545 550 555 560
 Ala Asp Glu Gly Ser Asp Leu Arg Lys Ala Gly Ile Thr Ala Ser Ile
 565 570 575
 Ile Ile Met Asp Pro Glu Leu Thr Ala Phe Lys Thr Met Phe Asp Tyr
 580 585 590
 Lys Leu Glu Pro Glu Val Tyr Asn Phe His Leu Leu Asp Ala Leu Ile
 595 600 605
 Lys Ala Ala Glu Lys Glu Gly Ile Thr Asn Phe Pro Ile His Val Lys
 610 615 620
 Leu Asp Thr Gly Met His Arg Leu Gly Phe Glu Glu Lys Asp Ile Pro
 625 630 635 640
 Gln Leu Ile Arg Arg Leu Lys Asn Gln Asn Ala Leu Ile Pro Arg Ser
 645 650 655
 Val Phe Ser His Phe Val Gly Ser Asp Ser Ala Gln Phe Asp Ala Phe
 660 665 670
 Thr Arg Gln Gln Ile Glu Arg Tyr Glu Lys Met Ser Lys Glu Leu Gln
 675 680 685
 Asp Ala Phe Pro His Lys Ile Leu Arg His Ile Cys Asn Thr Ala Gly
 690 695 700
 Ile Glu Arg Phe Pro Gly Ala Gln Phe Asp Met Val Arg Leu Gly Ile
 705 710 715 720
 Gly Leu Tyr Gly Ile Ser Pro Ile Asp Asn Ser Ile Ile Asn Asn Val
 725 730 735
 Ser Thr Leu Lys Thr Thr Ile Leu Gln Ile Arg Asp Val Ala Glu Glu
 740 745 750
 Asp Thr Val Gly Tyr Ser Arg Lys Gly His Leu Ile Arg Pro Ser Arg
 755 760 765
 Ile Ala Ala Ile Pro Ile Gly Tyr Ala Asp Gly Leu Asn Arg His Leu
 770 775 780
 Gly Cys Gly His Gly Tyr Cys Leu Val Asn Gly Lys Lys Ala Pro Tyr
 785 790 795 800
 Val Gly Asn Ile Cys Met Asp Val Cys Met Ile Asp Val Thr Asp Ile
 805 810 815
 Asp Cys Arg Glu Gly Asp Gln Ala Ile Ile Phe Gly Asp Glu Leu Pro
 820 825 830
 Ile Thr Ala Leu Ser Asp Ala Leu Glu Thr Ile Pro Tyr Glu Val Leu
 835 840 845
 Thr Gly Ile Ser Thr Arg Val Lys Arg Val Tyr Tyr Gln Asp
 850 855 860

<210> 9447

<211> 96

<212> PRT

<213> B.fragilis

<400> 9447

Lys Asn Glu Thr Ala Leu Leu Ile Ile Cys Lys Phe Arg Tyr Lys Asn
 1 5 10 15
 Pro Pro Ala Leu Ala Leu Val Asp His Asp Ile Arg Gln Glu Ser Gly
 20 25 30
 Asp Phe Tyr Ile Pro Thr Phe Phe Ile Phe Leu Leu Lys Pro Ile Ser
 35 40 45
 Gly Pro Val Ile Phe Val Thr Tyr Asn Phe Asp Arg Lys Val Ala Phe
 50 55 60
 Thr Gln Tyr Ile Asn Tyr Lys Thr Lys Tyr Leu Phe Val Tyr Ile Pro
 65 70 75 80
 Lys Ala Thr Val Glu Asn Leu Phe Gln Ala Ala Thr Lys Val His Leu
 85 90 95

<210> 9448
 <211> 169
 <212> PRT
 <213> B.fragilis

<400> 9448

Ile	Pro	Ile	Ala	Met	Ser	Ser	Asn	Ile	Phe	Leu	Thr	Ile	Ala	Ile	Val
1				5					10					15	
Thr	Thr	Gly	Ile	Phe	Ala	Val	Gln	Phe	Ile	Leu	Ser	Ile	Phe	Phe	Gly
			20					25					30		
Asp	Ile	Asp	Ala	Asp	Ala	Asp	Ile	Asp	Thr	Asp	Ile	Ser	Ser	Val	Val
		35					40					45			
Ser	Phe	Lys	Gly	Leu	Thr	His	Phe	Gly	Ile	Gly	Phe	Gly	Trp	Tyr	Met
	50					55					60				
Tyr	Leu	Gln	His	Asn	Thr	Glu	Ile	Gln	Thr	Tyr	Leu	Thr	Gly	Val	Ala
65				70					75					80	
Ile	Gly	Leu	Ile	Phe	Val	Phe	Ala	Val	Trp	Phe	Leu	Tyr	Lys	Lys	Ala
				85					90					95	
Tyr	Gln	Leu	Gln	Gln	Thr	Thr	His	Ser	Glu	Arg	Thr	Glu	Gln	Leu	Val
			100					105						110	
Gly	Arg	Glu	Cys	Thr	Ile	Tyr	Phe	Lys	Gln	Asn	Glu	Lys	Lys	Tyr	Thr
		115					120					125			
Val	Gln	Ile	Ser	Arg	Asp	Gly	Ala	Met	Arg	Glu	Ile	Asp	Val	Val	Thr
	130					135					140				
Glu	Ser	Gly	Lys	Ser	Tyr	Gln	Thr	Gly	Asp	Lys	Ala	Thr	Ile	Thr	Ser
145					150					155					160
Tyr	Lys	Asp	Gly	Thr	Leu	Tyr	Ile	Gln							
				165											

<210> 9449
 <211> 525
 <212> PRT
 <213> B.fragilis

<400> 9449

Leu	Asn	Asp	Ala	Asp	Met	Met	Gly	Leu	Phe	Phe	Val	Tyr	Ile	Val	Lys
1				5					10					15	
Ser	Ser	Val	Cys	Leu	Ala	Gly	Phe	Tyr	Leu	Phe	Tyr	Arg	Leu	Leu	Leu
			20					25					30		
Ser	Lys	Glu	Thr	Phe	His	Arg	Phe	Asn	Arg	Ile	Ala	Leu	Leu	Thr	Leu
		35					40					45			
Leu	Leu	Leu	Ser	Leu	Leu	Leu	Pro	Leu	Val	Gln	Leu	Thr	Thr	Ile	Glu
	50					55					60				
Gln	Thr	Glu	Val	His	Gln	Thr	Met	Leu	Thr	Ile	Glu	Gln	Leu	Leu	Met
65				70						75				80	
Met	Ala	Asp	Met	Pro	Val	Ser	Glu	Val	Thr	Pro	Ala	Glu	Ala	Val	Thr
			85						90					95	
Leu	Ser	Gly	Ile	Gln	Ile	Leu	Leu	Met	Val	Tyr	Leu	Ser	Gly	Val	Leu
		100						105					110		
Phe	Phe	Ala	Cys	Arg	His	Ile	Tyr	Ser	Leu	Gly	Arg	Leu	Leu	Met	Leu
		115					120					125			
Leu	Arg	Ser	Gly	Glu	Lys	Glu	Lys	Met	Glu	Asn	Gly	Met	Thr	Leu	Val
	130					135					140				
Ile	His	Gln	Gln	Lys	Ile	Ser	Pro	Phe	Ser	Trp	Met	Lys	Tyr	Ile	Val
145					150					155					160
Ile	Ser	Lys	Val	Asp	Leu	Glu	Glu	Asp	Gly	Arg	Glu	Ile	Leu	Ile	His
				165					170					175	
Glu	Ala	Ala	His	Val	Arg	Asn	Arg	His	Ser	Val	Asp	Leu	Leu	Ile	Ala

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      180      185      190
Asp Ile Cys Ile Phe Phe Gln Trp Phe Asn Pro Ala Ser Trp Leu Leu
      195      200      205
Lys Gln Glu Leu Gln Asn Ile His Glu Tyr Glu Ala Asp Glu Ser Val
      210      215      220
Ile Arg Glu Gly Val Asn Ala Arg Gln Tyr Gln Leu Leu Leu Ile Lys
      225      230      235      240
Lys Ala Val Gly Thr Arg Leu Tyr Ser Met Ala Asn Ser Phe Asn His
      245      250      255
Ser Lys Leu Lys Lys Arg Ile Thr Met Met Leu Lys Glu Lys Ser Asn
      260      265      270
Pro Trp Ala Arg Leu Lys Tyr Leu Tyr Val Leu Pro Leu Ala Ala Ile
      275      280      285
Ala Val Thr Ala Phe Ala Arg Pro Glu Ile Ser Gly Lys Met Asp Glu
      290      295      300
Ile Ser Ala Val Lys Val Asn Asp Phe Val Gln Ile Val Gly Thr Lys
      305      310      315      320
Val Pro Glu Lys Lys Val Glu Val Leu Lys Asp Thr Val Lys Lys Asp
      325      330      335
Ala Pro Lys Glu Glu Ala Phe Glu Val Ser Arg Leu Glu Thr Val Pro
      340      345      350
Thr His Ser Lys Val Thr Ile Thr Asp Gly Met Lys Arg Ser Gly Met
      355      360      365
Asp Leu Phe Ser Val Arg Asn Ala Gly Ser Gln Pro Gln Pro Leu Ile
      370      375      380
Leu Val Asp Gly Lys Glu Ile Thr Gly Glu Gln Met Gln Arg Asp Ile
      385      390      395      400
Asn Pro Asp Met Ile Glu Ser Ile Ser Val Leu Lys Asp Glu Ala Ser
      405      410      415
Thr Ala Ile Tyr Gly Asp Lys Ala Lys His Gly Val Ile Leu Ile Thr
      420      425      430
Leu Lys Gly Lys Asp Val Gln Asn Val Leu Ser Leu Ser Ala Ser Asp
      435      440      445
Ser Glu Asp Gly Val Lys Val Val Gly Val Val Lys Asp His Leu Asp
      450      455      460
Lys Pro Leu Ala Gly Ala Ser Val Phe Ile Ser Gly Thr Val Ser Gly
      465      470      475      480
Thr Met Ser Asp Ala Tyr Gly Arg Phe Val Leu Leu Ala Pro Lys Asn
      485      490      495
Ala Met Leu Arg Ile Ser Tyr Thr Gly Met Thr Thr Val Glu Lys Ala
      500      505      510
Val Ala Pro Glu Val Asn Val Thr Leu Asn Pro Ala Asp
      515      520      525

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<210> 9450

<211> 272

<212> PRT

<213> B.fragilis

<400> 9450

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Ile Ser Thr Ala Phe Leu Leu Ile Met Ala Glu Ile Lys Glu Leu Thr
1      5      10      15
Phe Trp Asp His Leu Asp Glu Leu Arg Arg Val Leu Phe Arg Ile Ile
20     25     30
Gly Val Trp Phe Val Leu Ala Val Gly Tyr Phe Ile Ala Met Pro Tyr
35     40     45
Leu Phe Asp Arg Val Ile Leu Ala Pro Cys His Asn Asp Phe Ile Phe
50     55     60
Tyr His Leu Leu Arg Asp Ile Gly Gln Ala Phe Asp Leu Thr Asp Asp

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65          70          75          80
Phe Phe Thr Arg Glu Phe Lys Val Lys Leu Val Asn Ile Asn Leu Ala
85          90          95
Ala Pro Phe Phe Ile His Met Ser Thr Ala Phe Trp Met Ser Val Val
100        105        110
Thr Ala Thr Pro Tyr Leu Phe Phe Glu Ile Trp Arg Phe Ile Arg Pro
115        120        125
Ala Leu Tyr Pro Asn Glu Arg Lys Gly Val Arg Lys Ala Leu Thr Ile
130        135        140
Gly Thr Val Met Phe Phe Ile Gly Val Leu Leu Gly Tyr Phe Met Val
145        150        155        160
Tyr Pro Leu Thr Leu Arg Phe Leu Ser Thr Tyr Gln Leu Ser Ala Glu
165        170        175
Ile Glu Asn Gln Ile Ser Leu Asn Ser Tyr Ile Asp Asn Phe Met Met
180        185        190
Leu Val Leu Cys Met Gly Leu Ala Phe Glu Leu Pro Leu Val Thr Trp
195        200        205
Leu Leu Ser Leu Leu Gly Leu Val Asn Lys Ser Phe Leu Arg Lys Tyr
210        215        220
Arg Arg His Ala Ile Val Leu Ile Val Ile Ala Ala Val Ile Thr
225        230        235        240
Pro Thr Gly Asp Pro Phe Thr Leu Ser Ile Val Ala Ile Pro Leu Tyr
245        250        255
Leu Leu Tyr Glu Met Ser Ile Leu Met Ile Lys Asp Lys Asn Arg Ser
260        265        270

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<210> 9451

<211> 1043

<212> PRT

<213> B.fragilis

<400> 9451

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Ser Lys Tyr Tyr Gln Leu Leu Asn Gly Thr Trp Lys Phe Tyr Phe Val
1          5          10          15
Asp Ser Tyr Lys Asn Leu Pro Ala Asn Ile Thr Asp Pro Ala Ile Ser
20        25        30
Thr Ala Asp Trp Ala Asp Ile Lys Val Pro Gly Asn Trp Glu Val Gln
35        40        45
Gly His Gly Val Ala Ile Tyr Thr Asn His Gly Tyr Glu Phe Gln Pro
50        55        60
Arg Asn Pro Gln Pro Pro Thr Leu Pro Glu Ala Asn Pro Val Gly Val
65        70        75        80
Tyr Arg Arg Asp Ile Asp Ile Pro Ala Asp Trp Asp Gly Arg Asp Ile
85        90        95
Tyr Leu His Leu Ala Gly Ala Lys Ser Gly Val Tyr Val Tyr Ile Asn
100       105       110
Gly Gln Glu Val Gly Tyr Ser Glu Asp Ser Lys Asn Ser Ala Glu Phe
115       120       125
Leu Ile Asn Lys Phe Val Lys Pro Gly Lys Asn Val Leu Thr Leu Lys
130       135       140
Ile Tyr Arg Trp Ser Thr Gly Ser Tyr Leu Glu Cys Gln Asp Phe Trp
145       150       155       160
Arg Ile Ser Gly Ile Glu Arg Asp Val Phe Leu Tyr Ser Gln Pro Lys
165       170       175
Ala Ala Leu Lys Asp Phe Arg Val Thr Ser Thr Leu Asp Asp Thr Tyr
180       185       190
Lys Asp Gly Ile Phe Lys Leu Gly Val Asp Leu Arg Asn Asn Gly Ser
195       200       205
Thr Ala Gly Asn Met Thr Leu Val Tyr Glu Leu Leu Asp Ala Asn Gly

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210	215	220
Lys Val Val Ala Thr Gly	Lys Ala Thr Asn Val Ala Ala Gly Glu	
225	230	235
Thr Arg Thr Met Ser Phe Asp Gln Thr	Leu Pro Asp Val Lys Thr Trp	240
245	250	255
Thr Ser Glu Ala Pro Asn Leu Tyr Lys	Leu Val Met Thr Val Lys Glu	
260	265	270
Asn Gly Lys Val Asn Glu Ile Ile Pro Phe Asn Val Gly Phe Arg Arg		
275	280	285
Ile Glu Ile Lys Pro Thr Glu Gln Leu Ala Arg Asn Gly Lys Pro Tyr		
290	295	300
Val Cys Leu Phe Ile Asn Gly Gln Pro Leu Lys Leu Lys Gly Val Asn		
305	310	315
Ile His Glu His Asn Pro Ala Thr Gly His Tyr Met Thr Glu Glu Leu		
325	330	335
Met Arg Lys Asp Phe Glu Leu Met Lys Gln His Asn Leu Asn Thr Val		
340	345	350
Arg Leu Cys His Tyr Pro Gln Asp Arg Arg Phe Tyr Glu Leu Cys Asp		
355	360	365
Glu Tyr Gly Leu Tyr Val Tyr Asp Glu Ala Asn Ile Glu Ser His Gly		
370	375	380
Met Tyr Tyr Asp Leu Ala Lys Gly Gly Thr Leu Gly Asn Asn Pro Glu		
385	390	395
Trp Leu Lys Ala His Met Asp Arg Thr Ile Asn Met Phe Glu Arg Asn		
405	410	415
Lys Asn Tyr Pro Ser Leu Thr Phe Trp Ser Leu Gly Asn Glu Ala Gly		
420	425	430
Asn Gly Tyr Asn Phe Tyr Gln Thr Tyr Leu Trp Val Lys Asn Ala Asp		
435	440	445
Lys Asp Ile Met Asn Arg Pro Val Asn Tyr Glu Arg Ala Gln Trp Glu		
450	455	460
Trp Asn Ser Asp Met Tyr Val Pro Gln Tyr Pro Gly Ala Asp Trp Leu		
465	470	475
Glu Ala Met Gly Lys Arg Gly Ser Asp Arg Pro Ile Val Pro Ser Glu		
485	490	495
Tyr Ser His Ala Met Gly Asn Ser Asn Gly Asn Leu Trp Asp Gln Trp		
500	505	510
Lys Ala Ile Tyr Lys Tyr Pro Asn Leu Gln Gly Gly Tyr Ile Trp Asp		
515	520	525
Trp Val Asp Gln Gly Ile Asp Ala Val Asp Glu Asn Gly Arg His Phe		
530	535	540
Trp Thr Tyr Gly Gly Asp Tyr Gly Val Asn Thr Pro Asn Asp Gly Asn		
545	550	555
Phe Asn Cys Asn Gly Ile Val Ser Pro Asp Arg Thr Pro His Pro Ala		
565	570	575
Met Ala Glu Val Lys Tyr Val His Gln Asn Val Ala Phe Glu Ala Val		
580	585	590
Asp Pro Ala Asn Gly Lys Phe Leu Val Lys Asn Arg Phe Tyr Phe Thr		
595	600	605
Asn Leu Gln Lys Tyr Met Ile Ser Tyr Thr Ile Lys Ala Asn Gly Lys		
610	615	620
Thr Val Lys Gly Gly Lys Met Ser Val Asn Val Glu Pro Gln Gly Ser		
625	630	635
Lys Glu Ile Thr Ile Ala Thr Ser Gly Leu Lys Ser Lys Pro Gly Thr		
645	650	655
Glu Tyr Phe Ile Tyr Phe Asn Val Thr Thr Glu Pro Glu Pro Leu		
660	665	670
Ile Pro Val Gly His Glu Ile Ala Tyr Glu Gln Phe Arg Leu Pro Ile		
675	680	685

Glu Pro Gly Glu Arg Thr Phe Ala Thr Gly Gly Pro Ala Leu Lys Val
 690 695 700
 Ser Ala Glu Gly Asn Glu Leu Thr Ala Ser Ser Ser Lys Val Asn Phe
 705 710 715 720
 Val Phe Asp Lys Lys Thr Gly Leu Val Ser Ser Tyr Lys Val Gly Gly
 725 730 735
 Thr Glu Tyr Phe Lys Asp Gly Phe Gly Leu Gln Pro Asn Phe Trp Arg
 740 745 750
 Ala Pro Asn Asp Asn Asp Tyr Gly Asn Gly Asn Pro Lys Arg Leu Gln
 755 760 765
 Val Trp Lys Gln Ser Ser Lys Asn Phe Asn Val Val Asp Ala Asn Ile
 770 775 780
 Val Met Asp Gly Lys Asp Ala Val Leu Thr Ala Asn Tyr Leu Leu Ala
 785 790 795 800
 Ala Gly Asn Leu Tyr Ile Val Thr Tyr Arg Ile Ser Pro Ser Gly Val
 805 810 815
 Val Lys Ala Asp Phe Thr Phe Thr Ser Thr Asp Met Glu Ala Ala Lys
 820 825 830
 Thr Glu Ala Ser Glu Ala Thr Leu Met Ala Thr Phe Thr Pro Gly Ser
 835 840 845
 Asp Ala Ala Arg Lys Ala Ala Ser Lys Leu Glu Val Pro Arg Ile Gly
 850 855 860
 Val Arg Phe Arg Leu Pro Ala Glu Met Asn Gln Val Glu Tyr Phe Gly
 865 870 875 880
 Arg Gly Pro Glu Glu Asn Tyr Ile Asp Arg Asn Ala Gly Thr Leu Ile
 885 890 895
 Asp Leu Tyr Lys Thr Thr Ala Asp Gln Met Tyr Phe Pro Tyr Val Arg
 900 905 910
 Pro Gln Glu Asn Gly His His Thr Asp Thr Arg Trp Leu Thr Leu Asn
 915 920 925
 Lys Lys Gly Gly Lys Gly Leu Thr Ile Tyr Ala Asp Lys Thr Ile Gly
 930 935 940
 Phe Asn Ala Leu Arg Asn Ser Val Glu Asp Phe Asp Gly Glu Glu Thr
 945 950 955 960
 Val Ser Arg Pro Tyr Gln Trp Leu Asn Arg Asp Ala Gly Glu Leu Val
 965 970 975
 His Asp Glu Ser Lys Ala Lys Asp Gln Leu Pro Arg Lys Thr His Ile
 980 985 990
 Asn Asp Ile Thr Pro Arg Asn Phe Val Glu Val Cys Val Asp Met Lys
 995 1000 1005
 Gln Gln Gly Val Ala Gly Tyr Asn Ser Trp Gly Ala Arg Pro Glu Pro
 1010 1015 1020
 Gly Tyr Asn Ile Pro Ala Asn Gln Glu Tyr Lys Trp Gly Phe Thr Ile
 1025 1030 1035 1040
 Val Pro Arg

<210> 9452

<211> 100

<212> PRT

<213> B.fragilis

<400> 9452

Asp Lys Leu Tyr Cys Glu Asp Ala Cys Cys Asp Asn Ser Asn Gly Glu
 1 5 10 15
 Glu Asn Ile Thr Thr His Gly Asn Arg Tyr Leu Met Ile Tyr Phe Ile
 20 25 30
 Asp Ile Val Pro Lys Tyr Thr Pro Leu Ile Phe Ile Cys Lys Gly Lys
 35 40 45

Leu Ile Lys Lys Trp Lys Asn Arg Lys Met Asn Val Tyr Leu Tyr Pro
 50 55 60
 Lys Leu Leu Asn Arg Asn Arg Lys Asn Tyr Glu Asp Asn Pro Thr Leu
 65 70 75 80
 Cys Ser Glu Ser Val Ala Leu Phe Ile Arg Val Gly Cys Leu Cys Thr
 85 90 95
 Arg Ala Tyr Leu
 100

<210> 9453
 <211> 397
 <212> PRT
 <213> B.fragilis

<400> 9453
 Ile Ser Ser His Asn Ser Phe Ile Pro Leu Ser Tyr Lys Lys Lys Ala
 1 5 10 15
 Tyr Phe Leu Ile His Thr Asn Tyr Thr Phe His Ile Phe Ala Val Phe
 20 25 30
 Asn Thr His His Ile Phe Asn Asp Glu Asn Lys Lys Thr Ile Arg Gln
 35 40 45
 Tyr Glu Ile Met Ile Asn Thr Leu Thr Ser Leu Arg Phe Ile Phe Ala
 50 55 60
 Ile Met Val Phe Gly Ala His Cys Tyr Val Ile Asp Asn Val Phe Asn
 65 70 75 80
 Thr His Phe Phe Lys Glu Gly Phe Val Gly Val Ser Phe Phe Phe Val
 85 90 95
 Leu Ser Gly Phe Ser Ile Ala Tyr Asn Tyr Gln Glu Lys Leu Lys Asp
 100 105 110
 Asp Lys Ile Asp Lys Arg Thr Phe Trp Val Ala Arg Ile Ala Arg Ile
 115 120 125
 Tyr Pro Leu His Trp Leu Thr Leu Phe Ile Ala Ala Ile Leu Gly Ser
 130 135 140
 Tyr Val Ile Ala Ser Gly Thr Leu Asp Trp Leu Lys His Phe Leu Ala
 145 150 155 160
 Ser Leu Thr Leu Thr Asn Ala Tyr Ile Pro Arg Ala Asp Tyr Phe Phe
 165 170 175
 Ser Phe Asn Ser Pro Ser Trp Ser Leu Cys Cys Glu Gln Leu Phe Tyr
 180 185 190
 Ile Cys Phe Pro Phe Leu Ile Pro Leu Ala Lys Asn Tyr Lys Tyr Leu
 195 200 205
 Leu Ser Val Phe Gly Ile Val Ala Ile Leu Ile Val Val Gly Met Tyr
 210 215 220
 Phe Thr Pro Glu Asp Glu Ile Lys Gly Phe Trp Tyr Val Asn Pro Ile
 225 230 235 240
 Thr Arg Phe Pro Asp Phe Ile Val Gly Met Leu Leu Phe Gln Leu Tyr
 245 250 255
 Glu Arg Leu Lys Asn Lys Asn Ile Thr Ala Leu Gln Gly Ser Ile Ile
 260 265 270
 Glu Ile Ser Ser Ile Ile Leu Phe Leu Ile Phe Tyr Leu Tyr Ala Ala
 275 280 285
 Asp Ile Pro Lys Val Tyr Arg Tyr Ser Cys Tyr Tyr Trp Leu Pro Val
 290 295 300
 Ala Val Ile Leu Ile Ser Phe Ser Leu Gln Lys Gly Ile Phe Ser Arg
 305 310 315 320
 Ile Leu Ser Asn Arg Phe Leu Val Ile Gly Gly Glu Ile Ser Tyr Ser
 325 330 335
 Phe Tyr Leu Ile His Leu Phe Val Leu Leu Thr Tyr Ser Glu Trp Gln
 340 345 350

Lys Glu Asn Asn Leu His Thr Glu Trp Tyr Ile Ser Val Pro Ile Leu
 355 360 365
 Phe Ser Ile Ile Ile Leu Leu Ser Leu Leu Ser Tyr Tyr Phe Glu
 370 375 380
 Lys Pro Met Asn Lys Arg Val Lys Thr Leu Leu Asn Arg
 385 390 395

<210> 9454
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9454
 His Arg Val Lys Ala Cys Ser Leu Asp Val Asn Lys Lys Phe Phe Lys
 1 5 10 15
 Cys Lys Arg Leu Val Ile Cys Ala Gln Glu Pro Asp Asn Arg Gln Lys
 20 25 30
 Thr Leu Thr Met Leu Ile Glu Lys Arg Tyr Lys Asp Glu Asp Thr Gly
 35 40 45
 Ser Asp Gly Val Asn Ser Leu Pro Lys Leu Lys Leu Ser Tyr Ser Ala
 50 55 60
 Gly Val Cys Phe Phe Leu Lys Gln Ala Lys Arg Thr Ile Ile Asn
 65 70 75 80
 Leu Glu Ile Lys Lys
 85

<210> 9455
 <211> 262
 <212> PRT
 <213> B.fragilis

<400> 9455
 Lys Thr Asn Asn Leu Leu Ser Met Ile Ser Pro Leu Ala Tyr Ile His
 1 5 10 15
 Pro Glu Ala Lys Ile Gly Glu Asn Val Glu Ile Ala Pro Phe Val Tyr
 20 25 30
 Ile Asp Arg Asn Val Val Ile Gly Asp Asn Asn Lys Ile Met Ala Asn
 35 40 45
 Ala Asn Ile Leu Tyr Gly Ser Arg Ile Gly Asn Gly Asn Thr Ile Phe
 50 55 60
 Pro Gly Ala Val Ile Gly Ala Ile Pro Gln Asp Leu Lys Phe Lys Gly
 65 70 75 80
 Glu Glu Ser Thr Ala Glu Ile Gly Asp Asn Asn Leu Ile Arg Glu Asn
 85 90 95
 Val Thr Ile Asn Arg Gly Thr Ala Ala Lys Gly Arg Thr Ile Val Gly
 100 105 110
 Asn Asn Asn Leu Leu Met Glu Gly Val His Val Ala His Asp Ala Leu
 115 120 125
 Ile Gly Asn Gly Cys Ile Val Gly Asn Ser Thr Lys Met Ala Gly Glu
 130 135 140
 Ile Ile Ile Asp Asp Asn Ala Ile Ile Ser Ala Asn Val Leu Met His
 145 150 155 160
 Gln Phe Cys Arg Val Gly Gly Tyr Val Met Ile Gln Gly Gly Cys Arg
 165 170 175
 Phe Ser Lys Asp Ile Pro Pro Tyr Ile Ile Ala Gly Arg Glu Pro Ile
 180 185 190
 Ala Tyr Ser Gly Ile Asn Ile Ile Gly Leu Arg Arg Arg Gly Phe Ser
 195 200 205
 Asn Glu Ile Ile Glu Asn Ile His Asn Ala Tyr Arg Ile Ile Tyr Gln

210		215		220
Ser Gly Leu Asn Thr	Ser Asp Ala Leu Thr Lys	Val Glu Ala Glu Val		
225	230	235	240	
Pro Ala Ser Pro Glu Ile	Glu Tyr Ile Val Asp	Phe Ile Arg Asn Ser		
	245	250	255	
Glu Arg Gly Ile Ile Arg				
260				

<210> 9456

<211> 389

<212> PRT

<213> B.fragilis

<400> 9456

Leu Met Ser Asn Gln Arg Tyr Met Met Arg Gly Val Ser Ala Ser Lys	
1	15
Glu Asp Val His Asn Ala Ile Lys Asn Ile Asp Lys Gly Ile Phe Pro	
20	30
Gln Ala Phe Cys Lys Ile Ile Pro Asp Ile Leu Gly Gly Asp Pro Glu	
35	45
Tyr Cys Asn Ile Met His Ala Asp Gly Ala Gly Thr Lys Ser Ser Leu	
50	60
Ala Tyr Met Tyr Trp Lys Glu Thr Gly Asp Leu Ser Val Trp Lys Gly	
65	80
Ile Ala Gln Asp Ala Leu Ile Met Asn Ile Asp Asp Leu Leu Cys Val	
85	95
Gly Ala Val Asp Asn Ile Leu Val Ser Ser Thr Ile Gly Arg Asn Lys	
100	110
Leu Leu Ile Pro Gly Glu Val Ile Ser Ala Ile Ile Asn Gly Thr Asp	
115	125
Glu Leu Leu Ala Glu Leu Arg Glu Met Gly Val Gly Val Tyr Ala Thr	
130	140
Gly Gly Glu Thr Ala Asp Val Gly Asp Leu Val Arg Thr Ile Ile Val	
145	160
Asp Ser Thr Val Thr Cys Arg Met Lys Arg Ala Asp Val Ile Asn Asn	
165	175
Ala Asn Ile Arg Pro Gly Asp Val Ile Val Gly Leu Ala Ser His Gly	
180	190
Gln Ala Thr Tyr Glu Lys Glu Tyr Asn Gly Gly Met Gly Ser Asn Gly	
195	205
Leu Thr Ser Ala Arg His Asp Val Phe Ala Lys Tyr Leu Ala Glu Lys	
210	220
Tyr Pro Glu Ser Tyr Asp Ala Ala Val Pro Glu Glu Leu Val Tyr Ser	
225	240
Gly Gly Leu Lys Leu Thr Asp Thr Val Glu Gly Ser Pro Ile Asp Ala	
245	255
Gly Lys Leu Val Leu Ser Pro Thr Arg Thr Tyr Ala Pro Val Val Lys	
260	270
Lys Leu Leu Asp Ala Leu Arg Pro Glu Ile His Gly Met Val His Cys	
275	285
Ser Gly Gly Ala Gln Thr Lys Val Leu His Phe Val Gly Asp Val Arg	
290	300
Val Val Lys Asp Asn Leu Phe Pro Val Pro Pro Leu Phe Arg Thr Ile	
305	320
Gln Glu Gln Ser Gly Thr Asp Trp Ala Glu Met Tyr Lys Val Phe Asn	
325	335
Met Gly His Arg Leu Glu Val Tyr Leu Ser Pro Glu His Ala Ala Glu	
340	350
Val Ile Ala Ile Ser Glu Ser Phe Gly Ile Pro Ala Gln Ile Val Gly	

355 360 365
 Arg Ile Glu Glu Ser Asp Lys Lys Glu Leu Ile Ile Lys Ser Glu Phe
 370 375 380
 Gly Glu Phe Arg Tyr
 385

<210> 9457
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 9457
 Val Pro Leu Lys Asp Val Leu Ser Lys Ile Phe Val Lys Leu Ser Pro
 1 5 10 15
 Ile Thr Ser Ser Trp Ser Arg Val Ser Ala Leu Lys Glu Val Leu Leu
 20 25 30
 Glu Glu Val Cys Lys Tyr Gly Met Asn Ser Thr Cys Gly Leu Ile Val
 35 40 45
 Asn Ser Ser Arg Gly Ile Ile Tyr Val Asp Lys Thr Glu Asn Phe Ala
 50 55 60
 Ala Ala Ala Arg Ala Ala Lys Glu Val Gln Glu Gln Met Ala Glu
 65 70 75 80
 Gln Leu Lys Ala Ile Leu
 85

<210> 9458
 <211> 230
 <212> PRT
 <213> B.fragilis

<400> 9458
 Ile Glu Ile Asn Lys Lys Arg Arg Met Phe Ser Lys His Pro Pro Phe
 1 5 10 15
 Leu Trp Asn Lys Pro Ser His Leu Ile Cys Asn Leu Ser Val Phe Tyr
 20 25 30
 Tyr Phe Tyr Ala Ile Asn Lys Thr Val Thr Thr Met Ile Tyr Arg Phe
 35 40 45
 Thr Ile Ile Ser Asp Glu Val Asp Asp Phe Val Arg Glu Ile Gln Ile
 50 55 60
 Asp Pro Glu Ala Thr Phe Phe Asp Leu His Glu Ala Ile Leu Lys Ala
 65 70 75 80
 Ala Asn Tyr Thr Asn Asp Gln Met Thr Ser Phe Phe Ile Cys Asp Asp
 85 90 95
 Asp Trp Glu Lys Glu Lys Glu Ile Thr Leu Glu Glu Met Asp Asn Asn
 100 105 110
 Pro Glu Met Asp Ser Trp Ile Met Lys Glu Thr Arg Leu Asn Glu Leu
 115 120 125
 Ile Glu Asp Glu Lys Gln Lys Leu Leu Tyr Val Phe Asp Tyr Met Thr
 130 135 140
 Glu Arg Cys Phe Phe Ile Glu Leu Ser Glu Ile Ile Thr Gly Lys Glu
 145 150 155 160
 Ile Lys Gly Ala Lys Cys Thr Lys Lys Ser Gly Glu Ala Pro Lys Gln
 165 170 175
 Thr Val Asp Phe Glu Glu Met Ala Ala Gly Gly Gly Ser Leu Asp Leu
 180 185 190
 Asp Glu Asn Phe Tyr Gly Asp Gln Asp Phe Asp Met Glu Asp Phe Asp
 195 200 205
 Ala Glu Gly Phe Asp Val Asn Asp Gly Ala Ala Gly Gly Gly Ser Ser
 210 215 220

<210> 9460

<211> 130
 <212> PRT
 <213> B.fragilis

<400> 9460

Ala	Met	Gly	Lys	Pro	Ile	Ile	Arg	Ile	Leu	Tyr	Phe	Gln	Arg	Arg	Gly
1			5						10					15	
Ile	Asp	Ala	Asn	Gly	Tyr	Tyr	Arg	Leu	Asn	Tyr	Ile	Ile	Gln	Arg	Gly
		20						25					30		
Arg	Lys	Ile	Leu	Tyr	Tyr	Ala	Thr	Glu	Thr	Lys	Asp	Phe	Glu	Tyr	Ser
	35					40						45			
Asp	Cys	Phe	Thr	Ser	Ser	Cys	Leu	Ala	Glu	Arg	Lys	Glu	Thr	Ile	Leu
	50					55					60				
Asp	Thr	Ala	Gln	Tyr	Ile	Phe	Lys	Val	His	Lys	Val	Arg	Tyr	Ser	Arg
65					70					75					80
Leu	Ile	Leu	Ser	Pro	Ser	Tyr	Ser	Tyr	Ile	Thr	Arg	Tyr	Lys	Ser	Arg
			85						90					95	
Ile	Arg	Gln	Ile	Cys	Thr	Ala	Thr	Arg	Phe	Cys	Lys	Ser	Asp	Ile	Ile
		100						105					110		
Trp	Thr	Met	Cys	Pro	Arg	Ser	Phe	Ile	Pro	Ile	Ser	Lys	Ile	Pro	Phe
		115					120						125		
Ser	Phe														
	130														

<210> 9461
 <211> 368
 <212> PRT
 <213> B.fragilis

<400> 9461

Thr	Asn	Leu	Lys	Ile	Lys	Thr	Met	Lys	Asp	Leu	Leu	Ser	Ile	Val	Ser
1			5						10					15	
Lys	Phe	Lys	Val	Gln	Gly	Thr	Val	Gly	Glu	Ile	Lys	Pro	Leu	Gly	Ala
		20						25					30		
Gly	Leu	Ile	Asn	Asp	Thr	Tyr	Lys	Val	Asn	Thr	Thr	Glu	Ala	Asp	Ala
	35					40						45			
Pro	Asp	Tyr	Val	Leu	Gln	Arg	Ile	Asn	His	Ala	Ile	Phe	Gln	Asn	Val
	50					55					60				
Glu	Met	Leu	Gln	Asp	Asn	Ile	Ala	Ala	Val	Thr	Gly	His	Ile	Arg	Lys
65				70						75					80
Lys	Leu	Thr	Glu	Ala	Gly	Glu	Thr	Asp	Val	Asp	Arg	Lys	Val	Leu	Thr
			85					90						95	
Phe	Leu	Pro	Thr	Glu	Glu	Gly	Lys	Thr	Tyr	Trp	Phe	Asp	Gly	Asp	Ser
		100						105					110		
Tyr	Trp	Arg	Val	Met	Val	Phe	Ile	Pro	Arg	Ala	Lys	Thr	Tyr	Glu	Thr
	115						120					125			
Val	Asn	Pro	Glu	Tyr	Ser	Tyr	Tyr	Ala	Gly	Ala	Ala	Phe	Gly	Asn	Phe
	130					135					140				
Gln	Ala	Met	Leu	Ala	Asp	Ile	Pro	Ala	Thr	Leu	Gly	Glu	Thr	Ile	Pro
145					150					155				160	
Asp	Phe	His	Asn	Met	Glu	Phe	Arg	Leu	Lys	Gln	Leu	Arg	Glu	Ala	Val
			165						170					175	
Ala	Ala	Asn	Ala	Ala	Gly	Arg	Val	Ala	Glu	Val	Gln	Tyr	Tyr	Leu	Asp
		180						185						190	
Glu	Ile	Glu	Lys	Arg	Ala	Asp	Glu	Met	Cys	Lys	Ala	Glu	Arg	Leu	Tyr
	195					200						205			
Arg	Glu	Gly	Lys	Leu	Pro	Lys	Arg	Val	Cys	His	Cys	Asp	Thr	Lys	Val
	210					215					220				
Asn	Asn	Met	Met	Phe	Asp	Glu	Asp	Gly	Lys	Val	Leu	Cys	Val	Ile	Asp


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225          230          235          240
Leu Asp Thr Val Met Pro Ser Phe Ile Phe Ser Asp Tyr Gly Asp Phe
          245          250          255
Leu Arg Thr Gly Ala Asn Thr Gly Asp Glu Asp Asp Lys Asn Leu Asp
          260          265          270
Asn Val Asn Phe Asn Met Glu Ile Phe Lys Ala Phe Thr Lys Gly Tyr
          275          280          285
Leu Glu Gly Ala Gly Ser Phe Leu Thr Pro Ile Glu Ile Glu Asn Leu
          290          295          300
Pro Tyr Ala Ala Ala Leu Phe Pro Tyr Met Gln Cys Val Arg Phe Leu
305          310          315          320
Ala Asp Tyr Ile Asn Gly Asp Thr Tyr Tyr Lys Ile Lys Tyr Pro Glu
          325          330          335
His Asn Leu Val Arg Thr Lys Ala Gln Phe Lys Leu Leu Gln Ser Val
          340          345          350
Glu Glu His Thr Pro Glu Met Glu Ala Tyr Ile Lys Glu Cys Leu Gly
          355          360          365

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<210> 9462

<211> 72

<212> PRT

<213> B.fragilis

<400> 9462

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Pro Gly Ser Asn Gly Met Lys Arg Ser Asp Gly Ser Ile Leu Asn Lys
1          5          10          15
Arg Lys Lys Tyr Tyr Arg Ile Phe Arg Ser Gln Leu Asn Lys Gln Val
          20          25          30
Tyr Ile Glu Asp Lys Phe Leu Thr Lys Lys Arg Lys Lys Pro Asp Lys
          35          40          45
Ile Lys Arg Val Thr Lys Gly Ala Leu Leu His Asn Ile Phe Ser Ile
          50          55          60
Phe Val Asp Asn Lys Asn Ile Pro
65          70

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<210> 9463

<211> 548

<212> PRT

<213> B.fragilis

<400> 9463

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Gln Thr Gln Lys Lys Arg Thr Met Thr Gln Glu Met Met Ile Met Ala
1          5          10          15
Ala Ile Leu Val Ala Val Ile Leu Ile Thr Phe Ile Gly Ile Leu Ser
          20          25          30
Arg Tyr Arg Lys Cys Lys Ser Asp Glu Val Leu Val Val Tyr Gly Lys
          35          40          45
Thr Gly Gly Asp Lys Lys Ser Ala Lys Leu Tyr His Gly Gly Ala Ala
          50          55          60
Phe Val Trp Pro Ile Val Gln Gly Tyr Glu Phe Leu Ser Met Lys Pro
65          70          75          80
Met Gln Ile Asp Cys Lys Leu Thr Gly Ala Leu Ser Ala Gln Asn Ile
          85          90          95
Arg Val Asp Val Pro Thr Thr Ile Thr Val Ala Ile Ser Thr Asp Pro
          100          105          110
Glu Val Met Gln Asn Ala Ala Glu Arg Met Leu Gly Leu Thr Met Asp
          115          120          125
Asp Lys Gln Asn Leu Ile Thr Asp Val Val Tyr Gly Gln Met Arg Leu
          130          135          140

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Val Ile Ala Asp Met Thr Ile Glu Glu Leu Asn Ser Asp Arg Asp Lys
 145 150 155 160
 Phe Leu Ser Lys Val Lys Asp Asn Ile Asp Thr Glu Leu Arg Lys Phe
 165 170 175
 Gly Leu Tyr Leu Met Asn Ile Asn Ile Ser Asp Ile Arg Asp Ala Ala
 180 185 190
 Asn Tyr Ile Val Asn Leu Gly Lys Glu Ala Glu Ser Lys Ala Gln Asn
 195 200 205
 Glu Ala Gln Ala Asn Ile Glu Glu Gln Glu Lys Leu Gly Ala Ile Lys
 210 215 220
 Ile Ala Asn Gln Ile Lys Glu Arg Glu Thr Lys Val Ala Glu Thr Arg
 225 230 235 240
 Lys Asp Gln Asp Ile Ala Ile Ala Glu Thr Lys Lys Leu Gln Glu Ile
 245 250 255
 Ser Val Ala Asn Ala Asp Lys Asp Arg Ile Ser Gln Val Ala Ile Ala
 260 265 270
 Asn Ala Glu Lys Glu Ser Gln Val Ala Lys Ala Glu Ala Glu Lys Asn
 275 280 285
 Ile Arg Ile Glu Gln Ala Asn Thr Glu Lys Glu Ser Arg Ile Ala Glu
 290 295 300
 Leu Asn Ser Asp Met Glu Ile Lys Gln Ala Glu Ala Gln Lys Lys Ala
 305 310 315 320
 Ala Ile Gly Arg Asn Glu Ala Gln Lys Glu Ile Ala Leu Ser Asn Ser
 325 330 335
 Glu Leu Ala Val Thr Gln Ala Asn Ala Asp Lys Gln Ala Gly Glu Ala
 340 345 350
 Ser Ala Lys Ser Glu Ala Ala Val Gln Thr Ala Lys Glu Ile Ala Gln
 355 360 365
 Lys Glu Val Glu Glu Ala Lys Ala Arg Lys Val Glu Ser Ser Leu Lys
 370 375 380
 Ala Glu Lys Ile Val Pro Ala Glu Val Ala Arg Gln Glu Ala Ile Leu
 385 390 395 400
 Gln Ala Glu Ala Val Ala Glu Lys Ile Thr Arg Glu Ala Glu Ala Arg
 405 410 415
 Ala Lys Ala Thr Leu Ala Gln Ala Glu Ala Glu Ala Lys Ala Ile Gln
 420 425 430
 Leu Lys Leu Glu Ala Glu Ala Glu Gly Lys Lys Arg Ser Leu Leu Ala
 435 440 445
 Glu Ala Glu Gly Phe Glu Ala Met Val Lys Ala Ala Glu Ser Asn Pro
 450 455 460
 Ala Ile Ala Ile Gln Tyr Lys Met Val Asp Gln Trp Lys Glu Ile Ala
 465 470 475 480
 Gly Glu Gln Val Lys Ala Phe Glu His Ile Asn Leu Gly Asn Ile Thr
 485 490 495
 Val Phe Asp Gly Gly Asn Gly Gly Thr Ser Asn Phe Leu Asn Thr Leu
 500 505 510
 Val Lys Thr Val Ala Pro Ser Leu Gly Val Leu Asp Lys Leu Pro Ile
 515 520 525
 Gly Glu Thr Val Lys Asn Met Ile His Pro Glu Glu Lys Lys Glu Glu
 530 535 540
 Thr Glu Lys Lys
 545

<210> 9464

<211> 1180

<212> PRT

<213> B.fragilis

<400> 9464

Thr	Ser	Lys	Asn	Ile	Thr	Lys	Gln	Ile	Val	His	Lys	Thr	Asn	Cys	Leu
1			5						10					15	
Gln	Lys	Leu	Arg	Tyr	Arg	Ser	Asn	Asp	Thr	Phe	Val	His	Ile	Phe	Ile
			20					25					30		
Arg	Pro	His	Glu	Asn	Pro	Gly	Ile	Ile	Met	Tyr	Phe	Cys	Cys	Met	Glu
		35					40					45			
Asn	Glu	Val	Asn	Glu	Ser	Phe	Glu	Ile	Leu	Leu	Ala	Ala	Cys	Arg	Thr
	50						55				60				
Ala	Asp	Ser	Asn	Leu	Ala	Val	Ala	Tyr	Lys	Gln	Leu	Arg	Asp	Leu	Leu
65					70					75					80
Glu	Arg	Leu	Cys	Arg	Ala	Gln	Met	Gln	Asp	Glu	Ser	Leu	Gln	Met	Thr
			85						90					95	
Asp	Leu	Ser	Ala	Arg	Ile	Ser	Phe	Val	Ser	Ala	Arg	Ala	Gly	Leu	Thr
			100					105					110		
Ile	Val	Glu	Gln	Asn	Arg	Leu	His	Thr	Phe	Arg	Leu	Thr	Ser	Asn	Ala
		115					120					125			
Ile	Leu	Asn	Arg	Lys	Glu	Glu	Pro	Val	Arg	Glu	Lys	Leu	Leu	Arg	Asp
	130					135					140				
Ala	Lys	Thr	Leu	Ala	Phe	Phe	Ile	Arg	Lys	Leu	Tyr	Glu	Val	Glu	Ile
145					150					155					160
Pro	Gly	Glu	Leu	Tyr	His	Leu	Leu	Pro	Arg	Ala	Asp	Ala	Thr	Tyr	Leu
			165						170					175	
Val	Ala	Pro	Pro	Ala	Lys	Lys	Arg	Ile	Glu	Arg	Met	Arg	Val	Cys	Tyr
			180					185					190		
Gln	Tyr	Ala	Asp	Glu	Gln	Tyr	Leu	Tyr	Val	Thr	Pro	Val	Asp	Thr	Ile
		195					200						205		
Ala	Asp	Glu	Tyr	Leu	Arg	Ile	Arg	Tyr	Asn	Val	Pro	Gln	Ile	Asn	Glu
	210					215					220				
Glu	Phe	Ala	Gln	Thr	Cys	Glu	Ile	Leu	Trp	Cys	His	Ala	Gln	Leu	Asn
225					230					235					240
Leu	Leu	Asp	Val	Ala	Ile	Asp	Lys	Thr	Gly	Val	Leu	Thr	Pro	Ser	Phe
			245						250					255	
Ile	Val	Leu	Glu	Pro	Asp	Tyr	Leu	Ile	Asp	Ile	Ser	Ser	Leu	Ala	Glu
		260						265					270		
Cys	Phe	Arg	Asp	Tyr	Gly	His	His	Pro	Ala	Asn	Tyr	Val	Leu	Ala	Arg
	275						280						285		
Leu	Gln	Pro	Ile	Asp	Asn	Ala	Arg	Pro	Leu	Leu	Leu	Gly	Asn	Ile	Ala
	290					295						300			
Asn	Leu	Phe	Leu	Asp	Glu	Trp	Ile	His	Ala	Glu	Asn	Ala	Pro	Asp	Tyr
305					310					315					320
Arg	Glu	Cys	Met	Gln	Lys	Ala	Phe	Arg	Arg	Tyr	Pro	Ile	Glu	Leu	Ala
			325						330					335	
Ala	Cys	Thr	Asp	Leu	Arg	Asp	Arg	Glu	Lys	Glu	Arg	Gln	Phe	Phe	Asp
			340					345					350		
Asp	Cys	Lys	Leu	His	Phe	Glu	His	Ile	Arg	Glu	Val	Val	Thr	Asp	Thr
	355						360						365		
Phe	Arg	Ala	Pro	Gly	Tyr	Glu	Leu	Asp	Lys	Thr	Asp	Ala	Val	Leu	Glu
	370					375					380				
Pro	Ser	Tyr	Ile	Cys	Glu	Ala	Leu	Gly	Leu	Gln	Gly	Arg	Leu	Asp	Tyr
385					390					395					400
Met	Gln	Arg	Asp	Met	Ser	Ser	Phe	Ile	Glu	Met	Lys	Ser	Gly	Lys	Ala
			405						410					415	
Asp	Glu	Phe	Ser	Ile	Arg	Asn	Lys	Val	Glu	Pro	Lys	Glu	Asn	Asn	Lys
			420					425					430		
Val	Gln	Met	Leu	Leu	Tyr	Gln	Ala	Val	Leu	Gln	Tyr	Ser	Met	Gly	Met
	435						440						445		
Asp	His	His	Arg	Val	Lys	Ala	Tyr	Leu	Leu	Tyr	Thr	Arg	Tyr	Pro	Leu
	450					455					460				
Leu	Tyr	Pro	Ala	Arg	Pro	Ser	Trp	Ala	Met	Val	Arg	Arg	Ile	Ile	Asn

465 470 475 480
 Leu Arg Asn Arg Ile Val Ser Asp Glu Tyr Gly Ile Gln Leu Arg Asn
 485 490 495
 Ser Val Glu Tyr Thr Ala Ser Lys Leu Gln Ala Ile Arg Ser Asp Ile
 500 505 510
 Leu Asn Glu Arg Gly Leu Ser Gly Arg Phe Trp Glu Gln Tyr Leu Arg
 515 520 525
 Pro Ser Ile Asp Asn Leu Ser Gln Lys Leu Ala Ser Leu Thr Pro Leu
 530 535 540
 Glu Gln Ser Tyr Phe Tyr Ala Leu Tyr Asn Phe Ile Thr Lys Glu Leu
 545 550 555 560
 Tyr Thr Ser Lys Ser Gly Asp Val Asp Tyr Glu Gly Arg Thr Gly Ser
 565 570 575
 Ala Ala Leu Trp Leu Ser Thr Leu Thr Glu Lys Cys Glu Ala Gly Glu
 580 585 590
 Ile Leu Tyr Asp Leu Arg Ile Lys Glu Asn His Ala Ala Asp Glu His
 595 600 605
 Lys Ala Tyr Ile Leu Leu Glu Gln Arg Lys Glu Gly Tyr Gly Glu Asn
 610 615 620
 Lys Leu Ser Pro Glu Pro Asn Glu Ile Ser Ser Glu Val Glu Lys Gly
 625 630 635 640
 Ala Gln Ala Leu Pro Asn Phe Arg Gln Gly Asp Ala Ile Val Leu Tyr
 645 650 655
 Glu Arg Asn Arg Asn Glu Asp Asn Val Thr Asn Lys Met Val Phe Lys
 660 665 670
 Gly Asn Ile Glu Phe Ile Thr Glu Glu Glu Ile Gly Ile Arg Leu Arg
 675 680 685
 Ala Thr Gln Gln Asn Ser Ser Val Leu Pro Pro Asp Ser Leu Tyr Ala
 690 695 700
 Ile Glu His Asp Thr Met Asp Thr Thr Phe Arg Ser Met Tyr Gln Ala
 705 710 715 720
 Leu Ser Ala Phe Ala Ser Ala Thr Lys Glu Arg Arg Asp Leu Leu Leu
 725 730 735
 Ala Gln Arg Met Pro Glu Phe Glu Tyr Gly Leu Asp Lys Gln Ile Leu
 740 745 750
 Thr Ala Pro Asp Asp Phe Thr Arg Val Thr Leu Lys Ala Leu Ala Ala
 755 760 765
 Lys Asp Phe Phe Leu Leu Val Gly Pro Pro Gly Thr Gly Lys Thr Ser
 770 775 780
 Cys Ala Leu Lys Lys Met Val Glu Thr Phe His Cys Glu Ala Gln Thr
 785 790 795 800
 Gln Ile Leu Leu Leu Ser Tyr Thr Asn Arg Ala Val Asp Glu Ile Cys
 805 810 815
 Lys Ala Ile Ser Ser Ile Arg Pro Glu Val Asp Phe Ile Arg Val Gly
 820 825 830
 Ser Glu Leu Ser Cys Asp Glu Ala Tyr Arg His His Leu Ile Glu Asn
 835 840 845
 Glu Leu Ser Leu Cys Thr Arg Arg Ser Glu Val Ala Glu Arg Ile Ala
 850 855 860
 Arg Cys Arg Ile Phe Val Gly Thr Val Ala Ser Ile Ser Gly Lys Pro
 865 870 875 880
 Glu Leu Phe Arg Leu Lys Arg Phe Asp Val Ala Ile Ile Asp Glu Ala
 885 890 895
 Thr Gln Ile Leu Glu Pro Gln Leu Leu Gly Ile Leu Cys Ala Arg Ser
 900 905 910
 Glu Asn Gly Glu Asn Ala Val Gly Lys Phe Ile Leu Ile Gly Asp His
 915 920 925
 Lys Gln Leu Pro Ala Val Val Leu Gln Asn Thr Glu Gln Ser Glu Ile
 930 935 940

Tyr Asp Glu Gly Leu Arg Ser Ala Gly Leu Lys Asn Leu Lys Asp Ser
 945 950 955 960
 Leu Phe Glu Arg Leu Tyr Arg Thr Leu Gln Thr Ser Ser Glu Asp Leu
 965 970 975
 Phe Pro Asp Ser Ala Ser Val Ser Ala Pro Asn His Arg Ser Phe Asp
 980 985 990
 Met Leu Cys Lys Gln Gly Arg Met His Pro Glu Val Ala His Phe Ala
 995 1000 1005
 Asn Gln Ala Phe Tyr Glu Gly Arg Leu Leu Pro Val Gly Leu Pro His
 1010 1015 1020
 Gln Met Glu Asp Asn Gln Asp Val Gln Arg Met Val Phe Leu Pro Ser
 1025 1030 1035 1040
 Glu Pro Glu Pro Gln Gly Thr Ser Ala Lys Val Asn His Ser Glu Ala
 1045 1050 1055
 Arg Ile Val Ala Arg Ile Ala Ala Asp Val Tyr Gln Gln Tyr Gly Gly
 1060 1065 1070
 Thr Phe Asp Gly Met Arg Thr Leu Gly Ile Ile Thr Pro Tyr Arg Ser
 1075 1080 1085
 Gln Ile Ala Leu Ile Arg Lys Glu Ile Val Lys Met Gly Ile Pro Glu
 1090 1095 1100
 Leu Asn Ser Ile Leu Val Asp Thr Val Glu Arg Phe Gln Gly Ser Glu
 1105 1110 1115 1120
 Arg Asp Val Ile Ile Tyr Ser Phe Cys Val Asn Tyr Pro Tyr Gln Leu
 1125 1130 1135
 Arg Phe Leu Ser Asn Leu Thr Glu Glu Asn Gly Val Phe Ile Asp Arg
 1140 1145 1150
 Lys Leu Asn Val Ala Leu Thr Arg Ala Arg Lys Gln Ser Leu His His
 1155 1160 1165
 Arg Gly Ser Pro Ile Ile Gly Thr Lys Pro Asp Leu
 1170 1175 1180

<210> 9465

<211> 462

<212> PRT

<213> B.fragilis

<400> 9465

Pro Met Leu Lys Gln Lys Thr Leu Lys Glu Ser Phe Ser Leu Arg Gly
 1 5 10 15
 Lys Gly Leu His Thr Gly Leu Asp Leu Thr Val Thr Phe Asn Pro Ala
 20 25 30
 Pro Asp Asn His Gly Tyr Lys Ile Gln Arg Thr Asp Leu Glu Gly Gln
 35 40 45
 Pro Ile Ile Asp Ala Val Ala Asp Asn Val Gly Glu Thr Thr Arg Gly
 50 55 60
 Thr Val Leu Ser Lys Asn Gly Val Lys Val Ser Thr Gly Glu His Gly
 65 70 75 80
 Met Ala Ala Leu Tyr Ala Leu Gly Ile Asp Asn Cys Leu Ile Gln Val
 85 90 95
 Asn Gly Pro Glu Phe Pro Ile Leu Asp Gly Ser Ala Gln Tyr Tyr Val
 100 105 110
 Gln Glu Ile Glu Lys Val Gly Ile Glu Glu Gln Asn Ala Val Lys Asp
 115 120 125
 Phe Tyr Ile Ile Lys Ser Lys Ile Glu Phe Arg Asp Glu Glu Thr Gly
 130 135 140
 Ser Ser Ile Ile Val Leu Pro Asp Glu Asn Phe Ser Leu Asn Val Leu
 145 150 155 160
 Val Ser Tyr Asp Ser Thr Ile Ile Pro Asn Gln Phe Ala Thr Leu Glu
 165 170 175

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Asp Met Lys Lys Phe Lys Asp Glu Ile Ala Pro Ser Arg Thr Phe Val
      180      185      190
Phe Val Arg Glu Ile Glu Pro Leu Leu Ser Ala Gly Leu Ile Lys Gly
      195      200      205
Gly Asp Leu Asp Asn Ala Ile Val Ile Tyr Glu Arg Glu Met Ser Gln
      210      215      220
Glu Asn Tyr Asp Lys Leu Ala Asp Val Met Arg Val Pro His Met Asp
      225      230      235      240
Ala Lys Leu Leu Gly Tyr Ile Asn His Lys Pro Leu Val Trp Pro Asn
      245      250      255
Glu Cys Ala Arg His Lys Leu Leu Asp Val Ile Gly Asp Leu Ala Leu
      260      265      270
Ile Gly Lys Pro Ile Lys Gly Arg Ile Ile Ala Thr Arg Pro Gly His
      275      280      285
Thr Ile Asn Asn Lys Phe Ala Arg Gln Met Arg Lys Glu Ile Arg Leu
      290      295      300
His Glu Ile Gln Ala Pro Thr Tyr Asp Cys Asn Arg Ala Pro Ile Met
      305      310      315      320
Asp Val Asn Arg Ile Arg Glu Leu Leu Pro His Arg Tyr Pro Phe Gln
      325      330      335
Leu Val Asp Lys Val Ile Glu Ile Gly Ala Asn Tyr Ile Val Gly Val
      340      345      350
Lys Asn Val Thr Ser Asn Glu Pro Phe Phe Gln Gly His Phe Pro Gln
      355      360      365
Glu Pro Val Met Pro Gly Val Leu Gln Ile Glu Ala Met Ala Gln Ile
      370      375      380
Gly Gly Leu Leu Val Leu Asn Ser Val Asp Glu Pro Glu Arg Tyr Ser
      385      390      395      400
Thr Tyr Phe Met Lys Ile Asp Gly Val Lys Phe Arg Gln Lys Val Val
      405      410      415
Pro Gly Asp Thr Leu Ile Phe Arg Val Glu Leu Leu Ala Pro Ile Arg
      420      425      430
Arg Gly Ile Ser Thr Met Lys Gly Tyr Ala Phe Val Gly Glu Lys Val
      435      440      445
Val Cys Glu Cys Glu Phe Met Ala Gln Ile Val Lys Asn Lys
      450      455      460

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<210> 9466

<211> 417

<212> PRT

<213> B.fragilis

<400> 9466

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Ile Leu Met Asn Ile Arg Leu Thr Ser Leu Phe Val Ser Leu Phe Leu
1      5      10      15
Ser Val Pro Val Trp Ala Gly Gly His Lys Asn Leu Pro Ala Lys Gly
      20      25      30
Asp Leu His Ile Pro Val Phe Glu Asn Val Asn Val Arg Phe Ser Pro
      35      40      45
Asp Thr Tyr Pro Asp Asn Tyr Asn Glu Ala Asp Gly Thr Gly Val Tyr
      50      55      60
His Leu Val Asn Gly Arg Ile Ile Leu Lys Lys Ile Thr Leu Pro Glu
      65      70      75      80
Tyr Lys Arg Asn Val Ser Val Ser Leu Lys Val Thr Leu Ala Ser Asn
      85      90      95
Gly Asp Arg Trp Asp Lys Ser Gly Ser Cys Phe Val Leu Pro Lys Ser
      100      105      110
Ser Ala Ile Asn Leu Leu Thr Ile Ala Arg Asp Gly Met Lys Phe Pro
      115      120      125

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Ser Val Asp Ser Leu Lys Leu Glu Lys Met Val Gly Ile Val Pro Gly
130          135          140
Lys Asp Tyr Leu Pro Thr Val Glu Leu Met Arg Phe Met Thr Pro Phe
145          150          155          160
Gly Val Gly His Tyr Ser Asn Asn Asn Asp Ser Leu Ser Ser Lys Arg
          165          170          175
Arg Pro Val Tyr Ile Pro Lys Trp Glu Ser Asn Val Thr Trp Gln Gln
          180          185          190
Asp Ile Thr Asp Leu Tyr Pro Leu Leu Glu Gly Glu Ala Tyr Val Gly
          195          200          205
Ile Tyr Ile Asp Thr Trp Thr Ser Glu Gly Tyr Leu Val Asn Ala Asp
210          215          220
Ile Asp Val Lys Glu Ser Arg Leu Ala Cys Asp Val Leu Pro Lys Arg
225          230          235          240
His Val Glu Pro Leu Met Asn Thr Val Tyr Tyr Met Gly Gln Ser Tyr
          245          250          255
Pro Asp Ile Phe Ala Arg Arg Asp Val Ser Thr Asp Phe Thr Val Pro
          260          265          270
Lys Gly Ala Lys Asn Ile Arg Leu Lys Tyr Ile Val Thr Gly His Gly
275          280          285
Gly His Ser Gly Gly Asp Glu Phe Val Gln Lys Arg Asn Ile Ile Ser
290          295          300
Val Asp Gly Lys Glu Val Leu Asn Phe Ile Pro Trp Arg Asp Asp Cys
305          310          315          320
Ala Ser Phe Arg Arg Phe Asn Pro Ala Thr Gly Val Trp Leu Ile Lys
          325          330          335
Arg Leu Ala Ser Tyr Ile Gly Glu Lys Gly Tyr Thr Glu Lys Glu Val
          340          345          350
Glu Glu Pro Leu Ala Ser Ser Asp Leu Ser Arg Ser Asn Trp Cys Pro
          355          360          365
Gly Ser Asp Val Val Pro Glu Glu Ala Val Ile Gly Thr Leu Ala Pro
370          375          380
Gly Lys His Thr Phe Thr Val Ser Ile Pro Glu Ala Gln Ala Val Asp
385          390          395          400
Gly Asn Lys Leu Asn His Trp Leu Val Ser Ala Tyr Leu Val Trp Glu
          405          410          415
Glu

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<210> 9467

<211> 248

<212> PRT

<213> B.fragilis

<400> 9467

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Val Lys Met Asn Lys Gln Ser Leu Phe Glu Asn Ile Lys Arg Lys Lys
1          5          10          15
Ser Phe Leu Cys Val Gly Leu Asp Thr Asp Ile Lys Lys Ile Pro Asp
          20          25          30
His Leu Leu Asp Asp Pro Asp Pro Ile Phe Ala Phe Asn Lys Ala Ile
          35          40          45
Val Asp Ala Thr Ala Asp Tyr Cys Ile Ala Tyr Lys Pro Asn Leu Ala
50          55          60
Phe Tyr Glu Ser Met Gly Val Lys Gly Trp Ile Ala Phe Glu Lys Thr
65          70          75          80
Val Asn Tyr Ile Lys Glu Asn Tyr Pro Asp Gln Phe Ile Ile Ala Asp
          85          90          95
Ala Lys Arg Gly Asp Ile Gly Asn Thr Ser Ala Met Tyr Ala Arg Thr
100          105          110

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Phe Phe Glu Glu Leu Asp Ile Asp Ser Val Thr Val Ala Pro Tyr Met
 115 120 125
 Gly Glu Asp Ser Val Thr Pro Phe Leu Ser Tyr Glu Gly Lys Trp Val
 130 135 140
 Ile Leu Leu Ala Leu Thr Ser Asn Lys Gly Ser His Asp Phe Gln Leu
 145 150 155 160
 Thr Glu Asp Ala Asn Gly Glu Arg Leu Phe Glu Lys Val Leu Lys Lys
 165 170 175
 Ser Gln Glu Trp Ala Asn Asp Glu Gln Met Met Tyr Val Val Gly Ala
 180 185 190
 Thr Gln Gly Arg Ala Phe Glu Asp Ile Arg Lys Ile Val Pro Asn His
 195 200 205
 Phe Leu Leu Val Pro Gly Ile Gly Ala Gln Gly Gly Ser Ser Arg Arg
 210 215 220
 Ser Met Gln Ile Trp Tyr Glu Gln His Leu Trp Thr Tyr Cys Glu Phe
 225 230 235 240
 Leu Ser Arg Asn Tyr Leu Cys Arg
 245

<210> 9468

<211> 251

<212> PRT

<213> B.fragilis

<400> 9468

Ile Lys Ser Asn Lys Arg Met Asn Tyr Pro Gln Glu Lys Ile Lys Pro
 1 5 10 15
 Tyr Ser Asn Asp Gly Lys Lys Ser Glu Gln Val Glu Gln Met Phe Asp
 20 25 30
 Asn Ile Ala Pro Ala Tyr Asp Gln Leu Asn His Thr Leu Ser Leu Gly
 35 40 45
 Ile Asp Arg Ser Trp Arg Arg Lys Ala Ile Asn Trp Leu Lys Pro Phe
 50 55 60
 Arg Pro Gln Gln Ile Met Asp Val Ala Thr Gly Thr Gly Asp Phe Ala
 65 70 75 80
 Ile Leu Ala Cys His Glu Leu Gln Pro Glu Gln Leu Ile Gly Thr Asp
 85 90 95
 Ile Ser Glu Gly Met Met Asn Val Gly Arg Glu Lys Val Lys Lys Glu
 100 105 110
 Gly Leu Ser Glu Lys Ile Ser Phe Ala Arg Glu Asp Cys Thr Ser Leu
 115 120 125
 Ser Phe Ala Asp Asn Arg Phe Asp Ala Ile Thr Val Ala Phe Gly Ile
 130 135 140
 Arg Asn Phe Glu Asp Leu Asp Lys Gly Leu Ser Glu Met Tyr Arg Val
 145 150 155 160
 Leu Lys Thr Gly Gly His Leu Val Ile Leu Glu Leu Thr Thr Pro Asp
 165 170 175
 Arg Phe Pro Met Lys Gln Met Phe Thr Ile Tyr Ser Lys Ile Val Ile
 180 185 190
 Pro Thr Leu Gly Lys Leu Leu Ser Lys Asp Asn Ser Ala Tyr Ser Tyr
 195 200 205
 Leu Pro Gln Thr Ile Lys Ala Phe Pro Gln Gly Glu Val Met Lys Asn
 210 215 220
 Val Ile Ser Arg Val Gly Phe Ser Gln Val Gln Phe Arg Arg Leu Thr
 225 230 235 240
 Phe Gly Ile Cys Thr Leu Tyr Thr Ala Thr Lys
 245 250

<210> 9469

<211> 395
 <212> PRT
 <213> B.fragilis

<400> 9469

Ser	His	Ala	Asn	Met	Ile	Leu	Val	Gln	Ile	Leu	Val	Lys	Asp	Leu	Phe
1			5					10					15		
Asn	Met	Ile	Lys	Lys	Ile	Phe	Phe	Ser	Ser	Phe	Leu	Leu	Ile	Ile	Met
		20						25					30		
Phe	Cys	Gly	Cys	Met	Thr	Gln	Asn	Glu	Ile	Thr	Gly	Ser	Val	Ala	Lys
		35					40					45			
Leu	Glu	Thr	Val	Glu	Lys	Val	Val	Asp	Asp	Thr	Leu	Phe	Leu	Lys	Asn
	50					55					60				
Pro	Gln	Val	Phe	Cys	Leu	Glu	Thr	Lys	Asp	Asn	Ala	Leu	Ile	Lys	Arg
65				70					75					80	
Ile	Asn	Arg	Val	Ile	Glu	Trp	Lys	Asn	Thr	Tyr	Tyr	Ile	Leu	Asp	Lys
			85					90						95	
Ser	Met	Lys	Gln	Val	Leu	Ala	Phe	Asn	Asp	Lys	Gly	Arg	His	Leu	Phe
		100						105					110		
Thr	Ile	His	Arg	Val	Gly	Ile	Gly	Lys	Gly	Glu	Tyr	Gly	Ser	Ile	Leu
	115					120						125			
Asp	Ile	Ala	Ile	Asp	Arg	Gln	Asn	Glu	Asn	Leu	Val	Phe	Leu	Ala	Asp
	130					135					140				
Pro	Thr	Ser	Leu	Ile	Tyr	Tyr	Asp	Leu	Gln	Gly	Asn	Phe	Ile	Lys	Thr
145				150					155					160	
Thr	Lys	Leu	Pro	Gly	Tyr	Tyr	His	Ser	Ile	Ala	Ile	Asp	Asn	Gly	Met
			165					170						175	
Ile	Tyr	Leu	Glu	Asn	Glu	Thr	Tyr	Ile	Asn	Asn	Gln	Leu	Ser	Thr	Ser
		180				185						190			
Ser	Ile	Thr	Val	Ile	Ala	Pro	Asp	Asn	Gln	Lys	Thr	Glu	Leu	Leu	Lys
	195					200						205			
Pro	Leu	Arg	Glu	Ile	Ala	Pro	Tyr	Cys	Phe	Ile	Gly	Gly	Ser	Arg	Leu
	210					215					220				
Asn	Gly	Thr	Thr	Pro	Ile	Val	Phe	Thr	Arg	Lys	Phe	Asp	Asn	Thr	Ile
225				230						235				240	
Tyr	Gln	Leu	Glu	Asp	Gly	Lys	Ile	Thr	Pro	Tyr	Tyr	Ser	Phe	Asp	Phe
			245					250						255	
Met	Asn	Glu	Asn	Phe	Pro	Glu	Ala	Ala	Lys	Asp	Lys	Glu	Tyr	Thr	Cys
		260						265					270		
Arg	Glu	Leu	Asn	Lys	Phe	Thr	Trp	Asp	Arg	Tyr	Val	Tyr	Leu	Met	Ala
	275					280						285			
Asn	Val	Ala	Asn	Ala	Pro	Gln	Tyr	Leu	Met	Phe	Cys	Thr	Asn	Leu	Phe
	290					295					300				
Gly	Val	Tyr	Val	Phe	Asp	Lys	Met	Gln	Asn	Lys	Leu	Leu	Lys	Tyr	Asn
305				310						315				320	
Lys	Ile	Arg	Asn	Thr	Gly	Tyr	Gln	Thr	Asp	Leu	His	Gln	Tyr	Ile	Pro
			325					330						335	
Val	Glu	Gly	Ala	Asn	Asn	Arg	Val	Phe	Phe	Thr	Val	Tyr	Pro	Thr	Thr
		340						345					350		
Leu	Phe	Ser	Leu	Lys	Ala	Ile	Val	Asp	Asn	His	Pro	Ser	Phe	Lys	Asp
	355					360						365			
Lys	Met	Ser	Asp	Lys	Leu	Tyr	Lys	Leu	Thr	Glu	Ser	Leu	Asp	Ser	Asp
	370					375					380				
Ser	Asn	Pro	Val	Ile	Phe	Ser	Tyr	Gln	Ile	Lys					
385				390						395					

<210> 9470
 <211> 76
 <212> PRT

<213> B.fragilis

<400> 9470

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Arg His Lys Lys Gly Val Val Asn Lys Val Asn Arg Val Trp Val Val
1          5          10          15
Gly Asn Gly Ala Met Leu Pro Tyr Lys Val Tyr Asn Lys Asn Tyr Trp
          20          25          30
Ser Glu Val Pro Gly Asn Leu Tyr Ile Asp Ile Pro Glu Arg Val Gln
          35          40          45
Asp Glu Gln Ile Thr Val Ile Ala Val Leu Leu Asp Gly Pro Ile Lys
          50          55          60
Leu Tyr Arg Gly Val Gly Gln Val Ile Glu Ser Asn
65          70          75

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<210> 9471

<211> 601

<212> PRT

<213> B.fragilis

<400> 9471

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Thr Glu Ile Glu Lys Thr Met Lys Thr Ile Leu Leu Phe Ala Leu Ser
1          5          10          15
Leu Leu Leu Ser Leu Ser Val Ser Asp Val Cys Ala Gln Glu Arg Ile
          20          25          30
Tyr Asp Ile Ser Gln Phe Gly Leu Lys Ala Asn Ser Lys Lys Asn Ala
          35          40          45
Ser Pro Val Val Arg Lys Ala Ile Ala Lys Ile Lys Ala Glu Cys Arg
          50          55          60
Asp Gly Glu Lys Val Ile Leu Arg Phe Pro Ala Gly Arg Tyr Asn Phe
65          70          75          80
His Glu Ala Gly Ser Thr Val Arg Glu Tyr Tyr Ile Ser Asn His Asp
          85          90          95
Gln Asp Asn Pro Lys Lys Val Gly Ile Ala Leu Glu Asp Met Lys Asn
          100          105          110
Leu Thr Ile Asp Gly Gln Gly Ser Glu Phe Val Phe Tyr Gly Arg Met
          115          120          125
Ile Pro Val Ser Leu Leu Arg Ser Glu Asn Cys Val Leu Lys Asn Phe
          130          135          140
Ser Ile Asp Phe Glu Gln Pro His Ile Ala Gln Val Gln Val Val Glu
145          150          155          160
Asn Asp Pro Glu Lys Gly Ile Thr Phe Glu Pro Ala Pro Trp Val Asp
          165          170          175
Tyr Arg Ile Ser Lys Asp Ser Val Phe Glu Gly Leu Gly Glu Gly Trp
          180          185          190
Val Met Arg Tyr Ser Trp Gly Ile Ala Phe Asp Gly Lys Thr Lys His
          195          200          205
Val Val Tyr Asn Thr Ser Asp Ile Gly Cys Pro Thr Lys Gly Ala Phe
210          215          220
Glu Val Ala Pro Arg Arg Ile Cys Ser Pro Lys Trp Lys Asp Ala Arg
225          230          235          240
Leu Val Pro Gly Thr Val Val Ala Met Arg Gly Trp Gly Arg Pro Thr
          245          250          255
Pro Gly Ile Phe Met Ser His Asp Val Asn Thr Ser Leu Leu Asp Val
          260          265          270
Lys Val His Tyr Ala Glu Gly Met Gly Leu Leu Ala Gln Leu Cys Glu
          275          280          285
Asp Ile Thr Leu Asp Gly Phe Gly Val Cys Leu Lys Gly Asp Asn Asp
290          295          300
Pro Arg Tyr Phe Thr Thr Gln Ala Asp Ala Thr His Phe Ser Gly Cys

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305          310          315          320
Lys Gly Lys Ile Val Ser Lys Asn Gly Leu Tyr Glu Gly Met Met Asp
          325          330          335
Asp Ala Ile Asn Val His Gly Thr Tyr Leu Lys Val Ile Lys Arg Val
          340          345          350
Asp Asp His Thr Leu Ile Gly Arg Tyr Met His Asp Gln Ser Trp Gly
          355          360          365
Phe Glu Trp Gly Arg Pro Gly Asp Asp Val Gln Phe Val Arg Ser Glu
          370          375          380
Thr Met Glu Leu Ile Gly Lys Gln Asn Gln Ile Thr Ala Ile Arg Pro
385          390          395          400
Tyr Asp Lys Gly Glu Ile Gln Gly Ala Arg Glu Phe Ser Ile Thr Phe
          405          410          415
Lys Glu Ala Ile Asp Pro Ala Ile Asn Glu Lys Ser Gly Phe Gly Ile
          420          425          430
Glu Asn Leu Thr Trp Thr Pro Glu Val Leu Phe Ala Gly Asn Thr Ile
          435          440          445
Arg Asn Asn Arg Ala Arg Gly Thr Leu Phe Ser Thr Pro Lys Lys Thr
          450          455          460
Val Val Glu Asp Asn Leu Phe Asp His Thr Ser Gly Thr Ala Ile Leu
465          470          475          480
Leu Cys Gly Asp Cys Asn Gly Trp Phe Glu Thr Gly Ala Cys Arg Asp
          485          490          495
Val Thr Ile Arg Arg Asn Arg Phe Ile Asn Ala Leu Thr Asn Met Phe
          500          505          510
Gln Phe Thr Asn Ala Val Ile Ser Ile Tyr Pro Glu Ile Pro Asn Leu
          515          520          525
Lys Asp Gln Gln Lys Tyr Phe His Gly Gly Lys Asp Gly Gly Ile Val
          530          535          540
Ile Glu Asp Asn Glu Phe Asp Thr Phe Asp Ala Pro Ile Leu Tyr Ala
545          550          555          560
Lys Ser Val Asp Gly Leu Ile Phe Arg Asn Asn Val Ile Lys Thr Asn
          565          570          575
Thr Glu Phe Lys Pro Phe His Trp Asn Lys Asp Arg Phe Leu Leu Glu
          580          585          590
Arg Val Thr Asn Val Lys Ile Ser Glu
          595          600

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<210> 9472

<211> 226

<212> PRT

<213> B.fragilis

<400> 9472

```

Glu Arg Lys Glu Thr Arg Leu Ser Asp Met Lys Lys Ser Thr Leu Thr
1          5          10          15
Leu Leu Leu Phe Ile Leu Gly Ile Ser Ser Ser Phe Ser Val Gly Ala
          20          25          30
Gln Glu Ala Lys Thr Val Phe Val Asn Ile Pro Asp Ser Leu Cys Pro
          35          40          45
Leu Leu Ser Ser Val Asn Arg Ala Asp Cys Ile Asp Phe Ile Glu Ser
          50          55          60
Lys Met Lys Ala Gln Val Thr Asn Arg Phe Gly Gly Lys Ser Glu Met
65          70          75          80
Thr Glu Leu Ser Pro Asp Tyr Val Ser Leu Gln Met Ser Asp Ala Ser
          85          90          95
Asn Trp Gln Met Lys Leu Leu Pro Leu Asn Asp Thr Thr Lys Val Val
          100          105          110
Cys Ala Val Ser Thr Val Cys Ala Pro Ala Cys Asp Ser His Ile Arg

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      115              120              125
Phe Tyr Thr Thr Asp Trp Lys Glu Leu Pro Ala Thr Asp Phe Leu Pro
 130              135              140
Ser Val Pro Gln Met Asn Asp Phe Phe Thr Ser Ser Asp Ser Thr Asp
145              150              155              160
Tyr Asp Phe Ile Asp Ala Arg Leu Gln Ala Asp Met Ala Leu Met Gln
      165              170              175
Ala Glu Leu Ser Lys Glu Asn Gly Thr Leu Thr Phe Thr Leu Thr Thr
      180              185              190
Pro Glu Tyr Met Glu Lys Glu Thr Ala Glu Lys Leu Lys Pro Phe Leu
      195              200              205
Arg Arg Ser Ile Val Tyr Thr Trp Lys Asp Gly Lys Phe Ile Pro Asp
      210              215              220
Thr Leu
225

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<210> 9473

<211> 703

<212> PRT

<213> B.fragilis

<400> 9473

```

Arg Thr Val Trp Thr Leu Lys Pro Tyr Leu Phe Arg Val Gly Gly Leu
 1              5              10              15
His Phe Asn His Tyr Val Phe Met Lys Arg Leu Leu Ser Val Phe Leu
      20              25              30
Phe Leu Phe Cys Cys Val Ile Ala Ala Asp Ala Gln Asp Asp Ala Ala
      35              40              45
Gln Tyr Asp Ser Ile Met Asn Leu Met Lys Asn Lys Lys Ile Pro Leu
      50              55              60
Met Glu Arg Tyr Tyr Met Thr Gly Asp Ile Glu Tyr Leu Ser Arg Glu
      65              70              75              80
His Gln Ile Ala Val Leu Lys Gln Leu Ile Pro Glu Ala Lys Glu Val
      85              90              95
Glu Asp Lys Ala Val Ile Thr Arg Leu Tyr Ser Ile Val Ala Met Phe
      100              105              110
Glu Asn Gln Leu Gly His Met Thr Glu Ala Lys Asn Tyr Leu Asp Ser
      115              120              125
Ala Phe Met Asn Lys Gly Lys Phe Glu Asn Asn Asn Ile Ser Gly Met
      130              135              140
Met His Tyr Ile Ala Gly Ile Tyr Tyr Ser Asp Lys Asn Leu Met Glu
145              150              155              160
Gln Ala His Glu Asn Tyr Tyr Gln Ala Ala Glu Tyr Phe Asn Arg Asn
      165              170              175
Glu Met Lys Pro Ala Ile Leu Thr Glu Ile Tyr Tyr Asp Leu Ser Ile
      180              185              190
Ile Tyr Ser Met Trp Gln Asp Asp Glu Gly Leu His Glu Leu Ser Glu
      195              200              205
Ala Met Lys Asp Leu Pro Val Asp Phe Pro Phe Gln Gln Ile Leu Lys
      210              215              220
Trp Thr Ile Lys Val Lys Tyr Phe Tyr Ala Leu Tyr Gln Asn Glu His
225              230              235              240
Arg Val Asp Leu Leu Asp Ser Val Thr Lys Tyr Asn Gln Glu Ala Phe
      245              250              255
Lys Val Tyr Thr Ser Thr Glu Asn Pro Tyr Asp Val Gly Tyr Val Ile
      260              265              270
Ser Asp Asn Tyr Leu His Gln Ala Ile Val Tyr Ser Glu Ala Gly Lys
      275              280              285
Ile Lys Glu Ala Glu Gln Cys Phe Glu Thr Gly Lys Lys Leu Met Asn

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290	295	300
Pro Lys Lys Ile Asp	Ala Asn Val Ser Val	Ser Tyr Val Ser Gly Val
305	310	315
Ile Ala Tyr Tyr Gln	Ala Asp Tyr Glu Leu	Ala Glu Gln His Leu Gln
325	330	335
Asp Gly Leu Arg Glu	Leu Lys Arg Met Asp	Glu Glu Gln Glu Val Asp
340	345	350
Tyr Tyr His Ala Leu	Ile Glu Phe Tyr Thr	Leu Leu Ala Lys Val Tyr
355	360	365
Glu Lys Gln Glu Leu	Tyr Asn Lys Ala Leu	Glu Ala Ala Arg Asn Ser
370	375	380
Leu Lys Tyr Glu Thr	Arg Leu Phe Asp Lys	Asn Ser Asn Lys Thr Ile
385	390	395
Gln Lys Leu Arg Thr	Gln Tyr Asn Leu Asn	Glu Lys Glu Arg Val Val
405	410	415
Glu Gln Leu Ser Ala	Ile Asn Glu Lys Asn	Arg Arg Ile Asn Ile Leu
420	425	430
Ser Ala Ile Leu Ile	Val Leu Ala Leu Val	Thr Ile Phe Leu Leu Leu
435	440	445
Lys Arg Tyr Arg Ser	Arg Gln Arg Ile His	Glu Gly Met Leu Gln Ile
450	455	460
Ala Lys Leu Lys Gln	Gln Glu Ala Glu Leu	Leu Val Lys Leu Gln Lys
465	470	475
Thr Lys Leu Glu Glu	Arg Glu Arg Glu Phe	Gln Ser Leu Val His Glu
485	490	495
Ala Gln Gln Arg Lys	Val Gln Tyr Tyr Leu	Glu Gly Leu Glu Val Glu
500	505	510
Arg Lys Arg Leu Ala	Lys Glu Leu His Asp	Asn Val Ser Asn Glu Leu
515	520	525
Leu Ala Ile Lys Met	Lys Ile Thr Asp Gly	Thr Ser Ser Cys Glu Glu
530	535	540
Ile Met Asp Thr Leu	Gln Thr Leu Gln Ala	Glu Val Arg Gly Ile Ser
545	550	555
His Asp Leu Met Pro	Pro Ile Phe Lys Tyr	Ala Ser Leu Ser Glu Ile
565	570	575
Leu Gln Asp Tyr Val	Tyr Gln His Asn Gln	Pro Gly Gln Thr Glu Leu
580	585	590
Glu Leu Leu Glu Pro	Glu Asp Asn Phe Asp	Asn Leu Ser Gln Lys
595	600	605
Val Ser Leu Glu Ile	Tyr Arg Ile Val Gln	Glu Ala Val Gly Asn Ser
610	615	620
Leu Lys His Ala Gln	Ala Thr Leu Val Lys	Ile Ile Leu Val Arg Glu
625	630	635
Asp Asn Lys Val Lys	Leu Thr Val Ser Asp	Asn Gly Arg Gly Phe Glu
645	650	655
Gln Gln Thr Gly Lys	Thr Gly Ile Gly Leu	Thr Ile Ile Lys Glu Arg
660	665	670
Val Glu Asn Leu Arg	Gly Thr Leu Thr Leu	Asn Ser Ala Pro Gly Lys
675	680	685
Gly Thr Glu Leu Ile	Val Glu Ile Asp Leu	Glu Asn Leu Glu Lys
690	695	700

<210> 9474

<211> 80

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (12),(33),(46),(47)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9474

```

Trp Arg Ser Arg Arg Met His Asp Ala Arg Thr Xaa Ser Ser His Ser
1              5              10              15
His Gly Tyr Ser Arg Phe Leu Leu Thr Ser Phe Ile Thr Ala Tyr Thr
              20              25              30
Xaa Thr Ser Leu Ala Arg Arg Glu His Cys Pro His Leu Xaa Xaa Arg
              35              40              45
Val Met Ser Ser Arg Leu Phe Ser His Cys Asn Lys His Val Ala Gly
              50              55              60
Thr Arg Asp Asp Thr Leu Gln Leu Ile Ser Pro Leu Tyr Ser Lys Ser
65              70              75              80

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<210> 9475

<211> 64

<212> PRT

<213> B.fragilis

<400> 9475

```

Ser Asn Ile Ser Phe Phe Thr Ser Arg Met Asp Ser Ser Gly Glu Ser
1              5              10              15
Arg Asp Thr Ser Phe Phe Val Asn Tyr Lys Arg Gly Leu Thr Arg Pro
              20              25              30
Lys Thr Glu Leu Asp Ser Met Ser Lys Arg Lys Leu Thr Thr Lys Phe
              35              40              45
Glu Glu Glu Pro Pro Lys Asn Arg Ser Phe Ile Phe His Pro Leu Phe
              50              55              60

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<210> 9476

<211> 318

<212> PRT

<213> B.fragilis

<400> 9476

```

Asn Ile Leu Arg Arg Tyr Ser Asn Lys Pro Ile Ala Ser Asn Leu Lys
1              5              10              15
Asn Ser Ile Met Trp Leu Leu Leu Ala Phe Leu Ser Ala Thr Leu Leu
              20              25              30
Gly Phe Tyr Asp Val Phe Lys Lys Lys Ala Leu Lys Asp Asn Ala Val
              35              40              45
Leu Pro Val Leu Phe Phe Asn Thr Leu Phe Ser Ser Leu Ile Phe Leu
              50              55              60
Pro Phe Ile Leu Leu Ser Ala Phe Ala Pro Gly Val Leu Glu Gly Thr
65              70              75              80
Met Leu Asp Val Pro Val Val Gly Trp Glu Val His Lys Phe Ile Ile
              85              90              95
Ile Lys Ser Phe Ile Val Leu Ser Ser Trp Ile Leu Gly Tyr Phe Gly
              100              105              110
Met Lys His Leu Pro Ile Thr Ile Val Gly Pro Ile Asn Ala Thr Arg
              115              120              125
Pro Val Met Val Leu Val Gly Ala Met Leu Val Phe Gly Glu Arg Leu
              130              135              140
Asn Leu Tyr Gln Trp Ile Gly Val Met Leu Ala Ile Ile Ser Phe Phe
145              150              155              160
Met Leu Ser Arg Ser Gly Lys Lys Glu Gly Ile Asp Phe Lys His Asn
              165              170              175
Lys Trp Ile Leu Phe Ile Ile Leu Ala Ala Val Ala Gly Ala Val Ser

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<210> 9477
<211> 318
<212> PRT
<213> B.fragilis
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<400> 9477															
Leu 1	Tyr	Lys	Ser	Met 5	Lys	Ala	Leu	Thr	Lys 10	Thr	Asp	Phe	Asn 15	Phe	Pro
Gly	Gln	Lys	Ser	Val	Tyr	His	Gly	Lys 25	Val	Arg	Asp	Val	Tyr 30	Asn	Ile
Asn	Gly	Glu	Gln	Leu	Val	Met	Val	Ala 40	Thr	Asp	Arg	Ile	Ser 45	Ala	Phe
Asp	Val	Val	Leu	Pro	Glu	Gly 55	Ile	Pro	Tyr	Lys	Gly 60	Gln	Met	Leu	Asn
Gln 65	Ile	Ala	Ala	Lys	Phe 70	Leu	Asp	Ala	Thr	Thr	Asp	Ile	Cys	Pro	Asn 80
Trp	Lys	Leu	Ala	Thr 85	Pro	Asp	Pro	Met	Val 90	Thr	Val	Gly	Val	Leu	Cys
Glu	Gly	Phe	Pro	Val	Glu	Met	Ile	Val 105	Arg	Gly	Tyr	Leu	Cys 110	Gly	Ser
Ala	Trp	Arg	Ala	Tyr	Lys	Asn	Gly	Val 120	Arg	Glu	Ile	Cys	Gly 125	Val	Lys
Leu	Pro	Glu	Gly	Met	Lys	Glu	Asn	Gln 135	Lys	Phe	Pro	Glu	Pro	Ile	Val
Thr 145	Pro	Thr	Thr	Lys	Ala 150	Glu	Met	Gly	Leu	His	Asp	Glu	Asp	Ile	Ser 160
Lys	Glu	Glu	Ile	Leu	Ala 165	Gln	Gly	Leu	Ala 170	Thr	Pro	Glu	Glu	Tyr	Ala
Ile	Leu	Glu	Lys	Tyr 180	Thr	Leu	Ala	Leu 185	Phe	Lys	Arg	Gly	Thr 190	Glu	Ile
Ala	Ala	Glu	Arg	Gly	Leu	Ile	Leu	Val 200	Asp	Thr	Lys	Tyr	Glu 205	Phe	Gly
Lys	His	Asn	Gly	Thr	Ile	Tyr	Leu	Met 215	Asp	Glu	Ile	His	Thr 220	Pro	Asp
Ser 225	Ser	Arg	Tyr	Phe	Tyr	Ala	Glu	Gly	Tyr	Gln	Glu	Arg	Phe	Glu	Lys 240
Gly	Glu	Ala	Gln	Lys	Gln	Leu	Ser	Lys 250	Glu	Phe	Val	Arg	Glu	Trp	Leu
Met	Glu	Asn	Gly	Phe 260	Gln	Gly	Lys	Glu 265	Gly	Gln	Lys	Val	Pro 270	Glu	Met
Thr	Pro	Ala	Ile	Val	Glu	Ser	Ile	Ser	Glu	Arg	Tyr	Ile	Glu	Leu	Phe

275		280		285
Glu Asn Ile Thr Gly Glu Lys Phe Val Lys Glu Asp Thr Ser Asn Ile				
290		295		300
Ala Glu Arg Ile Glu Lys Asn Val Met Ala Phe Leu Ala Lys				
305		310		315

<210> 9478

<211> 399

<212> PRT

<213> B.fragilis

<400> 9478

Arg Phe Gln Ser Glu Ile Arg Leu Cys Lys Asn Thr Tyr Lys Cys Met				
1	5	10	15	
Lys Arg Ile Leu Leu Phe Leu Leu Ala Cys Cys Pro Met Leu Leu Cys				
	20	25	30	
Ala Gln Glu Asp Asn Ser Lys Tyr Leu Ala Gly Ala Val Pro Val Val				
	35	40	45	
Asn Gly Lys Val Ile Phe Ala Glu Val Ile Gln Ala Ser Asp Met Ser				
	50	55	60	
Lys Arg Gln Ile Tyr Asp Ala Leu Leu Lys Trp Ala Glu Lys Arg Phe				
	65	70	75	80
Thr Pro Ser Lys Gly Gln Lys Gly Arg Val Ala Tyr Phe Asp Gly Lys				
	85	90	95	
Lys Gly Gln Ile Ala Cys Leu Gly Glu Glu Tyr Leu Gln Leu Ser Ala				
	100	105	110	
Thr Asn Ser Phe Phe Leu Asp Arg Ala Thr Ile Lys Tyr Arg Leu Val				
	115	120	125	
Ile Asn Cys Leu Asp Gly Ser Cys Lys Met Glu Met Tyr Asn Ile Ser				
	130	135	140	
Tyr Phe His Gly Asp Asp Thr Glu Met Glu Ala Glu Asp Trp Ile Thr				
	145	150	155	160
Asp Glu Thr Gly Leu Asn Lys Ala Lys Thr Lys Val Val Ala Lys Tyr				
	165	170	175	
Gly Lys Leu Arg Ile Lys Thr Ile Asp Leu Phe Asp Asp Leu Thr Glu				
	180	185	190	
Gln Val Thr Lys Thr Leu Gly Gly Ala Lys Ser Glu Val Pro Leu Leu				
	195	200	205	
Ala Lys Glu Pro Lys Val Thr Pro Glu Val Phe Asp Arg Glu Phe Pro				
	210	215	220	
Lys Ala Val Glu Gln Gly Ala Met Ala Gly Tyr Lys His Ile Pro Ala				
	225	230	235	240
Asp Lys Ile Pro Gly Asn Ile Ile Lys Met Leu Ser Glu Asp Trp Met				
	245	250	255	
Leu Ile Thr Ala Gly Thr Glu Asp Lys Tyr Asn Met Met Thr Ala Ser				
	260	265	270	
Trp Gly Gly Leu Gly Tyr Leu Tyr Asn Lys Pro Val Ser Phe Cys Phe				
	275	280	285	
Ile Tyr Pro Thr Arg Tyr Thr Tyr Gln Leu Met Glu Lys Asn Asp Thr				
	290	295	300	
Tyr Thr Ile Ser Phe Tyr Thr Glu Thr Tyr Arg Asp Ala Leu Lys Tyr				
	305	310	315	320
Cys Gly Ser His Ser Gly Glu Asp Val Asp Lys Val Lys Gly Ala Gly				
	325	330	335	
Leu Thr Pro Leu Thr Thr Pro Ser Gly Ser Lys Ala Phe Ser Glu Ala				
	340	345	350	
Trp Met Ile Glu Cys Lys Lys Met Leu Ser Gln Pro Ile Thr Pro				
	355	360	365	
Gly Ala Phe Asp Thr Pro Glu Leu Lys Glu Ala Trp Lys Asp Lys Ser				

370	375	380
Leu His Thr Met Tyr Ile Gly Glu Ile Met Asn Val Trp Val Lys		
385	390	395

<210> 9479
 <211> 79
 <212> PRT
 <213> B.fragilis

<400> 9479
 Lys Gly Cys Gly Ser Gly Gly Lys Arg Asp Ile Glu Ser Gly Arg Leu
 1 5 10 15
 Lys Asn Ile Tyr Cys Gly Val Leu Leu Pro Gln Thr Asn Val Ser Lys
 20 25 30
 Leu Thr Met Glu Asp Lys Pro Ser Ile Leu Gly Arg Lys Asp Gly Lys
 35 40 45
 Lys Arg Glu Asn Ile Asp Leu Lys Glu Leu Tyr Gln Leu Tyr Asn Glu
 50 55 60
 Ile Asp Ser Tyr Ile Ser Gln Arg Tyr Asn Glu Leu Phe Gly Leu
 65 70 75

<210> 9480
 <211> 147
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (46), (79), (94), (101), (119), (122), (135), (136)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9480
 Ala Trp Cys Gly Pro Cys Asp Thr Val Leu Met Cys Ala Met Met Tyr
 1 5 10 15
 Gly Tyr Gly Glu Ala Gln Pro Ala Arg Arg Gly Asp His Val Asp Ala
 20 25 30
 Leu Cys Leu His Arg Leu Ala Val Ile Met His Met Cys Xaa Tyr Ala
 35 40 45
 Phe Glu Pro Leu Ser Cys Asp Glu Cys Ala His Ala Leu His Arg Gln
 50 55 60
 His Arg Leu Leu Leu Cys Leu Ala Val Tyr Met Ala Pro Ala Xaa Ser
 65 70 75 80
 Ser Cys Leu Thr Tyr Val Phe Leu Leu Met Ala Gln Ser Xaa His Ala
 85 90 95
 Arg Arg Thr His Xaa Ile Glu Ser Leu Ser Arg Ile Leu Thr Ile Pro
 100 105 110
 Pro Tyr Leu Val His His Xaa Val His Xaa Tyr Glu Ser Ser Ala Thr
 115 120 125
 Gly Ala Leu Ser Ser Pro Xaa Xaa Ser Cys Asn Val Val Ser Ser Ile
 130 135 140
 Leu Ser Leu
 145

<210> 9481
 <211> 316
 <212> PRT
 <213> B.fragilis

<400> 9481

```

Met Lys Lys Gly Ile Lys Ile Gly Val Ile Thr Leu Leu Leu Leu Leu
1      5      10      15
Thr Gly Cys Thr Ile Gly Gly Ser Phe Phe Met Leu Asn Tyr Ser Leu
20      25      30
Arg Pro Glu Ala Lys Ile Arg Ala Lys Asn Ala Asp Ser Tyr Pro Phe
35      40      45
Ile Tyr Lys Asn Tyr Pro Phe Leu Arg Pro Trp Val Asp Ser Leu Asn
50      55      60
Gln Ala His Ala Leu Arg Asp Thr Phe Val Leu Asn Pro Glu Gly Ile
65      70      75      80
Arg Leu His Ala Tyr Tyr Ile Ala Ala Pro Gln Pro Thr Lys Lys Thr
85      90      95
Ala Val Ile Val His Gly Tyr Thr Asp Asn Ala Ile Arg Met Phe Met
100      105      110
Ile Gly Tyr Leu Tyr Asn His Asp Leu Gln Tyr Asn Val Leu Leu Pro
115      120      125
Asp Leu Gln His Gln Gly Glu Ser Gly Gly Pro Ala Ile Gln Met Gly
130      135      140
Trp Lys Asp Arg Leu Asp Val Met Gln Trp Met His Ile Ala Asn Gln
145      150      155      160
Ile Tyr Gly Asp Ser Thr Gln Met Val Val His Gly Ile Ser Met Gly
165      170      175
Gly Ala Thr Thr Met Met Val Ser Gly Glu Ala Gln Pro Tyr Phe Val
180      185      190
Lys Cys Phe Val Glu Asp Cys Gly Tyr Thr Ser Val Trp Asp Glu Phe
195      200      205
Ser His Glu Leu Lys Ser Ser Phe His Leu Pro Ser Phe Pro Leu Met
210      215      220
Asn Thr Thr Ser Trp Leu Cys Gln Lys Lys Tyr Gly Trp Asn Phe Glu
225      230      235      240
Glu Ala Ser Ser Leu Asn Gln Val Lys Lys Ser His Leu Pro Met Phe
245      250      255
Phe Ile His Gly Asp Lys Asp Thr Tyr Val Pro Thr Trp Met Val Tyr
260      265      270
Pro Leu Tyr Glu Ala Lys Ser Ala Pro Lys Gln Leu Trp Ile Val Pro
275      280      285
Gly Ala Ala His Ala Val Ser Tyr Lys Glu Asn Lys Glu Glu Tyr Thr
290      295      300
Arg Lys Val Lys Glu Phe Thr Asp Arg Tyr Ile His
305      310      315

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<210> 9482

<211> 349

<212> PRT

<213> B.fragilis

<400> 9482

```

Ser Lys Ile Met Glu Phe Ser Ala Lys Gln Ile Ala Ala Phe Ile Gln
1      5      10      15
Gly Glu Ile Ile Gly Asp Glu Asn Ala Thr Val His Thr Phe Ala Lys
20      25      30
Ile Glu Glu Gly Ile Pro Gly Ala Ile Ser Phe Leu Ser Asn Pro Lys
35      40      45
Tyr Thr Pro Tyr Ile Tyr Glu Thr Lys Ala Ser Ile Val Leu Val Asn
50      55      60
Lys Asp Phe Thr Pro Glu Gln Glu Val Lys Ala Thr Leu Ile Lys Val
65      70      75      80
Asp Asn Ala Tyr Glu Ser Leu Ala Lys Leu Leu Asn Leu Tyr Glu Met
85      90      95

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Ser Lys Pro Lys Arg Thr Gly Ile Asp Glu Arg Ala Tyr Val Ala Glu
 100 105 110
 Thr Ala Lys Ile Gly Lys Asp Val Tyr Ile Ala Pro Phe Ala Cys Ile
 115 120 125
 Gly Asp His Ala Glu Val Gly Asp Asn Thr Val Ile His Pro His Ala
 130 135 140
 Thr Val Gly Gly Gly Ala Lys Ile Gly Ser Asn Cys Ile Leu Tyr Ala
 145 150 155 160
 Asn Ser Thr Val Tyr His Asp Cys Arg Val Gly Asn Asn Cys Ile Leu
 165 170 175
 His Ala Gly Cys Val Ile Gly Ala Asp Gly Phe Gly Phe Ala Pro Thr
 180 185 190
 Pro Gln Gly Tyr Glu Lys Ile Pro Gln Ile Gly Ile Val Ile Leu Glu
 195 200 205
 Asp Asn Val Glu Val Gly Ala Asn Thr Cys Ile Asp Arg Ala Thr Met
 210 215 220
 Gly Ala Thr Val Ile His Ser Gly Val Lys Leu Asp Asn Leu Val Gln
 225 230 235 240
 Ile Ala His Asn Asp Glu Ile Gly Ser His Thr Val Met Ala Ala Gln
 245 250 255
 Val Gly Ile Ala Gly Ser Thr Lys Val Gly Glu Trp Cys Met Phe Gly
 260 265 270
 Gly Gln Val Gly Ile Ala Gly His Leu Lys Ile Gly Asn Gln Val Asn
 275 280 285
 Leu Gly Ala Gln Ser Gly Val Pro Gly Asn Ile Lys Ser Gly Ser Gln
 290 295 300
 Leu Ile Gly Thr Pro Pro Met Glu Leu Lys Gln Phe Phe Lys Ala Ser
 305 310 315 320
 Ile Val Gln Lys Ser Leu Pro Glu Met Gln Ile Glu Leu Arg Asn Leu
 325 330 335
 Arg Lys Glu Ile Glu Glu Leu Lys Gln Gln Leu Asn Lys
 340 345

<210> 9483

<211> 304

<212> PRT

<213> B.fragilis

<400> 9483

Pro Ile Val Met Thr Ala Lys Thr Leu Ile Val Leu Ile Gly Pro Thr
 1 5 10 15
 Gly Val Gly Lys Thr Glu Leu Ser Leu Arg Ile Ala Glu Tyr Phe Lys
 20 25 30
 Thr Ser Ile Ile Ser Ser Asp Ser Arg Gln Leu Tyr Ala Glu Leu Lys
 35 40 45
 Ile Gly Thr Ala Ala Pro Thr Pro Glu Gln Leu Lys Arg Val Pro His
 50 55 60
 Tyr Phe Val Gly Thr Leu Gln Leu Thr Asp Tyr Tyr Ser Ala Ala Gln
 65 70 75 80
 Tyr Glu Thr Glu Val Met Ser Val Leu Glu Gln Leu Phe Gln Gln His
 85 90 95
 His Val Val Leu Leu Thr Gly Gly Ser Met Met Tyr Val Asp Ala Ile
 100 105 110
 Cys Lys Gly Ile Asp Asp Ile Pro Thr Val Asp Ala Glu Thr Arg Glu
 115 120 125
 Leu Leu Leu His Lys Tyr Asp Thr Glu Gly Leu Asp Asn Leu Cys Ala
 130 135 140
 Glu Leu Lys Leu Leu Asp Pro Glu Tyr Tyr Lys Ile Val Asp Leu Lys
 145 150 155 160

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Asn Pro Lys Arg Val Ile His Ala Leu Glu Ile Cys Tyr Met Thr Gly
      165      170      175
Lys Thr Tyr Thr Ser Phe Arg Thr Gln Gln Lys Lys Glu Arg Pro Phe
      180      185      190
His Ile Leu Lys Ile Gly Leu Thr Arg Asp Arg Ala Glu Leu Tyr Asp
      195      200      205
Arg Ile Asn Arg Arg Val Asp Gln Met Met Asn Glu Gly Leu Leu Glu
      210      215      220
Glu Ala Arg Ser Val Tyr Ala His Arg Glu Leu Asn Ser Leu Asn Thr
      225      230      235      240
Val Gly Tyr Lys Glu Ile Phe Lys Tyr Leu Asp Gly Glu Trp Asp Leu
      245      250      255
Asp Phe Ala Ile Glu Lys Ile Lys Gln Asn Ser Arg Ile Tyr Ser Arg
      260      265      270
Lys Gln Met Thr Trp Phe Lys Arg Asp Glu Glu Ile Arg Trp Phe His
      275      280      285
Pro Glu Gln Glu Lys Glu Ile Leu Ser Tyr Leu Gln Val Ser Ile Lys
      290      295      300

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<210> 9484

<211> 264

<212> PRT

<213> B.fragilis

<400> 9484

```

Ser Ser Ile Phe Ala Arg Lys Asn Gln Val Asn Gly Met Ser Val Gln
1      5      10      15
Arg Tyr Phe Ile Tyr Leu Ala Tyr Asp Gly Thr His Tyr His Gly Trp
      20      25      30
Gln Ile Gln Pro Asn Gly Ile Ser Ile Gln Glu Cys Leu Met Lys Ala
      35      40      45
Leu Ala Thr Phe Leu Arg Lys Asp Thr Glu Val Ile Gly Ala Gly Arg
      50      55      60
Thr Asp Ala Gly Val His Ala Ser Leu Met Val Ala His Phe Asp Tyr
      65      70      75      80
Glu Gly Glu Pro Leu Asp Val Asp Lys Val Ala Glu Lys Leu Asn Arg
      85      90      95
Leu Leu Pro Gln Asp Ile Ser Val Tyr Lys Val Cys Arg Val Lys Pro
      100      105      110
Asp Ala His Ala Arg Phe Asp Ala Thr Ala Arg Thr Tyr Lys Tyr Tyr
      115      120      125
Ile Thr Thr Val Lys Phe Pro Phe Asn Arg Gln Tyr Arg Tyr Arg Ile
      130      135      140
His Asn Pro Leu Asp Phe Gln Lys Met Asn Glu Ala Ala Leu Thr Leu
      145      150      155      160
Phe His Tyr Ser Asp Phe Thr Ser Phe Ser Lys Leu His Thr Asp Val
      165      170      175
Lys Thr Asn Ile Cys Lys Ile Met His Ala Glu Trp Thr Gln Glu Asp
      180      185      190
Glu Tyr Thr Trp Val Phe Thr Ile Gln Ala Asp Arg Phe Leu Arg Asn
      195      200      205
Met Val Arg Ala Ile Val Gly Thr Leu Leu Glu Val Gly Arg Gly Lys
      210      215      220
Leu Ser Val Asp Asp Phe Arg Lys Ile Ile Glu Gln Gln Asn Arg Cys
      225      230      235      240
Lys Ala Gly Thr Ser Ala Pro Gly Asn Ala Leu Phe Leu Val Asn Val
      245      250      255
Glu Tyr Pro Gln Glu Ile Phe Glu
      260

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<210> 9485
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 9485

Lys	Lys	Val	Ile	Tyr	Arg	Cys	Phe	Ser	Phe	Thr	Val	Thr	Lys	Thr	His
1				5					10					15	
Thr	Cys	Leu	His	Gly	Trp	Ser	Ile	Leu	Phe	Met	Lys	Pro	Asn	Arg	Pro
			20					25					30		
Gln	Ser	Asn	Ser	Gly	Leu	Tyr	Arg	Glu	Leu	His	Met	Pro	Tyr	Leu	Ile
		35					40					45			
Lys	Arg	Thr	Arg	Lys	Asn	Thr	Pro	Gly	Lys	Ser	Lys	Asn	Leu	Gln	Thr
	50					55					60				
Ala	Thr	Phe	Thr	Asp	Met	Lys	Gln	Ile	Leu	Thr	Tyr	Leu	Leu	Phe	Ile
65					70					75					80
Trp	Ile	Leu	Leu	Pro	Leu	Lys	Ala	Glu	Glu	Lys	Ile	Tyr	Thr	Val	Asp
				85					90					95	
Asn	Ile	Pro	Lys	Val	His	Leu	Gln	Asn	Lys	Met	Gln	Tyr	Val	Cys	Asn
			100					105					110		
Pro	Ala	Gly	Ile	Leu	Ser	Gln	Gln	Ala	Cys	Asp	Glu	Ile	Asp	Ala	Met
		115					120					125			
Leu	Tyr	Ala	Leu	Glu	Gln	Gln	Thr	Gly	Ile	Glu	Thr	Val	Val	Ala	Ile
	130					135					140				
Val	Pro	Ser	Ile	Gly	Asp	Lys	Asp	Cys	Phe	Glu	Phe	Ser	His	Gln	Leu
145					150					155					160
Leu	Asn	Gln	Trp	Gly	Val	Gly	Lys	Lys	Gly	Lys	Asp	Asn	Gly	Leu	Val
				165					170					175	
Ile	Leu	Leu	Val	Thr	Asp	Gln	Arg	Cys	Ile	Gln	Phe	Tyr	Thr	Gly	Tyr
			180					185					190		
Gly	Leu	Glu	Gly	Ile	Leu	Pro	Asp	Ala	Ile	Cys	Lys	Arg	Ile	Gln	Met
	195					200						205			
Gln	Glu	Met	Ile	Pro	Tyr	Leu	Lys	Lys	Gly	Glu	Trp	Asn	Gln	Gly	Met
	210					215					220				
Leu	Ala	Gly	Val	Lys	Ala	Val	Cys	Gln	Arg	Leu	Asp	Gly	Ser	Met	Val
225					230					235					240
Asn	Asp	Asp	Glu	Gly	Arg	Gly	Glu	Glu	Gly	Ile	Ser	Val	Ser	Met	Leu
			245						250					255	
Leu	Val	Val	Ile	Leu	Ser	Phe	Ile	Thr	Ile	Ala	Gly	Val	Val	Gly	Ile
			260					265					270		
Leu	Ala	Val	Arg	Ala	Ser	Thr	Arg	Cys	Pro	Lys	Cys	Gly	Lys	His	Gln
	275						280					285			
Leu	Gln	Arg	Ser	Ser	Thr	Lys	Leu	Ile	Ser	Asn	Arg	Asn	Gly	Val	Lys
	290					295					300				
Thr	Glu	Asp	Ile	Ile	Tyr	Thr	Cys	Arg	Asn	Cys	Gly	His	Thr	Val	Val
305					310					315					320
Arg	Arg	Gln	Gln	Ser	Tyr	Asp	Asp	Asn	Tyr	Arg	Gly	Arg	Gly	Gly	Gly
				325					330					335	
Gly	Pro	Phe	Ile	Gly	Gly	Phe	Gly	Gly	Gly	Ser	Phe	Gly	Ser	Gly	Gly
		340					345					350			
Gly	Gly	Gly	Phe	Ser	Gly	Gly	Ser	Phe	Gly	Gly	Gly	Ser	Gly	Gly	Gly
	355					360						365			
Gly	Gly	Ala	Gly	Ser	Arg	Phe									
	370					375									

<210> 9486
 <211> 230
 <212> PRT

<213> B.fragilis

<400> 9486

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Lys Arg Leu Ile Met Asn Gln Ser Lys Cys Arg Ser His Phe Val Ile
1      5      10      15
Ser Ile Phe Leu Cys Phe Ile Leu Pro Cys Leu Ala Gly Cys Lys Lys
      20      25      30
Lys Asp Met Ser Leu Lys Leu Asn Glu Pro Arg Asn Ile Lys Gly Val
      35      40      45
Val Ser Tyr Lys Arg Ser Phe Gly Asp Leu Asn Asp Val Gln Leu Lys
      50      55      60
Ala Ala His Ala Trp Gly Ile Ala Pro Leu Ala Ser Arg Glu Glu Ala
65      70      75      80
Glu Glu Met Asp Gly Lys Leu Val His Ile Val Asp Asn Asp Phe Tyr
      85      90      95
Val Val Asp Ser Leu Thr His Ser Ile Pro Tyr Leu Val Pro Arg Ala
      100     105     110
Ser Ala Leu Leu Asp Thr Ile Gly Ala Asn Phe Leu Asp Ser Leu Thr
      115     120     125
Ala Lys Gly Leu Asn Pro Asn Lys Ile Ile Val Thr Ser Val Leu Arg
      130     135     140
Thr Glu Asn Asp Val Lys Arg Leu Arg Arg Asn Gly Asn Ala Ser
145     150     155     160
Lys Asn Ser Cys His Phe Tyr Gly Thr Thr Phe Asp Val Ser Trp Lys
      165     170     175
Arg Phe Lys Lys Val Glu Asp Glu Asp Gly Arg Pro Leu Gln Asp Val
      180     185     190
Ser Ala Asp Thr Leu Lys Leu Val Leu Ala Glu Val Leu Arg Asp Val
      195     200     205
Arg Lys Ala Asp Lys Cys Tyr Val Lys Tyr Glu Leu Lys Gln Gly Cys
      210     215     220
Phe His Ile Thr Thr Arg
225      230

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<210> 9487

<211> 340

<212> PRT

<213> B.fragilis

<400> 9487

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Ile Asp Ser Met Ile Glu Lys Leu Ile Val Leu Glu Asp Ile Asp Pro
1      5      10      15
Val Ile Phe Tyr Gly Val Asn Asn Ala Asn Ile Gln Leu Ile Lys Ala
      20      25      30
Leu Tyr Pro Lys Leu Arg Ile Val Ala Arg Gly Asn Val Ile Lys Val
      35      40      45
Leu Gly Asp Glu Glu Glu Met Cys Ala Phe Glu Asp Asn Ile Thr Lys
      50      55      60
Leu Glu Lys Tyr Cys Ala Glu Tyr Asn Ser Leu Lys Glu Glu Val Ile
65      70      75      80
Ile Asp Ile Ile Lys Gly Asn Ala Pro Gln Ala Glu Lys Ala Gly Asn
      85      90      95
Val Ile Val Phe Ser Val Thr Gly Lys Pro Ile Ile Pro Arg Ser Glu
      100     105     110
Asn Gln Leu Lys Leu Val Glu Gly Phe Ala Lys Asn Asp Met Val Phe
      115     120     125
Ala Ile Gly Pro Ala Gly Ser Gly Lys Thr Tyr Thr Ala Ile Ala Leu
      130     135     140
Ala Val Arg Ala Leu Lys Asn Lys Glu Ile Lys Lys Ile Ile Leu Ser

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145          150          155          160
Arg Pro Ala Val Glu Ala Gly Glu Lys Leu Gly Phe Leu Pro Gly Asp
          165          170          175
Met Lys Asp Lys Ile Asp Pro Tyr Leu Gln Pro Leu Tyr Asp Ala Leu
          180          185          190
Gln Asp Met Ile Pro Ala Ala Lys Leu Lys Glu Tyr Met Glu Leu Asn
          195          200          205
Ile Ile Gln Ile Ala Pro Leu Ala Phe Met Arg Gly Arg Thr Leu Asn
          210          215          220
Asp Ala Val Val Ile Leu Asp Glu Ala Gln Asn Thr Thr Thr Gln Gln
225          230          235          240
Ile Lys Met Phe Leu Thr Arg Met Gly Met Asn Thr Lys Met Ile Ile
          245          250          255
Thr Gly Asp Met Thr Gln Ile Asp Leu Pro Ala Ser Gln Thr Ser Gly
          260          265          270
Leu Val Gln Ala Leu Arg Ile Leu Lys Gly Val Lys Gly Ile Ser Phe
          275          280          285
Val Glu Leu Asn Lys Lys Asp Ile Val Arg His Lys Leu Val Glu Arg
          290          295          300
Ile Val Asp Ala Tyr Glu Lys Phe Asp Lys Glu Lys Lys Ala Glu Arg
305          310          315          320
Glu Lys Leu Asn Gly Glu Arg Leu Thr Ile Ser Lys Glu Arg Gln Asn
          325          330          335
Val Gly Asn Leu
          340

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<210> 9488

<211> 332

<212> PRT

<213> B.fragilis

<400> 9488

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Asn Tyr Leu Ile Met Asn Leu Asn Thr Pro Val Glu Ile Pro Ser Gly
1          5          10          15
Phe Thr Pro Ile Ser His Ala Gln Gln Leu Leu Ile Met Gly Ser Cys
          20          25          30
Phe Ala Glu Asn Ile Gly Thr Leu Ala Glu Asn Lys Phe Arg Ile
          35          40          45
Asp Ile Asn Pro Phe Gly Ile Leu Tyr Asn Pro Arg Ser Ile Ser Met
          50          55          60
Ala Leu Arg Glu Ile Ile Ser Gln Lys Gln Tyr Lys Ala Ser Asp Leu
65          70          75          80
Phe Leu His Arg Glu Cys Trp His Ser Pro Met His His Gly Ser Phe
          85          90          95
Ser Ala Ala Thr Leu Ala Asp Thr Leu Arg Asn Ile Gln Ser Arg Leu
          100          105          110
Glu Gln Ala His Lys Glu Leu Lys Gln Leu Asp Arg Leu Met Leu Thr
          115          120          125
Phe Gly Thr Ala Tyr Val Tyr Glu Gln Lys Glu Thr Gly Lys Val Val
          130          135          140
Ala Asn Cys His Lys Leu Pro Glu Lys Asn Phe Ile Arg Arg Arg Leu
145          150          155          160
Glu Ile Asp Glu Ile Val Glu Asp Tyr Thr Leu Leu Leu Asp Glu Leu
          165          170          175
Ile Ser Leu Asn Pro Gln Leu Lys Ile Leu Phe Thr Val Ser Pro Ile
          180          185          190
Arg His Ile Arg Asp Gly Met His Ala Asn Gln Leu Ser Lys Ser Val
          195          200          205
Leu Leu Leu Ala Ile Asp Arg Leu Met Gln Arg Tyr Pro Gln Val Thr

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      210                      215                      220
Cys Tyr Phe Pro Ser Tyr Glu Ile Val Leu Asp Glu Leu Arg Asp Tyr
225                      230                      235                      240
Arg Phe Tyr Ala Asp Asp Met Val His Pro Ser Thr Leu Thr Val Asn
      245                      250                      255
Tyr Leu Trp Glu Arg Phe Ser Glu Thr Phe Phe Thr Pro Glu Thr Gln
      260                      265                      270
Ser Leu Ile Lys Glu Cys Glu Thr Ile Arg Lys Ala Ile Ala His Lys
      275                      280                      285
Pro Phe His Pro Glu Ser Glu Glu His Lys Arg Phe Leu Gly Gln Ile
      290                      295                      300
Val Leu Lys Ile Glu Arg Leu Asn Gly Lys Tyr Pro Tyr Leu Asp Phe
305                      310                      315                      320
Glu Lys Glu Thr Asn Met Cys Arg Leu Ala Leu Gln
      325                      330

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<210> 9489
<211> 79
<212> PRT
<213> B.fragilis

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<400> 9489
Tyr Asn Thr Val Met Thr Asn Leu Phe Leu Leu Gly Phe Met Pro Ser
1                      5                      10                      15
Gly Ser Glu Trp Ile Ile Ile Leu Leu Val Ile Leu Leu Leu Phe Gly
      20                      25                      30
Gly Lys Lys Ile Pro Glu Leu Met Arg Gly Leu Gly Lys Gly Val Lys
      35                      40                      45
Ser Phe Lys Glu Gly Val Asn Glu Ala Lys Glu Glu Ile Asn Lys Ala
      50                      55                      60
Lys Glu Glu Ile Asp Glu Pro Glu Asn Lys Glu Lys Lys Asp Asn
65                      70                      75

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<210> 9490
<211> 61
<212> PRT
<213> B.fragilis

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<400> 9490
Pro His Pro Val Gly Tyr Asp Ile Leu Leu Pro Ala Pro Tyr Ala Val
1                      5                      10                      15
Thr Trp Val His Tyr His Met Thr Asn Arg Tyr Asp Cys Gln Asn Phe
      20                      25                      30
Asn Cys Thr Tyr Arg Ser Tyr Arg Cys Arg Lys Asn Gly Val Lys Pro
      35                      40                      45
Pro His Ser Arg Ile Phe Gln Asp Glu Tyr His Phe Val
      50                      55                      60

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<210> 9491
<211> 135
<212> PRT
<213> B.fragilis

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<400> 9491
Thr Lys Ser Phe Arg Tyr Leu Cys Ser Asn Glu Glu Lys Val Met Lys
1                      5                      10                      15
Arg Leu Thr Ala Lys Glu Glu Glu Ile Met Gly Phe Phe Trp Glu Lys
      20                      25                      30
Gly Pro Leu Phe Val Lys Glu Ile Leu Ala Phe Tyr Asp Glu Pro Lys

```


35	40	45
Pro His Phe Asn Thr Leu Ser Thr Ile Val Arg Gly Leu Glu Glu Lys		
50	55	60
Gly Phe Leu Ala His His Thr Tyr Gly Asn Thr Tyr Gln Tyr Tyr Ala		
65	70	75
Val Val Ser Glu Ser Asp Phe Ser Lys Arg Thr Leu Lys Ser Val Ile		
85	90	95
Ser Lys Tyr Phe Asn Asn Ser Tyr Leu Ser Ala Val Ser Ser Leu Val		
100	105	110
Lys Glu Glu Asp Ile Ser Leu Asp Asp Leu Lys Lys Leu Ile Gln Glu		
115	120	125
Val Glu Gln Lys Asn Glu Glu		
130	135	

<210> 9492

<211> 437

<212> PRT

<213> B.fragilis

<400> 9492

Asn Arg Glu Phe Cys Arg Cys Arg Pro Cys Cys Cys Gln Arg Ser Ala		
1	5	10
Arg Ala Asn Gly Arg Thr Ala Glu Ser Tyr Phe Ile Met Pro His Glu		
20	25	30
Arg Lys Ile Ile Asn Asp Pro Val Phe Gly Phe Ile Asn Ile Pro Lys		
35	40	45
Gly Leu Leu Tyr Asp Ile Val Arg His Pro Leu Leu Gln Arg Leu Asn		
50	55	60
Arg Ile Lys Gln Val Gly Leu Ser Ser Val Val Tyr Pro Gly Ala Gln		
65	70	75
His Thr Arg Phe Gln His Ser Leu Gly Ala Phe Tyr Leu Met Ser Glu		
85	90	95
Ala Ile Thr Gln Leu Ala Ser Lys Gly Asn Phe Ile Phe Asp Ser Glu		
100	105	110
Ala Glu Ala Val Gln Ala Ala Ile Leu Leu His Asp Ile Gly His Gly		
115	120	125
Pro Phe Ser His Val Leu Glu Asp Thr Ile Val Lys Gly Val Ser His		
130	135	140
Glu Glu Ile Ser Leu Met Leu Met Glu Arg Met Asn Arg Glu Met Asn		
145	150	155
Gly Gln Leu Ser Leu Ala Ile Gln Ile Phe Lys Asp Glu Tyr Pro Lys		
165	170	175
Arg Phe Leu His Gln Leu Val Ser Gly Gln Leu Asp Met Asp Arg Leu		
180	185	190
Asp Tyr Leu Arg Arg Asp Ser Phe Tyr Thr Gly Val Ser Glu Gly Asn		
195	200	205
Ile Gly Ser Ala Arg Ile Ile Lys Met Leu Asp Val Ala Asp Asp His		
210	215	220
Leu Val Val Glu Ser Lys Gly Ile Tyr Ser Ile Glu Asn Phe Leu Thr		
225	230	235
Ala Arg Arg Leu Met Tyr Trp Gln Val Tyr Leu His Lys Thr Ser Val		
245	250	255
Ala Tyr Glu Arg Met Leu Ile Ser Ala Leu Leu Arg Ala Lys Glu Leu		
260	265	270
Ala Ser Lys Gly Val Glu Leu Phe Ala Ser Pro Ala Leu Lys Phe Phe		
275	280	285
Leu Tyr Asn His Ile Asp Pro Glu Val Phe Tyr Asn Asn Pro Asp Cys		
290	295	300
Leu Glu Asn Phe Ile Gln Leu Asp Asp Asn Asp Ile Trp Thr Ala Leu		

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305          310          315          320
Lys Val Trp Ser Thr His Thr Asp Lys Val Leu Ser Thr Leu Ser Leu
          325          330          335
Gly Met Ile Asn Arg Asn Ile Phe Lys Val Glu Ile Cys Ser Glu Pro
          340          345          350
Ile Ser Glu Glu Arg Lys Lys Glu Leu Thr Leu Leu Ile Ser Arg Gln
          355          360          365
Leu Gly Ile Thr Leu Ser Glu Ala Asp Tyr Phe Val Ser Thr Pro Ser
          370          375          380
Ile Glu Lys Asn Met Tyr Asp Ser Ala Asp Asp Ser Ile Asp Ile Ile
385          390          395          400
Tyr Lys Asp Gly Thr Ile Lys Asn Ile Ala Glu Ala Ser Asp Met Leu
          405          410          415
Asn Ile Ser Leu Leu Ser Lys Lys Val Lys Lys Tyr Tyr Ile Cys Tyr
          420          425          430
Leu Arg Trp Asp Arg
          435

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<210> 9493

<211> 287

<212> PRT

<213> B.fragilis

<400> 9493

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Arg Val Ser Thr Val Thr Ala Ala Val Thr Pro Lys Thr Glu Met Glu
1          5          10          15
Arg Thr Lys Ala Glu Thr Glu Thr Gly Lys Arg Lys Arg Arg Ile Ile
          20          25          30
Thr Ala Arg Asn Lys Leu Pro Met Ala Lys His Arg Val His Ser Pro
          35          40          45
Leu Arg Leu Met His Arg Arg Thr Thr Val Leu Ser Leu Tyr Lys Thr
          50          55          60
Asn Ser Val His Val Val Asn Val Arg Lys Thr Ile Ile Ala Thr Thr
65          70          75          80
Thr Asn His Val Lys Ile Met Ser Leu Val Asn Arg Val Ala Thr Arg
          85          90          95
Thr Gly Lys Arg Val Lys Thr Asn Pro Val Asn Ser Ala Leu Leu Ala
          100          105          110
Asn His Ala Asp Arg Ala Thr Met Asn Asn Leu Asn Val Ser Arg Lys
          115          120          125
Leu Arg Lys Met Lys Ser Leu Leu Lys Asn Ser Ile Cys Met Leu Leu
          130          135          140
Thr Thr Trp Val Leu Thr Ala Cys Asp Glu Asn Thr Val Tyr His Ser
145          150          155          160
Tyr Gln Ser Thr Pro Pro Asp Gly Trp Lys Lys Ser Asp Thr Leu Phe
          165          170          175
Phe Asn Val Ser Leu Lys Asp Ser Leu Ala Asn Leu Arg Leu Ser Val
          180          185          190
Gly Val Arg Asn Ser Ser Asn Tyr Pro Tyr Gln Asn Leu Asn Ile Leu
          195          200          205
Ile His Tyr Asn Leu Glu Asp Ser Thr Val Trp Lys Thr Asp Thr Leu
          210          215          220
Lys Phe Ile Leu Thr Asp Arg Glu Gly Lys Trp Thr Gly Thr Asp Trp
225          230          235          240
Gly Ser Leu Tyr Gln Ser Ala Leu Pro Leu Lys Asp Trp Phe Val Lys
          245          250          255
His Pro Gly Asn Tyr Thr Phe Lys Ile Val His Glu Met Lys Asn Glu
          260          265          270
Gln Leu Thr Gly Ile Ser Asp Val Gly Leu Lys Ile Glu His Leu

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275

280

285

<210> 9494

<211> 174

<212> PRT

<213> B.fragilis

<400> 9494

```

Leu Asn Asp His Pro Trp Asn Phe His Pro Val Val Lys Thr Ala Asp
1          5          10          15
Ser Ile Lys Val Val Leu Gly Met Glu Glu Asp Leu Ala Gly Ala Gly
          20          25          30
Tyr Asn Val Asn Gln Ser Lys Ile Ala Ile Gly Ser Gly Gly Leu Thr
          35          40          45
Gly Lys Gly Phe Leu Asn Gly Thr Gln Thr Lys Leu Lys Tyr Val Pro
          50          55          60
Glu Gln Asp Thr Asp Phe Ile Phe Cys Thr Val Gly Glu Glu Gln Gly
65          70          75          80
Phe Val Gly Ser Ala Ala Val Leu Leu Leu Phe Leu Ala Leu Ile Leu
          85          90          95
Arg Leu Ile Ala Thr Ser Glu Arg Gln Thr Ser Thr Phe Gly Arg Val
          100          105          110
Tyr Gly Tyr Ser Val Val Ser Ile Phe Leu Phe His Leu Phe Ile Asn
          115          120          125
Ile Gly Met Val Leu Gly Leu Thr Pro Val Ile Gly Ile Pro Leu Pro
          130          135          140
Phe Phe Ser Tyr Gly Gly Ser Ser Leu Trp Gly Phe Thr Ile Leu Leu
145          150          155          160
Phe Ile Phe Leu Arg Ile Asp Ala Gly Arg Ser Ile Arg Leu
          165          170

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<210> 9495

<211> 115

<212> PRT

<213> B.fragilis

<400> 9495

```

Gln Lys Val Lys Ser Ser Tyr Arg Lys Arg Lys Asn Lys Arg Arg Lys
1          5          10          15
Lys Ile Glu Asn Glu Glu Asn Arg Glu Lys Arg Gly Tyr Phe Leu Gly
          20          25          30
Lys Gly Ile Ser Ala Gly Pro Lys Gly Ile Val Ala Ile Lys Ala Ser
          35          40          45
Ile Asp Thr Ile Lys Ala Gly Met Ser Val Ile Arg Ile Ser Met Ile
          50          55          60
Val Ile Arg Ala Ser Ile Gly Ala Ile Lys Val Ser Ile Gly Ala Ile
65          70          75          80
Arg Ala Gly Ile Gly Val Phe Lys Ala Asn Ala Gly Ala Ile Arg Lys
          85          90          95
Asn Ile Cys Asp Gln Glu Ser Phe Ile Ile Lys Tyr Phe His Lys Gln
          100          105          110
Asn Leu Gly
          115

```

<210> 9496

<211> 100

<212> PRT

<213> B.fragilis

<400> 9496

Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Ser Arg Tyr Leu Thr Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 9497

<211> 63

<212> PRT

<213> B.fragilis

<400> 9497

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
 1 5 10 15
 Phe Gly Asn Leu Arg Ile Asn Gly His Leu His Leu Pro Glu Ala Tyr
 20 25 30
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala
 35 40 45
 Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Asp His Phe Leu
 50 55 60

<210> 9498

<211> 362

<212> PRT

<213> B.fragilis

<400> 9498

Gln Gln Lys Lys Asn His Asn Trp Glu Gln Arg Gln Ser Phe Gln Val
 1 5 10 15
 Leu Gln Arg Phe Arg Phe Ile Phe Phe Ser Tyr Phe Cys Pro Asn Met
 20 25 30
 His Pro Ser Ala Arg Ile Ala Lys Thr Asn Lys Lys Ile Met Arg Val
 35 40 45
 Ile Asp Leu Ile His Ser Asn Glu Lys Thr Ala Phe Ser Phe Glu Ile
 50 55 60
 Leu Pro Pro Leu Lys Gly Thr Gly Ile Glu Lys Leu Tyr Gln Thr Ile
 65 70 75 80
 Asp Thr Leu Arg Glu Phe Asp Pro Lys Tyr Ile Asn Ile Thr Thr His
 85 90 95
 Arg Ser Glu Tyr Val Tyr Arg Asp Leu Gly Asn Gly Leu Phe Gln Arg
 100 105 110
 Asn Arg Leu Arg Arg Arg Pro Gly Thr Val Ala Val Ala Ala Ile
 115 120 125
 Gln Asn Lys Tyr Asn Ile Thr Val Val Pro His Ile Leu Cys Ser Gly
 130 135 140
 Phe Thr Gln Glu Glu Thr Glu Tyr Val Leu Leu Asp Leu Gln Phe Leu
 145 150 155 160
 Gly Ile Thr Asp Leu Leu Val Leu Arg Gly Asp Lys Ala Lys His Glu
 165 170 175

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Thr Val Phe Thr Pro Glu Gly Asp Gly His His His Ala Leu Asp Leu
      180      185      190
Gln Gln Gln Ile Asn Asn Phe Asn Lys Gly Ile Phe Val Asp Gly Ser
      195      200      205
Glu Met Lys Val Thr Asn Thr Pro Phe Ser Tyr Gly Val Ala Cys Tyr
      210      215      220
Pro Glu Lys His Glu Glu Ala Pro Asn Ile Asp Met Asp Ile Tyr Trp
      225      230      235      240
Leu Lys Lys Lys Val Glu Ala Gly Ala Glu Tyr Ala Val Thr Gln Leu
      245      250      255
Phe Tyr Asp Asn Lys Lys Tyr Phe Glu Phe Val Glu Lys Val His Gln
      260      265      270
Ala Gly Ile Asp Ile Pro Ile Ile Pro Gly Ile Lys Pro Phe Lys Lys
      275      280      285
Ile Ser Gln Leu Asn Met Val Pro Lys Thr Phe Lys Val Asp Leu Pro
      290      295      300
Glu Glu Leu Thr Lys Glu Ala Leu Lys Cys Gln Thr Asp Glu Glu Ala
      305      310      315      320
Arg Gln Val Gly Ile Glu Trp Cys Ile Ser Gln Cys Lys Glu Leu Met
      325      330      335
Ala Ala Gly Val Pro Ser Ile His Phe Tyr Ser Ile Gly Ala Val Asp
      340      345      350
Ser Ile Lys Glu Val Ala Lys Ala Ile Tyr
      355      360

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<210> 9499

<211> 60

<212> PRT

<213> B.fragilis

<400> 9499

```

Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
1      5      10      15
Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
      20      25      30
Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
      35      40      45
Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
      50      55      60

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<210> 9500

<211> 95

<212> PRT

<213> B.fragilis

<400> 9500

```

Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro
1      5      10      15
Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala
      20      25      30
Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys
      35      40      45
Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val
      50      55      60
Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile
      65      70      75      80
Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg
      85      90      95

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<210> 9501
 <211> 492
 <212> PRT
 <213> B.fragilis

<400> 9501

```

Ser Asn Asn Phe Lys Ile Lys Tyr Met Glu Phe Lys Leu His Asn Gly
1          5          10          15
Ser Gly Gly Leu Cys Cys Lys Ser Cys Ser Arg Gln Asp Lys Lys Leu
          20          25          30
Asn Thr Tyr Asp Trp Leu Ala Asp Ile Pro Gly Asn Ala Glu Glu Ser
          35          40          45
Asp Met Val Glu Val Gln Phe Lys Asn Thr Arg Lys Gly Tyr Tyr Arg
          50          55          60
Asn Ser Asn Lys Ile Lys Leu Glu Lys Gly Asp Ile Val Ala Val Glu
65          70          75          80
Ala Thr Pro Gly His Asp Ile Gly Thr Val Thr Leu Thr Gly Arg Leu
          85          90          95
Val Pro Leu Gln Met Lys Lys Ala Asn Phe Lys Gln Asp Ala Glu Ile
          100          105          110
Lys Arg Ile Tyr Arg Lys Ala Lys Ala Val Asp Met Glu Lys Tyr Glu
          115          120          125
Glu Ala Lys Ala Lys Glu His Thr Thr Met Ile Arg Ala Arg Gln Ile
          130          135          140
Ala Ala Ser Leu Asn Leu Asp Met Lys Ile Gly Asp Val Glu Tyr Gln
145          150          155          160
Gly Asp Gly Asn Lys Ala Ile Phe Tyr Tyr Ile Ala Asp Glu Arg Val
          165          170          175
Asp Phe Arg Gln Leu Ile Lys Val Leu Ala Glu Ala Phe Arg Val Arg
          180          185          190
Ile Glu Met Lys Gln Ile Gly Ala Arg Gln Glu Ala Gly Arg Ile Gly
          195          200          205
Gly Ile Gly Pro Cys Gly Arg Glu Leu Cys Cys Ala Thr Trp Met Thr
          210          215          220
Ser Phe Val Ser Val Ser Thr Ser Ala Ala Arg Tyr Gln Asp Ile Ser
225          230          235          240
Leu Asn Pro Gln Lys Leu Ala Gly Gln Cys Ala Lys Leu Lys Cys Cys
          245          250          255
Leu Asn Tyr Glu Val Asp Cys Tyr Val Glu Ala Gln Lys Arg Leu Pro
          260          265          270
Ser Arg Glu Ile Glu Leu Glu Thr Lys Asp Gly Thr Tyr Tyr Phe Phe
          275          280          285
Lys Ala Asp Ile Leu Ser Asn Gln Ile Ser Tyr Ser Thr Asp Lys Asn
          290          295          300
Phe Ala Ala Asn Leu Val Thr Ile Ser Gly Lys Arg Ala Phe Glu Val
305          310          315          320
Ile Gly Leu Asn Lys Arg Gly Ile Lys Pro Asp Ser Leu Leu Glu Ala
          325          330          335
Glu Arg Lys Pro Glu Pro Lys Lys Pro Val Asp Leu Leu Glu Gln Glu
          340          345          350
Ser Leu Thr Arg Phe Asp Arg Asp Arg Arg Arg Asn Ala Lys Asp Gly
          355          360          365
Asn Gly Lys Asp Glu Gly Gly Asn Gly Asn Arg Lys Lys Lys Lys
          370          375          380
Asn Asn Asn Arg Pro Gln Gln Ala Ala Asn Gly Glu Thr Gln Ser Ser
385          390          395          400
Gln Pro Thr Pro Ile Asn Ala Gln Glu Asn Asn Gly Ser Gln Pro Val
          405          410          415
Gln Asn Gln Gln Arg Thr Arg Gly Glu Arg Pro Lys Asn Asn Asn Arg

```

420	425	430
Asn Asn Asn Gln Pro Arg Lys	Asn Asn Glu Ser Arg Glu Pro Arg Ser	
435	440	445
Asn Glu Asn Arg Glu Thr Arg Lys	Asn Glu Pro Arg Glu Gln Arg Pro	
450	455	460
Pro Arg Glu Pro Arg Gly Pro Arg	Asn Asn Glu Gln Pro Lys Arg Ile	
465	470	475
Glu Lys Ala Gln Glu Asn Glu Lys	Pro Ala Gln Glu	
485	490	

<210> 9502

<211> 370

<212> PRT

<213> B.fragilis

<400> 9502

Ala Met Phe Phe Arg Asp Val Ile Gly Gln Glu Glu Ala Lys Tyr Arg	
1 5 10 15	
Leu Ile Gln Glu Val Ser Glu Gly Arg Ile Pro His Ala Gln Leu Phe	
20 25 30	
Cys Gly Pro Glu Gly Val Gly Lys Phe Pro Leu Ala Leu Ala Tyr Ala	
35 40 45	
Arg Tyr Leu Ser Cys Thr Asn Arg Ser Asp Thr Asp Ala Cys Gly Val	
50 55 60	
Cys Pro Ser Cys Val Lys Phe Asn Lys Leu Val His Pro Asp Val His	
65 70 75 80	
Phe Val Phe Pro Val Val Lys Asn Gly Arg Ser Asp Asp Tyr Ile Val	
85 90 95	
Glu Trp Arg Lys Leu Val Leu Asn Asn Pro Tyr Phe Thr Ile Asn His	
100 105 110	
Trp Leu Asn Glu Ile Asn Ala Glu Asn Ala Gln Ala Val Ile Tyr Thr	
115 120 125	
Lys Glu Ser Asp Glu Ile Met Lys Lys Leu Ser Leu Lys Ser Ser Glu	
130 135 140	
Gly Gly Phe Lys Ile Thr Leu Leu Trp Leu Pro Glu Lys Met Gln Gln	
145 150 155 160	
Ala Cys Ala Asn Lys Leu Leu Lys Leu Glu Glu Pro Pro Glu Lys	
165 170 175	
Thr Ile Phe Leu Leu Val Ser Glu Ala Pro Asp Leu Ile Leu Gln Thr	
180 185 190	
Ile Leu Ser Arg Thr Gln Arg Phe Asn Leu Arg Lys Ile Glu Glu Glu	
195 200 205	
Cys Met Ala Glu Ala Leu Gln Ser Lys Tyr Gly Val Gln Gln Ala Thr	
210 215 220	
Ser Ile Ser Ile Ala His Leu Ala Asn Gly Asn Phe Ile Lys Ala Leu	
225 230 235 240	
Glu Thr Ile His Leu Asn Glu Glu Asn Gln Leu Phe Phe Glu Leu Phe	
245 250 255	
Val Ser Leu Met Arg Leu Ser Tyr Gln Arg Lys Ile Arg Glu Met Lys	
260 265 270	
Leu Trp Ser Glu Gln Val Ala Gly Met Gly Arg Glu Arg Gln Lys Asn	
275 280 285	
Phe Leu Glu Tyr Cys Gln Arg Met Ile Arg Glu Asn Phe Ile Tyr Asn	
290 295 300	
Leu His Arg Lys Glu Leu Thr Tyr Met Thr Leu Glu Glu Asn Phe	
305 310 315 320	
Ala Thr Arg Phe Ala Pro Phe Val Asn Glu Arg Asn Val Met Gly Ile	
325 330 335	
Met Asp Glu Leu Ser Glu Ala Gln Lys His Ile Glu Gln Asn Val Asn	

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<210> 9503
<211> 97
<212> PRT
<213> B.fragilis
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<210> 9504
<211> 828
<212> PRT
<213> B.fragilis
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<div> <div><400> 9504</div> <div> <div>Val Ala Arg Ser Phe Gln Pro Arg Gly Glu Asp Glu Arg Leu Gly Ile</div> <div>15</div> </div> </div>																
1	Pro	Ala	Phe	Lys	Leu	Ala	Asp	Gly	Pro	Leu	Gly	Val	Ala	Ser	Trp	Gly
			20					25						30		
	Leu	Phe	Gly	Arg	Ala	Thr	Ala	Phe	Pro	Ser	Ala	Leu	Ser	Leu	Ala	Ala
			35					40					45			
	Ser	Trp	Asn	Lys	Asn	Leu	Ala	Glu	Lys	Thr	Gly	Ala	Met	Tyr	Ala	Gln
			50				55					60				
	Glu	Trp	Arg	Ala	Arg	Gly	Ile	His	Phe	Leu	Leu	Ala	Pro	Gly	Val	Asn
65						70					75				80	
	Asn	Tyr	Arg	Ala	Ser	Lys	Gly	Ala	Arg	Asn	Phe	Glu	Tyr	Phe	Gly	Glu
					85					90					95	
	Asp	Pro	Tyr	Leu	Ala	Ser	Glu	Met	Val	Val	Pro	Phe	Ile	Lys	Ala	Val
				100					105					110		
	Gln	Asp	Gly	Gly	Val	Ile	Ala	Thr	Ile	Lys	His	Phe	Ala	Ala	Asn	Asp
			115					120					125			
	Gln	Glu	Phe	Asp	Arg	Tyr	Thr	Val	Ser	Thr	Glu	Val	Ser	Glu	Arg	Ala
			130				135					140				
	Leu	Gln	Glu	Ile	Tyr	Leu	Pro	Pro	Phe	Lys	Ala	Ala	Val	Gln	Lys	Ala
145						150					155				160	
	Gly	Val	Lys	Ala	Val	Met	Thr	Gly	Tyr	Asn	Leu	Val	Asn	Gly	Val	Tyr
					165					170					175	
	Cys	Thr	Glu	Asn	Lys	His	Leu	Ile	Asp	Ile	Leu	Lys	Lys	Asp	Trp	Gly
				180					185					190		
	Phe	Lys	Gly	Met	Leu	Met	Ser	Asp	Trp	Ala	Cys	Thr	Tyr	Ser	Ala	Glu
			195					200					205			

Asn	Ala	Ala	Asn	Tyr	Gly	Leu	Asp	Leu	Glu	Met	Gly	Ser	Asn	Asp	Trp
210						215					220				
Phe	Thr	Arg	Lys	Glu	Leu	Leu	Pro	Leu	Val	Lys	Glu	Gly	Lys	Val	Thr
225					230					235					240
Glu	Glu	Val	Ile	Asn	Asp	Lys	Val	Arg	Arg	Ile	Tyr	Gly	Ala	Cys	Ile
				245					250					255	
Ser	Met	Gly	Phe	Phe	Asp	Arg	Pro	Gln	Gln	Asp	Thr	Asp	Ile	Pro	Thr
			260					265					270		
Phe	Asn	Pro	Gln	Ala	Asn	Gln	Met	Ala	Leu	Asn	Thr	Ala	Cys	Glu	Gly
		275					280					285			
Ile	Ile	Leu	Leu	Lys	Asn	Glu	Gln	Asn	Thr	Leu	Pro	Ile	His	Arg	Pro
	290					295					300				
Lys	Val	Ile	Ala	Val	Ile	Gly	Pro	Thr	Ala	Asn	Pro	Ala	Ile	Val	Ser
305					310					315					320
Asp	Arg	Ile	Tyr	Asn	Val	Asn	Ser	Ile	Val	Tyr	Gly	Gly	Gly	Gly	Ser
				325					330					335	
Ser	Lys	Val	His	Pro	Trp	Tyr	Val	Val	Ser	Ala	Leu	Glu	Gly	Ile	Arg
			340					345					350		
Gln	Glu	Phe	Pro	Glu	Ala	Thr	Val	Leu	Tyr	Thr	Glu	Gly	Ile	Ser	Asn
		355					360					365			
Gln	Phe	Lys	Pro	Arg	Leu	Phe	Arg	Asn	Ser	Lys	Phe	Arg	Thr	Lys	Glu
	370					375					380				
Ser	Lys	Pro	Gly	Leu	Glu	Ala	Ser	Tyr	Tyr	Ala	Leu	Ser	Ser	Asp	Thr
385					390					395					400
Ser	Ala	Thr	Leu	Ser	Asp	Lys	Met	Ile	Gln	Gln	Gln	Ala	Val	Ala	Ala
				405					410					415	
Gly	Arg	Thr	Val	Ser	Val	Asn	Gln	Ser	Ala	Asp	Arg	Thr	Val	Glu	Thr
			420					425					430		
Asp	Lys	Glu	Glu	Ser	Gly	Leu	Ile	Leu	Arg	Arg	Thr	Asp	Arg	Thr	Val
		435				440						445			
Asn	Tyr	Glu	Trp	Trp	Gly	Tyr	Pro	Phe	Asn	Glu	Ser	Lys	Leu	Gly	Asn
	450					455					460				
Asp	Tyr	Arg	Val	Cys	Trp	Glu	Gly	Tyr	Val	Asp	Val	Glu	Lys	Thr	Asp
465					470					475					480
Ser	Ile	Arg	Phe	Phe	Val	Asp	Ala	Gln	Gly	Ala	Tyr	Arg	Leu	Trp	Ile
			485						490					495	
Asp	Gly	Thr	Leu	Ala	Leu	Asp	Ala	Ser	Gln	Ser	Gln	Ser	Phe	Asp	Val
			500					505					510		
Arg	Asn	Thr	Ala	Ile	Ser	Ala	Lys	Lys	Gly	Asp	Ala	Lys	His	Ile	Arg
		515						520				525			
Leu	Glu	Phe	Cys	Asn	Gln	Arg	Ser	Thr	Pro	Ala	Glu	Ile	Arg	Met	Gly
	530					535					540				
Tyr	Ala	Tyr	Gln	Ser	Asp	Ile	Asp	Phe	Ser	Glu	Ala	Lys	Arg	Leu	Ala
545					550					555					560
Ala	Lys	Ala	Asp	Leu	Val	Val	Phe	Cys	Ala	Gly	Leu	Asp	Gly	Ser	Ile
			565					570						575	
Glu	Leu	Glu	Gly	Arg	Asp	Arg	Pro	Phe	Asp	Leu	Pro	Tyr	Gly	Gln	Asp
			580					585					590		
Met	Leu	Ile	Gln	Glu	Leu	Val	Lys	Val	Asn	Pro	Lys	Leu	Ile	Val	Ala
		595					600					605			
Ile	His	Ala	Gly	Gly	Gly	Ile	Asn	Met	Thr	Arg	Trp	Ile	Asp	Gln	Val
	610					615					620				
Pro	Ala	Val	Val	His	Ala	Leu	Tyr	Pro	Gly	Gln	Glu	Gly	Gly	His	Ala
625					630					635					640
Leu	Ala	His	Ile	Leu	Ser	Gly	Lys	Val	Asn	Pro	Ser	Ala	Lys	Leu	Pro
			645					650						655	
Phe	Thr	Ile	Glu	Lys	Arg	Trp	Glu	Asp	Ser	Pro	Ala	Cys	Gly	His	Tyr
			660					665					670		
Asp	Glu	Thr	Arg	Lys	Glu	Lys	Lys	Val	Tyr	Tyr	Thr	Glu	Gly	Ile	Phe

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        675                680                685
Thr Gly Tyr Arg Gly Tyr Asp Gln Lys Gly Ile Glu Pro Leu Phe Pro
690                695                700
Phe Gly Phe Gly Leu Ser Tyr Thr Thr Phe Asp Tyr Ser Gly Leu Asn
705                710                715                720
Ile Arg Met Thr Asp Lys Lys Gln Lys Gln Leu Val Val Ser Phe Thr
        725                730                735
Val Thr Asn Thr Gly Gln Arg Asp Gly Tyr Glu Val Ala Gln Leu Tyr
        740                745                750
Val Arg Asp Met Gln Ser Lys Glu Pro Arg Pro Leu Lys Glu Leu Lys
        755                760                765
Gly Phe Asp Lys Val Tyr Leu Lys Ala Gly Glu Ser Lys Gln Ile Glu
        770                775                780
Ile Gly Leu Ser Glu Asp Ala Phe Gln Tyr Phe Asn Ala Lys Gln Ser
785                790                795                800
Arg Trp Val Phe Glu Lys Gly Glu Phe Glu Ile Leu Val Gly Ala Ser
        805                810                815
Ser Lys Asp Ile Arg Leu Ala Glu Lys Ile Lys Met
        820                825

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<210> 9505

<211> 325

<212> PRT

<213> B.fragilis

<400> 9505

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Ile Glu Lys Pro Ile Lys Lys Met Asp Tyr Ile Ser Phe Leu Ser Leu
1                5                10                15
Tyr Leu Trp Arg Glu Pro Met Asn Leu Ile Ser Met Ala Lys Gln Lys
        20                25                30
Asp Gly Phe Leu Gly Glu Gln Ala Leu Val Leu Pro Pro Ala Ile Val
        35                40                45
Gln Arg Met Lys Thr Asp Pro Ala Thr Ser Ile Leu Tyr Ile Thr Asp
        50                55                60
Ile Gly Tyr Tyr Pro Lys Ala Tyr Asn His Phe Arg Glu Arg Asp Thr
65                70                75                80
Pro Ile Asp Gln Tyr Val Phe Ile Tyr Cys Thr Glu Gly Arg Gly Trp
        85                90                95
Phe Ser Leu Asp Gly Gln Lys His Pro Val Val Pro Asn Gln Tyr Phe
        100                105                110
Ile Leu Pro Ala Gly Leu Pro His Ala Tyr Gly Ala Asp Glu Lys Glu
        115                120                125
Pro Trp Thr Ile Tyr Trp Ile His Phe Gly Gly Thr Leu Ala Pro Leu
        130                135                140
Tyr Cys Thr His Arg Thr Cys Arg Leu Thr Asp Ile Lys Pro Gly Met
145                150                155                160
His Ser Arg Ile Ser Tyr Arg Thr Glu Leu Phe Glu Glu Ile Phe Arg
        165                170                175
Val Leu Lys Met Gly Tyr Ser Leu Glu Asn Leu Ser Tyr Ala Ser Ser
        180                185                190
Val Phe His His Tyr Leu Gly Ser Leu Arg Tyr Leu Arg Glu Tyr Arg
        195                200                205
Glu Ala Phe Ser Glu His Arg Pro Ala Gly Glu Glu Asp Pro Val Asn
        210                215                220
Ala Ala Ile His Tyr Met Lys Glu Asn Leu Gly Lys Lys Leu Thr Leu
225                230                235                240
Ala Glu Leu Ala Asp Tyr Thr Gly Tyr Ser Ser Ser Tyr Phe Ser Asn
        245                250                255
Leu Phe Leu Lys Arg Thr Gly Tyr Ala Pro Leu Ser Tyr Phe Asn Gln

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260 265 270
 Ile Lys Ile Gln Lys Ala Cys Gln Phe Leu Asp Phe Thr Asp Met Lys
 275 280 285
 Val Asn Gln Val Cys Tyr Arg Val Gly Ile Glu Asp Ala Tyr Tyr Phe
 290 295 300
 Ser Arg Leu Phe Ser Gln Ile Met Gly Met Ser Pro Arg Glu Tyr Lys
 305 310 315 320
 Lys Val Lys Lys Gly
 325

<210> 9506

<211> 348

<212> PRT

<213> B.fragilis

<400> 9506

Arg Ser Leu Tyr Gly Asp Cys Tyr Ser His Cys Ile Tyr Asn Ser Thr
 1 5 10 15
 Ser Leu Lys Val Glu His Tyr Lys Leu Ile Phe Phe Asn Ile Met Lys
 20 25 30
 Ile Lys Leu Leu Leu Leu Cys Gly Leu Trp Ser Ser Cys Asn
 35 40 45
 Ser Tyr Asp Tyr Cys Pro Val Thr Pro Ser Glu Ser Asp Leu Val Phe
 50 55 60
 Thr Gly Leu Ala Arg Ser Trp Asp Glu Ala Met Pro Leu Gly Asn Ala
 65 70 75 80
 Thr Val Gly Ala Leu Val Trp Gln Arg Asp Ser Thr Leu Arg Leu Ser
 85 90 95
 Leu Asp Arg Thr Asp Leu Trp Asp Leu Arg Pro Val Asp Ser Leu Ser
 100 105 110
 Gly Asp Asn Phe Arg Phe Ser Trp Val Lys Glu His Ile Arg Gln Lys
 115 120 125
 Asn Tyr Leu Pro Val Gln Lys Lys Leu Asp Trp Pro Tyr Asp Met Asn
 130 135 140
 Pro Ala Pro Ser Lys Ile Pro Gly Ala Ala Ile Glu Phe Pro Leu Glu
 145 150 155 160
 Gln Ile Gly Thr Pro Thr Gln Val Arg Leu Tyr Leu Asn Asn Ala Leu
 165 170 175
 Cys Glu Ala Asp Trp Ala Asp Gly Thr Gln Met Gln Thr Phe Val His
 180 185 190
 Ala Thr Glu Pro Ile Gly Trp Phe Val Phe Arg Asn Leu Lys Thr Pro
 195 200 205
 Ile Glu Pro Ser Ile Ile Thr Pro Val Tyr Asn Lys Thr Lys Pro Asp
 210 215 220
 Gly Ser Leu Asp Pro Val Ser Gly Gln Asp Leu His Arg Leu Gly Tyr
 225 230 235 240
 Gln Gln Gly Lys Val Val Arg Glu Gly Asn Gln Ile Thr Tyr His Gln
 245 250 255
 Lys Gly Tyr Gly Asp Phe Ser Tyr Asp Val Thr Val Cys Trp Lys Gln
 260 265 270
 Glu Gly Glu Thr Leu Tyr Gly Thr Trp Ser Val Thr Ser Ser Leu Ser
 275 280 285
 Gly Glu Gln Ala Ser Glu Lys Ala Glu Ala Ala Leu Gln Arg Gly Val
 290 295 300
 Lys His Asp Tyr Gln Ala Pro Leu Glu Tyr Trp Asp Arg Tyr Trp Ala
 305 310 315 320
 Gln Ser Cys Ile Thr Leu Pro Asp Ala Asp Trp Lys Asn Arg Leu Arg
 325 330 335
 Pro Lys Leu Ile Asn Arg Val His Tyr Pro Glu His

340

345

<210> 9507

<211> 482

<212> PRT

<213> B.fragilis

<400> 9507

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Ser Val Ser Leu Phe Ile Ser Ile Leu Lys Pro Ala Tyr Phe Ala Ile
1          5          10          15
Ser Ile Lys Pro Phe Asn Asn Met Lys Gln Thr Arg Gly Tyr Leu Leu
20          25          30
Leu Ile Cys Ile Val Ser Ala Met Gly Gly Leu Leu Phe Gly Tyr Asp
35          40          45
Trp Val Val Ile Gly Gly Ala Lys Ile Phe Tyr Glu Pro Phe Phe Gly
50          55          60
Ile Glu Asn Ser Ala Ala Leu Arg Gly Trp Ala Met Ser Ser Ala Leu
65          70          75          80
Ile Gly Cys Leu Ala Gly Ala Leu Leu Ser Gly Ile Trp Ser Asp Lys
85          90          95
Tyr Gly Arg Lys Lys Met Leu Val Ile Ala Ser Phe Leu Phe Ala Leu
100         105         110
Ser Ala Trp Gly Thr Gly Ala Val Asp His Phe Ser Tyr Phe Ile Phe
115         120         125
Tyr Arg Ile Val Gly Gly Leu Gly Ile Gly Ile Ala Ser Asn Ile Ser
130         135         140
Pro Val Tyr Ile Ala Glu Val Ser Pro Ala His Val Arg Gly Lys Phe
145         150         155         160
Val Ser Leu Asn Gln Leu Thr Ile Val Leu Gly Ile Leu Leu Ala Gln
165         170         175
Leu Ala Asn Trp Gln Ile Gly Glu Tyr Tyr Thr Gln Gly Ser Asp Ile
180         185         190
Leu Ser Glu Thr Ser Val Gln Trp Ala Trp Arg Trp Met Phe Trp Ala
195         200         205
Glu Leu Ile Pro Ala Gly Ile Phe Phe Leu Leu Ser Phe Ile Ile Pro
210         215         220
Glu Ser Pro Arg Trp Leu Ala Thr Val His Gln Glu Lys Ala Gln
225         230         235         240
Lys Thr Leu Thr Arg Ile Gly Gly Glu Thr Tyr Ala Arg Gln Thr Leu
245         250         255
Glu Glu Leu Asn Gln Leu Thr Gln Ser Gln Gly Asn Arg Gln Asn Asn
260         265         270
Glu Trp Lys Ser Val Phe Arg Pro Glu Met Arg Lys Val Leu Ile Ile
275         280         285
Gly Ile Val Leu Ala Ile Phe Gln Gln Trp Cys Gly Ile Asn Val Ile
290         295         300
Phe Asn Tyr Ala His Glu Ile Phe Ser Ser Ala Gly Tyr Ala Val Ser
305         310         315         320
Asp Val Leu Met Asn Ile Val Val Thr Gly Ile Thr Asn Val Ile Phe
325         330         335
Thr Phe Val Ala Ile Tyr Thr Val Asp Lys Trp Gly Arg Arg Thr Leu
340         345         350
Met Leu Ile Gly Ser Ala Gly Leu Ala Leu Ile Tyr Leu Ile Leu Gly
355         360         365
Thr Cys Tyr Phe Leu Asp Val Asn Gly Leu Pro Met Leu Leu Leu Val
370         375         380
Val Leu Ala Ile Ala Cys Tyr Ala Met Ser Leu Ala Pro Val Val Trp
385         390         395         400
Val Val Leu Ser Glu Ile Phe Pro Val Lys Ile Arg Gly Met Ala Ile

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<210> 9508
<211> 1102
<212> PRT
<213> B.fragilis
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Asn	Lys	Met	Lys	Glu	Ser	Val	Asn	Val	Trp	Glu	Glu	Asp	Ile	Leu	Leu
1				5					10					15	
Pro	Thr	Tyr	Gly	Ile	Gly	Arg	Pro	Glu	Lys	Asn	Pro	Met	Phe	Leu	Glu
			20					25					30		
Lys	Arg	Val	Tyr	Gln	Gly	Ser	Ser	Gly	Ala	Val	Tyr	Pro	Tyr	Pro	Val
		35					40					45			
Ile	Glu	Lys	Ile	Glu	Asp	Thr	Cys	Glu	Glu	Lys	Ser	Tyr	His	Ala	Val
	50					55					60				
Trp	Leu	Glu	Asn	Glu	Tyr	Ile	Lys	Val	Met	Ile	Leu	Pro	Glu	Leu	Gly
65					70					75					80
Gly	Arg	Ile	Gln	Met	Ala	Phe	Asp	Lys	Val	Lys	Gln	Arg	His	Phe	Ile
				85					90					95	
Tyr	Tyr	Asn	His	Val	Ile	Lys	Pro	Ala	Leu	Val	Gly	Leu	Thr	Gly	Pro
			100					105					110		
Trp	Ile	Ser	Gly	Gly	Ile	Glu	Phe	Asn	Trp	Pro	Gln	His	His	Arg	Pro
		115					120					125			
Ser	Thr	Phe	Leu	Pro	Val	Asp	Tyr	Ser	Ile	Glu	Arg	Cys	Lys	Asp	Gly
	130					135					140				
Ser	Val	Val	Val	Trp	Val	Ser	Glu	Arg	Glu	Arg	Met	Phe	Gly	Gln	Lys
145					150					155					160
Gly	Thr	Ala	Gly	Phe	Thr	Leu	Arg	Pro	Gly	Arg	Ala	Val	Leu	Glu	Ile
				165					170					175	
Gln	Gly	Lys	Val	Ser	Asn	Pro	Thr	Pro	Leu	Pro	Gln	Thr	Phe	Leu	Trp
			180					185					190		
Trp	Ala	Asn	Pro	Ala	Val	Ala	Val	Asn	Asp	Cys	Tyr	Gln	Ser	Val	Phe
		195					200					205			
Pro	Ser	Asp	Val	Asn	Ala	Val	Phe	Asp	His	Gly	Lys	Arg	Asp	Val	Ser
		210				215					220				
Arg	Tyr	Pro	Ile	Ala	Thr	Gly	Thr	Tyr	Tyr	Lys	Met	Asp	Tyr	Ser	Ala
225					230					235					240
Gly	Val	Asp	Ile	Ser	Arg	Tyr	Lys	Asn	Ile	Pro	Val	Pro	Thr	Ser	Tyr
				245					250					255	
Met	Ala	Ile	Arg	Ser	Asn	Tyr	Asn	Phe	Val	Gly	Gly	Tyr	Glu	Asn	Asp
			260					265					270		
Thr	Gln	Ala	Gly	Val	Leu	His	Val	Ala	Asn	His	His	Ile	Ser	Pro	Gly
		275					280					285			
Lys	Lys	Gln	Trp	Thr	Trp	Gly	Asn	Gly	Asp	Phe	Gly	Gln	Ala	Trp	Asp
		290				295					300				
Arg	Asn	Leu	Thr	Asp	Ala	Asp	Gly	Pro	Tyr	Ile	Glu	Leu	Met	Thr	Gly
305					310					315					320
Val	Tyr	Thr	Asp	Asn	Gln	Pro	Asp	Phe	Ser	Trp	Leu	Gln	Pro	Tyr	Glu


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Phe Asn Lys Met Asn Arg Pro Asp Ala Ala Val Ala Leu Leu Glu Lys
      805      810      815
Ala Phe Arg Leu Asp His Thr Asp Ala Arg Val Leu Met Glu Leu Asp
      820      825      830
Gln Leu Tyr Lys Arg Leu Asn Arg Pro His Ile Glu Arg Leu Cys Phe
      835      840      845
Leu Glu Gln His Ile Asp Ile Val Met Thr Arg Asp Asp Leu Tyr Leu
      850      855      860
Glu Tyr Val Thr Leu Leu Asn Gln Thr Gly Gln Tyr Arg Glu Ala Ile
      865      870      875      880
Arg Arg Ile Asp Gln Arg Lys Phe His Pro Trp Glu Gly Gly Glu Gly
      885      890      895
Lys Val Pro Ala Gln Tyr Gln Leu Ala Arg Leu Glu Leu Ala Lys Glu
      900      905      910
Leu Ile Asn Arg Lys Lys Tyr Asp Asp Ala Leu Ala Leu Ile Asp Glu
      915      920      925
Cys Tyr Ile Tyr Pro Ala His Leu Gly Glu Gly Lys Leu Pro Gly Ala
      930      935      940
Gln Glu Asn Asp Phe Asn Tyr Tyr Lys Ala Tyr Ile Leu Gln Gln Gln
      945      950      955      960
Gly Arg Pro Glu Glu Ala His Ser Leu Phe Val Lys Ala Cys Ser Gly
      965      970      975
Asn Ser Gln Pro Ala Ala Ala Met Tyr Tyr Asn Asp Gln Lys Pro Asp
      980      985      990
Lys Ile Phe Tyr Gln Gly Leu Ala Tyr Arg Lys Leu Gly Glu Glu Glu
      995      1000      1005
Lys Ala Arg Ser Arg Phe Asn Gln Leu Ile Thr Tyr Gly Glu Glu His
      1010      1015      1020
Leu Phe Asp Arg Phe Lys Met Asp Tyr Phe Ala Val Ser Leu Pro Asp
      1025      1030      1035      1040
Leu Leu Ile Trp Glu Asp Asp Met Asp Lys Lys Asn Arg Ile His Cys
      1045      1050      1055
Asn Tyr Leu Met Ala Leu Gly His Leu Gly Leu Gly Asn Arg Thr Lys
      1060      1065      1070
Thr Glu His Phe Phe Asp Ile Ala Ala Ser Met Asp Asn Asn His Gln
      1075      1080      1085
Gly Val Gln Ile His Arg Lys Leu Met Asn Thr Ile Leu Ser
      1090      1095      1100

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<210> 9509

<211> 940

<212> PRT

<213> B.fragilis

<400> 9509

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Gln Ser Ser Arg Ser Thr Asn Ser Pro Glu Ile Asn Glu Tyr His Ser
1      5      10      15
Ile Met Lys Gln Ser Phe Gln Asn Thr Arg Tyr Arg Ala Ile Leu Leu
      20      25      30
Leu Thr Gly Leu Met Leu Ala Met Thr Ala Met Ala Gln Thr Leu Thr
      35      40      45
Asn Asp Ala Leu Asp Leu Ser Gly Met Trp Arg Phe Gln Leu Asp Pro
      50      55      60
Met Gly Phe Gly Lys Thr Pro Gly Ser Glu Leu Tyr Leu Asp Lys Leu
      65      70      75      80
Ser Glu Thr Ile Met Leu Pro Gly Ser Thr Asp Gln Gly Gly Lys Gly
      85      90      95
Ile Lys Asn Thr Ala Arg Tyr Val Asp Arg Leu Ser Arg Lys Phe Glu
      100      105      110

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Tyr Gln Gly Ala Ala Trp Tyr Gln Arg Glu Val Val Ile Pro Glu Asp
 115 120 125
 Trp Ala Asp Arg Glu Ile Tyr Leu Lys Leu Glu Arg Cys His Trp Glu
 130 135 140
 Thr Thr Val Tyr Val Asp Lys Glu Ala Gly Met Lys Glu His Leu
 145 150 155 160
 Ser Thr Pro Asn Thr Phe Val Leu Thr Pro Leu Leu Thr Pro Gly Ile
 165 170 175
 His Thr Leu Thr Ile Cys Val Asn Asn Thr Leu Lys Tyr Pro Met Asp
 180 185 190
 Gln Trp Asn His Gly Thr Thr Glu Tyr Thr Gln Thr Asn Trp Asn Gly
 195 200 205
 Ile Ala Gly Asp Ile Leu Leu Tyr Ala Lys Glu Lys Ala His Ile Arg
 210 215 220
 Gln Ile Asn Val Tyr Pro Asp Val Ser Ser Lys Ala Val Glu Val Ser
 225 230 235 240
 Val Gln Pro Ala Pro Leu Lys Thr Gly Gln Thr Gly Lys Leu Glu Leu
 245 250 255
 Cys Ile Arg Glu Gln Gly Gly Lys Ile Ile Ala Arg Gln Thr Leu Asn
 260 265 270
 Ala Asp Ser Leu Gln Val His Ala Gly Ile Arg Gln Thr Leu Pro Met
 275 280 285
 Gly Asn Arg Val Lys Leu Trp Asp Glu Phe Thr Pro Tyr Leu Tyr Glu
 290 295 300
 Ile Glu Ala Ser Trp Asn Val Asp Gly Lys Thr Asp Thr Gln Thr Arg
 305 310 315 320
 Thr Phe Gly Met Arg Asn Val Glu Gln Gly Lys His His Ile Arg Leu
 325 330 335
 Asn Gly Arg Asp Ile His Leu Arg Gly Val Leu Asp Cys Ala Val Phe
 340 345 350
 Pro Leu Thr Gly Tyr Pro Ser Thr Asn Val Asp Asp Trp Lys Arg Ile
 355 360 365
 Phe Thr Thr Ile Lys Glu Tyr Gly Met Asn His Val Arg Phe His Ser
 370 375 380
 Trp Cys Ser Pro Glu Ala Ala Phe Glu Ala Gly Asp Glu Val Gly Met
 385 390 395 400
 Tyr Leu Gln Ala Glu Leu Pro Met Trp Ile Lys Asp Val Gly Lys Tyr
 405 410 415
 Pro Asp Arg Arg Asp Phe Phe Glu Lys Glu Met Tyr Ala Ile Leu Asp
 420 425 430
 Ala Tyr Gly Asn His Pro Ser Phe Ile Leu Met Cys Asn Gly Asn Glu
 435 440 445
 Asn Glu Gly Asp Phe Ala Val Leu Glu Asp Leu Val Lys Lys Ala Gln
 450 455 460
 Lys Tyr Asp Asn Arg Arg Leu Tyr Ser Ala Ser Thr Ala Arg Thr His
 465 470 475 480
 Thr Pro Ser Asp Gln Tyr Tyr Val Ser His Val Thr Ser Lys Gly Trp
 485 490 495
 Ile Thr Val Tyr Glu Gly Lys Pro Ser Thr Asp Trp Asp Arg Cys Lys
 500 505 510
 Glu Ser Asp Ile Asp Val Pro Val Ile Ala His Glu Thr Gly Gln Arg
 515 520 525
 Cys Met Tyr Pro Asn Phe Glu Glu Met Lys Lys Tyr Thr Gly Val Val
 530 535 540
 Glu Ala Arg Asn Phe Glu Val Phe Arg Glu Arg Leu Ala Lys Asn Gly
 545 550 555 560
 Met Leu His Gln Ala Asn Asp Phe Phe Arg Ala Thr Gly Ala His Thr
 565 570 575
 Val Leu Gln Tyr Lys Glu Val Asn Glu Ser Leu Leu Arg Thr Arg Asn


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      50                      55                      60
Glu Asp Ile Thr Met Asp Ala Phe Leu Gln Leu Glu Thr Met Lys
65                      70                      75                      80
Val Glu Ser Val Asp Asn Pro Met Ala Leu Leu Ile Thr Ile Val Lys
      85                      90                      95
His Lys Ser Leu Asp Tyr Leu Lys Thr Gln Val Arg Arg Glu Asp Thr
      100                      105                      110
Lys Asp Asp Leu Ile Gln Trp Lys Gln Arg Glu Leu Ala Ile Arg Ile
      115                      120                      125
Ser Asn Leu Glu Gly Cys Asn Pro Ser Tyr Ile Phe Ser Gln Glu Ile
      130                      135                      140
Lys Ser Ile Val Met Lys Thr Leu Asn Gln Leu Pro Glu Gln Thr Lys
145                      150                      155                      160
Lys Val Phe Ile Met Ser Arg Phe Glu Asn Lys Ser Gly Lys Glu Ile
      165                      170                      175
Ala Gln Thr Leu Gly Ile Ser Val Lys Gly Val Asp Tyr His Met Asn
      180                      185                      190
Lys Ala Leu Lys Glu Leu Arg Ala Ala Leu Lys Asp Tyr Leu Pro Ile
      195                      200                      205
Leu Thr Trp Leu Cys Phe Met Asn Pro Ile Asn Lys Val Trp Ile Ser
      210                      215                      220

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<210> 9511

<211> 439

<212> PRT

<213> B.fragilis

<400> 9511

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Lys Leu Thr Ala Met Pro Thr Ile Leu Glu Arg Leu Thr Ala Leu Phe
1                      5                      10                      15
Ser Arg Asp Met Arg Ala Val Leu Arg Asn Pro Arg Ala Ile Ser Met
      20                      25                      30
Ile Glu Asn Pro Ser Ile Arg Val Gln Met Ala Ala Ile Arg Arg Asp
      35                      40                      45
Lys Ser Val Ile Cys Phe Ile Asp Lys Pro Val Glu Lys Val Gln Leu
      50                      55                      60
Ala Ala Val Gly Asn Ala Pro His Asn Ile His Phe Ile Ala Ser Pro
65                      70                      75                      80
Gly Glu Lys Val Gln Leu Ser Val Ile Arg His Lys Pro Gly Tyr Ile
      85                      90                      95
Gly Phe Ile Ser Asn Pro Thr Glu Lys Ala Gln Leu Thr Ala Val Glu
      100                      105                      110
Arg Arg Pro Glu Cys Ile Ser Leu Ile Ser Lys Pro Ala Val Lys Val
      115                      120                      125
Gln Leu Met Ala Val Leu Lys Asp Pro Ala His Ile Ala Ser Ile Lys
      130                      135                      140
Glu Pro Ala Glu Lys Val Gln Leu Ala Ala Val Gln Lys Asn Pro Glu
145                      150                      155                      160
Tyr Ile Arg His Ile Glu Ser Pro Thr Val Lys Val Gln His Met Ala
      165                      170                      175
Ile Gln Gly Asn Ala Asp Thr Leu Arg His Ile Lys Ser Pro Ala Asp
      180                      185                      190
Thr Val Gln Leu Ala Ala Val Gln Ala Lys Gly Glu Thr Ile Arg Tyr
      195                      200                      205
Val Ser Glu Pro Ser Glu Ala Val Gln Leu Ala Ala Val Arg Asn Asn
      210                      215                      220
Pro Met Asn Ile Arg Tyr Ile Glu Asn Pro Thr Glu Lys Val Gln Leu
225                      230                      235                      240
Ser Val Leu His Ala Asp Arg Glu Ala Ala Ala Leu Ile His Phe Pro

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210		215		220
Glu Lys Ile Leu Glu Gly	Gly Asn Ser Trp Arg	Val Val Glu Thr Pro		
225	230	235	240	
Ser Met Gln Glu Ile Arg	Ser Arg Gly Tyr Asp	Ala Ile His Ala		
	245	250	255	
Leu Asp Glu Gly Val Gln	Tyr Met Ala Val Phe	Ala Pro Asn Gln Leu		
	260	265	270	
Lys Ala Ser Gly Lys Tyr	Leu Tyr Ser Glu Arg	Asn Thr Gly Val Phe		
	275	280	285	
Ser Pro Gly Asn Asn Asp	Ile Arg Phe Arg Glu	Val His His Gly Ala		
	290	295	300	
Pro Ala Ser Phe Thr Gly	Tyr Arg Ser Met Lys	Thr Glu Thr Val Arg		
305	310	315	320	
Asp Asp Asn Ile Pro Ala	Val Leu Ala Ala Leu	Arg Asp Lys Leu Glu		
	325	330	335	
Asp Thr Glu Gln Glu Trp	Gln Asp Arg Ile Leu	Asp Tyr Ile Ala Glu		
	340	345	350	
Asn Tyr Pro Thr Gln Ala	Thr Val Ser Ala Gln	Thr Arg Ser Pro Glu		
	355	360	365	
Gly Leu Lys Glu Arg Glu	Ala Met Lys Lys Asp	Lys Thr Leu Met Lys		
370	375	380		
Met Lys Glu Glu Ala Val	Ala Ala Leu Asn Ala	Asp Glu Lys Val		
385	390	395	400	
Met Glu Ala Phe Lys Lys	Glu Asn Gly Asp Ile	Leu Phe Arg Glu Val		
	405	410	415	
Lys Gly Lys Asp Gly Gly	Lys Ser Leu Val Gly	Leu His Asn Ile Thr		
	420	425	430	
Glu Glu Lys Leu Leu Lys	Ala Leu Lys Leu Gly	Gly Leu Ala Asn Pro		
	435	440	445	
Ser Ala Ala Val Ile Asp	Ile Ala Arg Gln Ser	His Glu Gly Tyr Gly		
450	455	460		
Glu Ile Ser Leu Ile Leu	Pro Ser Ser Met Ile	Asp Lys Arg Thr Gly		
465	470	475	480	
Arg Asn Ala Gly Thr Phe	Ser Gly Asp Ala Trp	Thr Pro Val Tyr Pro		
	485	490	495	
Gln Ile Glu Arg Gln Phe	Ser Gly Asp Gly Ser	Gly Arg Val Arg Asp		
	500	505	510	
Ala Ile Ser Arg Leu Pro	Gln Glu Met Lys Pro	Asn Val Arg Ser Thr		
	515	520	525	
Trp Asn Ser Tyr Met Asp	Gly Arg Asp Glu Gly	Ser Ala Phe Ala Tyr		
530	535	540		
Gln Phe Leu Tyr Glu Arg	Gly Glu Ala Pro Glu	Phe Arg Lys Val Glu		
545	550	555	560	
Pro Leu Phe Gly Glu His	Leu Arg Asn Arg Ile	Ser Ala Ile Asp Ala		
	565	570	575	
Leu Asp Asp Tyr Asp Glu	Arg Asn Thr Ala Leu	Leu Glu Val Tyr Ile		
	580	585	590	
Glu Glu Asn Phe Gly Gly	Asp Gln Thr Lys Phe	Lys Asp Tyr Ile Glu		
	595	600	605	
Thr Arg Lys Arg Val Leu	Gln Asp Lys Ile Gln	Ala Phe Pro Glu Gln		
	610	615	620	
Lys Gln Lys Gly Leu Ala	Tyr Arg Lys Ala Val	Gln Lys Leu Asn Asp		
625	630	635	640	
Ile Glu Glu Arg Gly Tyr	Glu Tyr Ser Ser Val	Gln Asp Phe Tyr Asp		
	645	650	655	
Arg Val Lys Ala Asp Ile	Arg Gln Ala Gly Ser	Val Asp Thr Tyr His		
	660	665	670	
Thr Leu Gln Asp Ala Leu	Asp Lys Ile Asp Gly	Ser Glu Ala Leu Ser		
	675	680	685	

Arg Gln Tyr Ala Glu Trp Lys Glu Ser Leu Ala Asp Lys Tyr Gly Ile
 690 695 700
 Lys Glu Val Leu Phe Lys Gly Tyr Thr Pro Asp Gly Ile Arg Ile Tyr
 705 710 715 720
 Leu Pro His Thr Leu Glu Asn Val Ser Gly Leu Met Lys Arg Gln Gly
 725 730 735
 Leu Ala Ala Ala Thr Gly Trp Gly Gly Ser Phe Ser Glu Phe Ala Ala
 740 745 750
 Ala Leu Met Lys Pro Val Gly Thr Leu Asp Gly Ile Arg Arg Gln Lys
 755 760 765
 Gly Arg Leu Thr Thr Asp His Ser Asp Leu Glu Ala Phe Arg Asp Lys
 770 775 780
 Trp Gln Glu Val Tyr Phe Asn Leu Gly Ile Lys Leu Asn Pro Gly Gly
 785 790 795 800
 Gly Thr Phe Asp Asp Thr Gly Leu Tyr Arg Val Gly Asp Ile Ala Leu
 805 810 815
 Lys Pro Asp Pro Gly Ser Phe Ala Lys Arg Glu Tyr Gly Val Glu Leu
 820 825 830
 Thr Gly Glu Asp Val Arg Gln Leu Lys Glu Met Val Asp Ala Ile Gln
 835 840 845
 Asn Glu Tyr Pro Ala Met Tyr Phe Glu Thr Lys Phe Glu Arg Pro Val
 850 855 860
 Tyr Leu Asn Glu Phe Val Ala Ala Val Val Pro Glu Asn Val Ser Glu
 865 870 875 880
 Asp Val Ser Lys Ala Val Arg Glu Ser Gly Leu Gln Val Phe Val Tyr
 885 890 895
 Lys Pro Lys Asp Glu Ser Ser Arg Asn Glu Ala Val Lys Leu Ala Ser
 900 905 910
 Glu Ile Lys Gly Val Arg Phe Arg Leu Ala Gly Gly Thr Gly Ala Phe
 915 920 925
 Thr Pro Ala Cys Thr Ala Ser Gly Gln Val Phe Leu Ser Asp Glu Arg
 930 935 940
 Met Ala Glu Leu Ser Arg His Ala Val Phe Leu Ala Arg Lys Gln His
 945 950 955 960
 Ile Pro Val Asn Ile Ile His Ser Ile Gly Glu Val Asp Ser Pro Lys
 965 970 975
 Val Arg Ala Leu Ile Ala Gly Gly Lys Asp Ile Arg Gly Trp Tyr Asp
 980 985 990
 Ile Pro Ser Asp Arg Ile Cys Leu Tyr Leu Pro Lys Ala Arg Gly Lys
 995 1000 1005
 Glu Asp Ile Glu Arg Thr Leu Leu His Glu Gly Val Gly His Tyr Gly
 1010 1015 1020
 Leu Arg Arg Leu Ala Gly Trp Lys His Met Asp Ala Phe Leu Asp Asp
 1025 1030 1035 1040
 Ile Phe Ala Gly Cys Gly Glu Lys Val Arg Gly Glu Ile Ile Arg Leu
 1045 1050 1055
 Ala Gly Thr Gly Lys Met Asp Ile Arg Thr Ala Thr Glu Glu Tyr Leu
 1060 1065 1070
 Ala Gln Met Ala Glu Ser Gly Thr Asp Ala Arg Val Trp Asp Lys Ile
 1075 1080 1085
 Arg Leu Ala Phe Arg Asn Leu Leu Arg Lys Leu Gly Phe Ser Ile Glu
 1090 1095 1100
 Val Asp Asp Arg Glu Leu Lys Gly Leu Leu Ala Ala Ser Arg Glu Asn
 1105 1110 1115 1120
 Leu Lys Arg Thr Ala Ala Thr Arg Ile Pro Glu Lys Ile Gln Thr Pro
 1125 1130 1135
 Lys Gly Glu Leu Glu Leu Thr Pro Gly Tyr Ala Ala Gly Ser Leu Arg
 1140 1145 1150
 Ser Lys Asp Gly Val Arg Asp Val Thr Pro Phe Leu Lys Glu Met Lys

1155	1160	1165
Arg Ala Gly Leu Lys Pro	Ala Ser Leu Ser Pro	Glu Glu Trp Lys Ser
1170	1175	1180
Leu Phe Ser Gly Lys Gly	Ile Ala Leu Pro Asp	Gly Arg Met Leu Met
1185	1190	1195
Ala Val Lys Glu Pro Ala	Gly Tyr Gly Leu Lys	Ile Thr Ala Pro Ala
1205	1210	1215
Leu Arg Ser Ile Lys Thr	Ala Glu Met Glu Ile	
1220	1225	

<210> 9513

<211> 814

<212> PRT

<213> B.fragilis

<400> 9513

Ile Met Asp Phe Asn Ser Tyr Lys Lys Val Ile Ser Asn Cys Asn His	
1 5 10 15	
Ile Val Lys Val Gly Met Val Ser Ala Tyr Ala Leu Phe Leu Gly Val	
20 25 30	
Asn Thr Ala Leu Ala Ser Val Thr Glu Tyr Met Asp Gln Lys Val Ser	
35 40 45	
Leu Lys Thr Gln Asn Tyr Thr Ile Glu Ser Val Ile Gln Gln Val Glu	
50 55 60	
Lys Gln Thr Asp Tyr Leu Phe Val Tyr Asp Lys Asn Asp Val Asp Val	
65 70 75 80	
Lys Arg Thr Val Tyr Val Asn Gly Ser Asn Thr Asp Val Ile Glu Leu	
85 90 95	
Leu Lys Gly Ile Phe Asp Asn Thr Asp Ile Asp Cys Lys Val Leu Gly	
100 105 110	
Asn Asn Ile Thr Leu Ser Lys Ile Thr Asn Val Ala Thr Arg Ile Ala	
115 120 125	
Gln Gln Asp Lys Lys Thr Ala Lys Gly Asn Val Ile Asp Ser Thr Gly	
130 135 140	
Glu Pro Val Ile Gly Ala Ser Val Val Glu Gln Gly Thr Thr Asn Gly	
145 150 155 160	
Thr Val Thr Asp Ile Asn Gly Asn Phe Thr Leu Asn Leu Ser Thr Pro	
165 170 175	
Asn Ala Lys Ile Glu Ile Ser Phe Ile Gly Tyr Lys Thr Gln Val Leu	
180 185 190	
Thr Ala Gln Phe Gly Lys Gln Met Ala Val Lys Leu Val Asp Asp Thr	
195 200 205	
Glu Leu Leu Asp Glu Val Val Val Val Gly Tyr Gly Ser Gln Lys Lys	
210 215 220	
Val Asn Met Thr Gly Ala Val Ala Thr Ile Asp Ser Lys Ser Leu Ala	
225 230 235 240	
Ser Arg Pro Ile Ser Asn Ile Ser Gln Gly Leu Gln Gly Leu Ala Pro	
245 250 255	
Gly Val Thr Val Thr Asn Ala Gly Gly Gln Pro Gly Gln Asp Thr Gly	
260 265 270	
Lys Ile Leu Ile Arg Gly Leu Gly Ser Phe Asn Ala Ser Ser Pro Met	
275 280 285	
Val Leu Ile Asp Gly Val Glu Gly Asp Met Asn Val Val Asp Pro Ser	
290 295 300	
Asp Ile Glu Ser Ile Ser Val Leu Lys Asp Ala Ser Ser Ala Ala Ile	
305 310 315 320	
Tyr Gly Ser Lys Ala Ala Asn Gly Val Ile Leu Ile Thr Thr Lys Arg	
325 330 335	
Gly Gln Ser Gly Lys Pro Lys Leu Thr Tyr Ser Ala Leu Phe Gly Trp	

<210> 9514
 <211> 140
 <212> PRT
 <213> B.fragilis

<400> 9514
 Pro Gln Thr Asn His Val Met Leu Asn Glu Asn Asn Arg Ser Ser Asp
 1 5 10 15
 Arg Ile Leu Thr Glu Arg Ile Leu Asp Asp Pro Asp Met Ile Leu Lys
 20 25 30
 Ile Glu Asn Pro Ser Leu Lys Gln Gln Met Ala Ala Val Gln Lys Lys
 35 40 45
 Pro Glu Leu Ile Ala Ser Leu Pro Leu Ala Gly Glu Lys Val Gln Leu
 50 55 60
 Ala Ala Val Ile Ala Cys Pro Glu Ser Ile Leu Leu Val Asp Thr Pro
 65 70 75 80
 Ala Pro Ala Ala Cys Phe Met Ala Val Glu Arg Met Leu Lys Glu Glu
 85 90 95
 Leu Leu Pro Val Pro Gly Val Leu Asn Ala Ala Arg Glu Leu Ile Leu
 100 105 110
 Gln Met Lys Lys Asp Lys Ala Asp Gly Lys Ser Ser Gly Ala Ala Ile
 115 120 125
 Glu Lys Phe Leu Asp Glu Val Lys Pro Ile Lys Asn
 130 135 140

<210> 9515
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 9515
 Lys Met Pro Glu Pro Ile Arg Pro Asp Thr Lys Asn Gly Lys Val Leu
 1 5 10 15
 Asn Leu Leu Pro Asn Val Ile Phe Tyr Gly Ile Phe Leu Leu Phe Tyr
 20 25 30
 Asn Ser Arg Ser Phe Phe Gln Thr Val Val Asp Pro Arg Leu Asn His
 35 40 45
 Ile Leu Tyr Lys Asn Val Ile Tyr Ile Val Ile Arg Lys Asn Phe Val
 50 55 60
 Arg Ala Pro Asn Asp Trp His Arg Asn Ser Phe Asn Cys Gln Pro Leu
 65 70 75 80
 Asp Ile Thr Glu

<210> 9516
 <211> 320
 <212> PRT
 <213> B.fragilis

<400> 9516
 Arg Ile Met Asp Asp Glu Leu Leu Ile Ala Tyr Phe Lys Gly Glu Val
 1 5 10 15
 Ser Asp Glu Glu Thr Gln Arg Ile Thr Glu Trp Ile Glu Ala Glu Ile
 20 25 30
 Glu His Gln Arg Tyr Tyr Gln Gln Leu Cys Arg Leu Phe Glu Met Ser
 35 40 45
 Tyr Trp Ile Glu Asp Met Pro Glu Gln Thr Glu Val Ala Leu Pro Gln
 50 55 60

Lys Ala Lys Ile Leu Pro Trp Lys His Tyr Ala Ile Ser Phe Met Lys
 65 70 75 80
 Val Ala Ala Ile Phe Val Leu Gly Phe Ala Leu His Phe Phe Leu Asn
 85 90 95
 Arg Gln Thr Thr Thr His His Glu Leu Gln His Gln Ile His Val
 100 105 110
 Pro Thr Gly Gln His Val Glu Ile Met Leu Ala Asp Gly Ser Lys Val
 115 120 125
 Trp Leu Asn Ser Gly Ser Thr Leu Thr Phe Pro Ser Lys Phe Asn Gly
 130 135 140
 Lys Lys Arg Leu Val Glu Leu Asp Gly Glu Gly Phe Phe Glu Val Lys
 145 150 155 160
 Ser Asp Lys Glu His Pro Phe Ile Val Ser Thr Ser Lys Tyr Gln Val
 165 170 175
 Lys Ala Val Gly Thr Ser Phe Asn Val Tyr Asp Tyr Gln Asp Ser Pro
 180 185 190
 Gln Phe Glu Ala Ala Leu Leu Asn Gly Lys Val Glu Val Thr Thr Asn
 195 200 205
 Ala Lys Lys Ser Ser Ala Val Ile Leu Thr Pro Asn Gln Arg Ala Ala
 210 215 220
 Leu Cys Gln Gly Val Leu Lys Val Lys Pro Ile Glu Asn Thr Asn Asn
 225 230 235 240
 Tyr Leu Trp Arg Lys Gly Ile Leu Tyr Phe Asn Glu Pro Leu Leu Glu
 245 250 255
 Val Phe Asp Lys Leu Gln Glu Tyr Tyr Asp Val Glu Phe Gln Ile Arg
 260 265 270
 Asn Thr Ser Leu Thr Arg Lys Ser Pro Tyr Cys Thr Gly Lys Phe Arg
 275 280 285
 Ala Lys Asp Gly Leu Glu His Ile Ile Arg Val Leu Lys Glu Thr Asn
 290 295 300
 His Phe Asp Tyr Gln Ile Asp Tyr Glu Asn Lys Lys Ile Ile Ile Leu
 305 310 315 320

<210> 9517

<211> 119

<212> PRT

<213> B.fragilis

<400> 9517

Ile Met Asn Met Asp Lys Asn Asp Ser Phe Asp Gly Pro Leu Gln Glu
 1 5 10 15
 Gly Arg His Thr Thr Leu Arg Ser Phe Ser Trp Gly Asn Arg Glu Phe
 20 25 30
 Thr Ile Ser Ser Asp Lys Ile Ser Leu Tyr Val Gly Gly Ile Pro Tyr
 35 40 45
 Asp Thr Lys Pro Met Leu Asp Ile Leu Arg Gly Ser Gly Val Asp Pro
 50 55 60
 Gly Lys Leu Ser Pro Ala Arg Trp Ile Ser Leu Leu Arg Gly Gln Pro
 65 70 75 80
 Thr Arg Leu Pro Gly Cys Glu Lys Pro Phe Met Leu Val Lys Ala Pro
 85 90 95
 Ser Gly Tyr Thr Leu Lys Cys Pro Gly Asn Asn Pro Gly Ala Gly Thr
 100 105 110
 Arg Leu Phe Gln Pro Glu Met
 115

<210> 9518

<211> 548

<212> PRT

<213> B.fragilis

<400> 9518

Leu Val Asp Thr Met Lys Lys Ala Val Ile Leu Phe Ser Leu Phe Cys
 1 5 10 15
 Phe Leu Cys Ala Ile Pro Val Val Gln Ala Ala Asp Thr Ile Phe Val
 20 25 30
 Arg Glu Thr Arg Ile Pro Ile Leu Ile Glu Arg Gln Asp Asn Val Leu
 35 40 45
 Phe Tyr Leu Arg Leu Asp Ala Lys Glu Ser Gln Thr Leu Asn Asp Val
 50 55 60
 Val Leu Asn Leu Gly Glu Gly Val Asn Leu Ser Glu Ile Gln Ser Ile
 65 70 75 80
 Lys Leu Tyr Tyr Gly Gly Thr Glu Ala Leu Gln Asp Ser Gly Lys Lys
 85 90 95
 Arg Phe Ala Pro Val Gly Tyr Ile Ser Ser Asn Thr Pro Gly Lys Thr
 100 105 110
 Leu Ala Ala Asn Pro Ser Tyr Ser Ile Lys Lys Ser Glu Val Thr Asn
 115 120 125
 Pro Gly Asn Gln Val Val Leu Lys Gly Asp Gln Lys Leu Phe Pro Gly
 130 135 140
 Ile Asn Tyr Phe Trp Ile Ser Leu Gln Met Lys Pro Gly Thr Ser Leu
 145 150 155 160
 Thr Ser Lys Val Thr Ala Asp Ile Ala Ser Ile Thr Leu Asp Gly Lys
 165 170 175
 Lys Ala Leu Leu Asp Val Val Ser Glu Asn Gly Ile Glu His Arg Met
 180 185 190
 Gly Val Gly Val Arg His Ala Gly Asp Asp Asn Ser Ala Ala Phe Arg
 195 200 205
 Ile Pro Gly Leu Val Thr Thr Asn Lys Gly Thr Leu Leu Gly Val Tyr
 210 215 220
 Asp Val Arg Tyr Asn Ser Ser Val Asp Leu Gln Glu His Val Asp Val
 225 230 235 240
 Gly Leu Ser Arg Ser Thr Asp Gly Gly Lys Thr Trp Glu Lys Met Arg
 245 250 255
 Leu Pro Leu Ala Phe Gly Glu Phe Gly Gly Leu Pro Ala Gly Gln Asn
 260 265 270
 Gly Val Gly Asp Pro Ser Ile Leu Val Asp Thr Lys Thr Asn Asn Val
 275 280 285
 Trp Val Val Ala Ala Trp Thr His Gly Met Gly Asn Gln Arg Ala Trp
 290 295 300
 Trp Ser Ser His Pro Gly Met Asp Met Asn His Thr Ala Gln Leu Val
 305 310 315 320
 Leu Ala Lys Ser Thr Asp Asp Gly Lys Thr Trp Ser Ala Pro Ile Asn
 325 330 335
 Ile Thr Glu Gln Val Lys Asp Pro Ser Trp Tyr Phe Leu Leu Gln Gly
 340 345 350
 Pro Gly Arg Gly Ile Thr Met Ser Asp Gly Thr Leu Val Phe Pro Thr
 355 360 365
 Gln Phe Ile Asp Ser Thr Arg Val Pro Asn Ala Gly Ile Met Tyr Ser
 370 375 380
 Lys Asp Gly Gly Lys Asn Trp Lys Met His Asn Tyr Ala Arg Thr Asn
 385 390 395 400
 Thr Thr Glu Ala Gln Val Ala Glu Val Glu Pro Gly Val Leu Met Leu
 405 410 415
 Asn Met Arg Asp Asn Arg Gly Gly Ser Arg Ala Val Ala Ile Thr Lys
 420 425 430
 Asp Leu Gly Lys Thr Trp Thr Glu His Glu Ser Ser Arg Lys Ala Leu
 435 440 445

Pro Glu Ser Val Cys Met Ala Ser Leu Ile Ser Val Lys Ala Lys Asp
 450 455 460
 Asn Val Leu Gly Lys Asp Leu Leu Ile Phe Ser Asn Pro Asn Thr Thr
 465 470 475 480
 Lys Gly Arg Tyr Asn Thr Thr Ile Lys Ile Ser Leu Asp Gly Gly Val
 485 490 495
 Thr Trp Ser Pro Glu His Gln Leu Leu Leu Asp Glu Gly Asn Asn Trp
 500 505 510
 Gly Tyr Ser Cys Leu Ser Met Ile Asp Lys Glu Thr Ile Gly Ile Leu
 515 520 525
 Tyr Glu Ser Ser Val Ala His Met Thr Phe Gln Ala Val Lys Leu Lys
 530 535 540
 Asp Ile Ile Lys
 545

<210> 9519

<211> 532

<212> PRT

<213> B.fragilis

<400> 9519

Leu Tyr Met Thr Asn Thr Asn Ser Ile Met Lys Lys Ile Phe Thr Tyr
 1 5 10 15
 Met Leu Ala Gly Leu Ser Leu Leu Leu Phe Ser Arg Cys Asp Ala Leu
 20 25 30
 Asp Ile Asp Pro Thr Ser Ser Ile Ala Asp Ser Asn Tyr Trp Lys Thr
 35 40 45
 Glu Ala Gln Phe Ser Thr Phe Asn Val Gly Leu His Ala Leu Leu Arg
 50 55 60
 Glu Cys Ser Phe Asn Phe Phe Leu Leu Gly Glu Pro Arg Ala Asp Ile
 65 70 75 80
 Tyr Gly Asp Val Pro Phe Gly Gly Glu Ala Thr Gln Gly Met Glu Arg
 85 90 95
 Leu Pro Phe Asn Thr Ile Asn Lys Glu Asn Thr Gly Ile Ser Asn Phe
 100 105 110
 Ala Gly Met Tyr Lys Val Ile Asn Gln Ile Asn Leu Met Ile Ala Lys
 115 120 125
 Thr Lys Glu Thr Thr Val Leu Ser Glu Ala Gly Lys Asn Tyr Tyr Leu
 130 135 140
 Gly Glu Ala Tyr Gly Met Arg Ala Tyr Leu Tyr Phe His Leu Leu Arg
 145 150 155 160
 Ser Trp Gly Asp Val Ile Leu Tyr Leu Asp Tyr Thr Asn Gly Ala Ser
 165 170 175
 Leu Asp Leu Ser Asn Leu Ser Lys Ala Ala Ser Pro Ala Glu Glu Val
 180 185 190
 Met Lys Gln Ile Lys Glu Asp Ile Thr Ala Ser Glu Lys Gly Phe Gly
 195 200 205
 Ser Asp Tyr Ser Phe Lys Tyr Gly Arg Tyr Tyr Trp Ser Met Ala Ala
 210 215 220
 Thr Gln Met Leu Lys Gly Glu Val Tyr Leu Trp Ser Gly Arg Gln Met
 225 230 235 240
 Gly Gly Gly Thr Ala Asp Tyr Thr Thr Ala Lys Thr Ala Leu Gln Ser
 245 250 255
 Ile Val Ser Asn Ala Asn Val Ser Leu Gln Asp Asp Phe Ser Lys Val
 260 265 270
 Phe Ala Tyr Asn Asn Lys Asp Asn Ser Glu Ile Ile Phe Ser Ile Arg
 275 280 285
 Asn Ala Lys Asp Glu Tyr Asn Met Trp Asp Asp Lys Phe Arg Gln Asn
 290 295 300

Leu Val Pro Gln Gln Ala Tyr Met Thr Ser Thr Tyr Cys Asn Lys Glu
 305 310 315 320
 Gly Val Ser Phe Lys Asp Leu Pro Glu Gly Gln Leu Asn Gly Leu Ile
 325 330 335
 Arg Leu Gln Ile Arg Tyr Asp Leu Tyr Asn Lys Ala Phe Arg Asp Gly
 340 345 350
 Asp Thr Arg Lys Asp Ala Ser Met Thr Ala Val Tyr Gln Lys Gln Gln
 355 360 365
 Asp Gly Thr Val Lys Tyr Ile Ala Pro Phe Cys Asn Lys Tyr Gln Gly
 370 375 380
 Val Leu Leu Asp Gly Ala Ser Gln Arg Ser Phe Leu Asn Asp Tyr Pro
 385 390 395 400
 Ile Tyr Arg Tyr Ala Asp Cys Leu Leu Leu Leu Ala Glu Ala Lys Ala
 405 410 415
 Leu Leu Gly Glu Asp Pro Thr Ala Glu Ile Asn Gln Val Arg Glu Arg
 420 425 430
 Ala Tyr Gly Lys Glu Phe Phe Glu Thr Asn Lys Ala Thr Leu Ala Tyr
 435 440 445
 Pro Asn Asp Lys Gly Asp Phe Tyr Thr Asp Asn Lys Tyr Met Ser Gly
 450 455 460
 Asp Glu Asp Pro Leu Glu Ala Ile Leu Lys Glu Arg Met Arg Glu Phe
 465 470 475 480
 Met Phe Glu Gly Lys Arg Trp Tyr Asp Leu Arg Leu Leu Gly Ala Asp
 485 490 495
 Tyr Val Thr Lys Arg Thr Ser Ala Val Ala Thr Arg Leu Leu Trp Pro
 500 505 510
 Ile Asn Glu Ser Val Leu Thr Asp Asn Pro Ala Leu Lys Gln Thr Pro
 515 520 525
 Gly Tyr Gln Asn
 530

<210> 9520

<211> 93

<212> PRT

<213> B.fragilis

<400> 9520

Asp Arg Arg Ala Ala Val Asp Ala Ile Asn Gly Val Asn Ile Asp Leu
 1 5 10 15
 Ser Pro Pro Ser Met Ala Gly Ala Val Gly Met Arg Glu Trp Pro His
 20 25 30
 Leu Leu Ile Val Leu Ser Val Glu Glu Glu Pro Asp Gly Arg Ser Arg
 35 40 45
 Leu Phe Ala Leu Ala Ala Trp Val His Glu Arg Pro Ser Ala Phe Thr
 50 55 60
 Lys Asp Ala Cys Ala Ala Thr Arg Asp Thr Ala Pro Arg Ala Ala Gly
 65 70 75 80
 Lys Thr Leu His Ser Ala Gln Leu Leu Met Lys Thr Arg
 85 90

<210> 9521

<211> 1083

<212> PRT

<213> B.fragilis

<400> 9521

Asp Cys Thr His Phe Gln Val Phe Ile Phe Met Glu Phe Arg Arg Asp
 1 5 10 15
 Asn Phe Pro Phe Leu Leu Thr Lys Asn Gln Phe Met Lys Lys Val Leu

Thr	Thr	Gln	Tyr	Gln	His	Trp	Glu	Val	Leu	Pro	Val	Tyr	Ala	Tyr	Asn
			500					505					510		
Val	Ala	Gly	Asp	Pro	Tyr	Tyr	Thr	Val	Trp	Asp	Met	Gly	Tyr	Gly	Ser
		515					520					525			
Tyr	Ala	Ala	Gly	Ser	Ser	Arg	Val	Asn	Glu	Tyr	Ser	Trp	Lys	Glu	Asn
	530					535					540				
Tyr	Tyr	Thr	Thr	Asn	Ile	Tyr	Ser	Asp	Tyr	Phe	Lys	Gln	Phe	Asp	Asn
545					550					555					560
Gly	His	Tyr	Phe	Lys	Val	Met	Ala	Gly	Phe	Asn	Ala	Glu	Leu	Tyr	Lys
				565					570					575	
Thr	Arg	Asn	Ile	Thr	Ala	Glu	Lys	Asn	Thr	Leu	Ile	Thr	Pro	Gly	Val
			580					585					590		
Pro	Thr	Ile	Asn	Thr	Ala	Thr	Asp	Asp	Pro	Gln	Ala	Tyr	Gly	Gly	Tyr
		595					600					605			
Ala	Asp	Asn	Ser	Val	Ala	Gly	Phe	Phe	Ala	Arg	Val	Asn	Trp	Ser	Tyr
	610					615					620				
Lys	Asp	Arg	Tyr	Met	Phe	Glu	Ala	Asn	Gly	Arg	Tyr	Asp	Gly	Ser	Ser
625					630					635					640
Arg	Phe	Val	Gly	Lys	Glu	Arg	Trp	Gly	Phe	Phe	Pro	Ser	Phe	Ser	Ala
				645					650					655	
Gly	Trp	Asn	Ile	Ala	Arg	Glu	Pro	Phe	Met	Glu	Ser	Phe	Ala	Glu	Lys
			660					665					670		
Ile	Asn	Met	Gly	Ser	Leu	Lys	Leu	Arg	Ala	Ser	Trp	Gly	Gln	Leu	Gly
		675					680					685			
Asn	Thr	Asn	Thr	Asn	Asp	Ala	Trp	Tyr	Pro	Phe	Tyr	Gln	Thr	Met	Pro
	690					695					700				
Val	Gly	Ser	Asn	Tyr	Gly	Trp	Leu	Val	Asn	Gly	Glu	Arg	Pro	Asn	Tyr
705					710					715					720
Ala	Thr	Asn	Pro	Gly	Ile	Val	Ser	Ser	Lys	Lys	Thr	Trp	Glu	Thr	Val
				725					730					735	
Glu	Thr	Trp	Asp	Val	Gly	Leu	Asp	Trp	Ser	Phe	Phe	Asn	Asn	Arg	Leu
			740					745					750		
Ser	Gly	Ser	Phe	Asp	Tyr	Phe	Val	Arg	Tyr	Thr	Tyr	Asp	Met	Ile	Gly
		755					760					765			
Pro	Ala	Pro	Glu	Leu	Ser	Ser	Leu	Leu	Gly	Thr	Ser	Val	Pro	Lys	Ile
	770					775						780			
Asn	Asn	Ser	Asp	Met	Lys	Ser	Tyr	Gly	Phe	Glu	Leu	Glu	Val	Asn	Trp
785					790					795					800
Arg	Asp	Arg	Ile	Gly	Glu	Val	Ser	Tyr	Gly	Ala	Lys	Phe	Val	Leu	Ser
				805					810					815	
Asp	Asp	Gln	Gln	Lys	Ile	Leu	Arg	Tyr	Pro	Asn	Asp	Ser	Tyr	Asp	Val
			820					825					830		
Gly	Ser	Tyr	Tyr	Lys	Gly	Glu	His	Leu	Asn	Asp	Ile	Trp	Gly	Leu	Thr
		835					840					845			
Thr	Ile	Gly	Ile	Ala	Lys	Ser	Gln	Glu	Glu	Met	Asp	Ala	His	Leu	Ala
	850					855					860				
Lys	Val	Asp	Gln	Ser	Ser	Val	Gly	Thr	Asn	Trp	Gly	Val	Gly	Asp	Ile
865					870					875					880
Met	Tyr	Ala	Asp	Leu	Asp	Gly	Asp	Gly	Lys	Ile	Ser	Asn	Gly	Thr	Asn
				885					890					895	
Lys	Leu	Gly	Asp	Thr	Gly	Asp	Tyr	Arg	Ile	Ile	Gly	Asn	Ser	Thr	Pro
			900					905					910		
Arg	Phe	Lys	Tyr	Gly	Ile	Thr	Leu	Asp	Ala	Ala	Trp	Lys	Gly	Phe	Asp
		915					920						925		
Phe	Ser	Ile	Phe	Met	Gln	Gly	Ile	Gly	Lys	Arg	Asp	Leu	Trp	Leu	Asp
	930					935					940				
Gly	Cys	Tyr	Phe	Trp	Gly	Ala	Asn	Gly	Gln	Gly	Asn	Glu	Trp	Gln	Ser
945					950					955					960
Thr	Gly	Phe	Ala	Glu	His	Trp	Asp	Phe	Phe	Arg	Pro	Glu	Gly	Asp	Pro

965 970 975
 Leu Gly Ala Asn Leu Asn Ser Tyr Tyr Pro Arg Val Asn Phe Ser Gly
 980 985 990
 Asp Arg Asn Thr Lys Val Gln Thr Arg Tyr Leu Gln Asn Gly Ala Tyr
 995 1000 1005
 Leu Arg Leu Lys Asn Val Gln Leu Gly Tyr Thr Leu Pro Arg Val Trp
 1010 1015 1020
 Thr Glu Lys Ala Gly Ile Ser Ser Val Arg Val Tyr Val Ser Gly Asp
 1025 1030 1035 1040
 Asn Leu Ala Thr Ile Thr Ser Leu Ser Lys Ile Phe Asp Pro Glu Ala
 1045 1050 1055
 Thr Gly Ser Leu Ala Gly Thr Gly Ser Gly Lys Leu Tyr Pro Leu Gln
 1060 1065 1070
 Arg Val Ile Ser Val Gly Val Asn Val Asn Phe
 1075 1080

<210> 9522
 <211> 861
 <212> PRT
 <213> B.fragilis

<400> 9522
 Lys Ser Glu Gln Phe Met Met Lys Lys Leu Leu Tyr Gly Leu Val Cys
 1 5 10 15
 Cys Cys Ser Leu Ala Tyr Gly Gln Asn Gln Asp Thr Ser Asp Val Leu
 20 25 30
 Met Leu Asn Asp Asp Trp Ser Phe Ser Gln Val Gly Thr Glu Lys Trp
 35 40 45
 Leu Thr Ala Thr Val Pro Gly Thr Val His Gln Asp Leu Ile His His
 50 55 60
 Lys Leu Leu Pro Asp Pro Phe Tyr Gly Thr Asn Glu Lys Lys Ile Gln
 65 70 75 80
 Trp Val Glu Asp Glu Asp Trp Glu Tyr Lys Thr Cys Phe Val Val Thr
 85 90 95
 Glu Glu Gln Leu Lys Arg Asp Ala Ala Gln Leu Phe Phe Glu Gly Leu
 100 105 110
 Asp Thr Tyr Ala Asp Val Tyr Leu Asn Gly Ser Leu Val Leu Lys Ser
 115 120 125
 Asp Asn Met Phe Val Gly Tyr Ala Val Pro Val Lys Gln Val Leu Arg
 130 135 140
 Lys Gly Glu Asn Leu Leu His Val Tyr Phe His Ser Pro Ile Lys Gln
 145 150 155 160
 Thr Leu Pro Gln Trp Ser Ser Asn Gly Phe Asn Tyr Pro Ala Asp Asn
 165 170 175
 Asp His His Glu Lys Arg Leu Ser Val Phe Thr Arg Lys Ala Pro Tyr
 180 185 190
 Ser Tyr Gly Trp Asp Trp Gly Ile Arg Met Val Thr Ser Gly Ile Trp
 195 200 205
 Arg Pro Val Thr Leu Arg Phe Tyr Asp Val Ala Thr Ile Ala Asp Tyr
 210 215 220
 His Val Lys Gln Leu Ser Leu Thr Asp Gln Val Ala Lys Leu Ser Asn
 225 230 235 240
 Glu Leu Glu Ile Asn Ser Ile Ser Glu Lys Glu Lys Ser Ala Glu Val
 245 250 255
 Leu Ile Ser Tyr Ser Leu Gln Gly Gly Lys Glu Val Thr Val Lys Glu
 260 265 270
 Asn Val Thr Leu Lys Pro Gly Leu Asn Lys Ile His Ile Pro Leu Asp
 275 280 285
 Ile Gln Asn Pro Val Arg Trp Met Pro Asn Gly Trp Gly Glu Pro His

290	295	300
Leu Tyr Asp Phe Ser Ala Gln Val Ile Cys Asp Gly Lys Thr Ile Ala		
305	310	315
Ser Arg Gln His Arg Ile Gly Leu Arg Thr Ile Arg Val Val Asn Glu		
	325	330
Lys Asp Lys Glu Gly Glu Ser Phe Tyr Phe Glu Val Asn Gly Ile Pro		
	340	345
Met Phe Ala Lys Gly Ala Asn Tyr Ile Pro Asp Asp Ala Leu Leu Pro		
	355	360
Cys Ile Thr Thr Glu Arg Tyr Lys Thr Leu Phe Arg Asp Met Lys Glu		
	370	375
Ala Asn Met Asn Met Val Arg Ile Trp Gly Gly Gly Thr Tyr Glu Asp		
385	390	395
Asp Arg Phe Tyr Asp Leu Ala Asp Glu Asn Gly Ile Leu Val Trp Gln		
	405	410
Asp Phe Met Phe Ala Cys Thr Ala Tyr Pro Ser Asp Pro Thr Phe Leu		
	420	425
Lys Arg Val Glu Glu Glu Ala Glu Tyr Asn Ile Lys Arg Leu Arg Asn		
	435	440
His Ala Ser Leu Ala Met Trp Cys Gly Asn Asn Glu Ile Leu Glu Gly		
	450	455
Leu Lys Tyr Trp Gly Trp Gln Lys Asn Tyr Thr Pro Glu Val Tyr Glu		
465	470	475
Asn Met Phe Arg Gly Tyr Asp Lys Leu Phe Arg Gly Leu Leu Pro Ala		
	485	490
Lys Val Gln Glu Leu Asp Glu Gly Arg Phe Tyr Lys His Ser Ser Pro		
	500	505
Tyr Phe Ala Asn Trp Gly Arg Pro Glu Ser Trp Gly Ile Gly Asp Ser		
	515	520
His Asn Trp Gly Val Trp Tyr Gly Lys Lys Thr Phe Glu Ser Leu Asp		
	530	535
Thr Asp Leu Pro Arg Phe Met Ser Glu Phe Gly Phe Gln Ser Phe Pro		
545	550	555
Glu Met Lys Thr Ile Ala Thr Phe Ala Ala Pro Glu Asp Tyr Gln Ile		
	565	570
Glu Ser Glu Val Met Asn Gly His Gln Lys Ser Ser Ile Gly Asn Asp		
	580	585
Leu Ile Arg Thr Tyr Met Glu Arg Asp Tyr Ile Val Pro Glu Lys Phe		
	595	600
Glu Asp Phe Val Tyr Ile Gly Leu Val Leu Gln Gly His Gly Met Arg		
	610	615
His Gly Met Glu Ala His Arg Arg Asn Arg Pro Tyr Cys Met Gly Thr		
625	630	635
Leu Tyr Trp Gln Leu Asn Asp Ser Trp Pro Val Val Ser Trp Ser Ser		
	645	650
Ile Asp Tyr Tyr Gly Asn Trp Lys Ala Leu His Tyr Gln Ala Lys Arg		
	660	665
Ala Phe Ala Pro Leu Leu Val Asn Ala Ile Gln Glu Gly Asp Ser Leu		
	675	680
Asn Ile Tyr Leu Ile Ser Asp Met Leu Glu Lys Gln Ser Gln Leu Thr		
	690	695
Leu Glu Met Lys Val Ile Asp Phe Asn Gly Lys Thr Leu Asp Lys Glu		
705	710	715
Val Ile Lys Ala Val Glu Val Ala Met Asn Thr Ser Ser Cys Ile Val		
	725	730
Arg Lys Pro Leu Asp Thr Trp Val Asn Pro Glu Gln Arg Lys Ser Ser		
	740	745
Phe Leu Leu Leu Ser Leu Lys Asp Lys Ser Gly Arg Lys Val Ala Glu		
	755	760
		765

Glu	Val	Tyr	Phe	Phe	Asp	Lys	Thr	Lys	Asn	Leu	Glu	Leu	Pro	Gln	Thr
770						775					780				
Ala	Ile	Ser	Met	Lys	Val	Lys	Gln	Leu	Asp	Gly	Lys	Cys	Glu	Leu	Thr
785					790					795					800
Leu	Ser	Ser	Pro	Lys	Leu	Ala	Lys	Asp	Val	Phe	Val	Gln	Ile	Pro	Val
				805					810					815	
Gln	Gly	Ala	Arg	Phe	Thr	Asp	Asn	Phe	Phe	Asp	Leu	Leu	Pro	Gly	Glu
			820					825					830		
Asn	Lys	Lys	Ile	Thr	Ile	Thr	Ser	Pro	Glu	Ile	Lys	Lys	Gly	Glu	Ser
		835					840					845			
Leu	Asn	Ile	Thr	Val	Lys	His	Val	Arg	Asp	Thr	Tyr	Asn			
	850					855					860				

<210> 9523

<211> 549

<212> PRT

<213> B.fragilis

<400> 9523

Lys	Ile	Ile	Asn	Met	Lys	Arg	Ala	Lys	Ser	Thr	Ile	Leu	Tyr	Ser	Leu
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Leu	Val	Ala	Phe	Val	Gly	Val	Leu	Tyr	Thr	Ser	Cys	Ala	Asp	Lys	Leu
		20					25					30			
Asp	Leu	Ser	Pro	Ile	Asp	Tyr	Tyr	Gly	Ser	Gly	Ser	Tyr	Trp	Lys	Thr
		35				40						45			
Glu	Ala	His	Val	Ile	Gly	Tyr	Met	Asp	Gly	Ile	His	Lys	His	Leu	Arg
	50					55					60				
Asp	Ala	Thr	Phe	Gln	His	Thr	Phe	Ile	Trp	Gly	Glu	Ala	Arg	Gly	Gly
65				70					75					80	
Ala	Leu	Ile	Thr	Ser	Gly	Thr	Ser	Ala	Asp	Gly	Met	Gly	Met	Leu	Tyr
				85				90					95		
Gly	Asp	Ile	Lys	Leu	Gln	Asn	Phe	Asp	Glu	Asp	His	Thr	Gly	Gly	Ile
			100					105					110		
Lys	Lys	Phe	Gly	Asp	Ile	Phe	Gly	Arg	Leu	Thr	Asn	Leu	Asn	Leu	Phe
		115					120					125			
Ile	Ala	Arg	Val	Thr	Asp	Ala	Thr	Tyr	Met	Asp	Asp	Val	Lys	Lys	Gly
	130					135					140				
Tyr	Tyr	Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg	Ala	Phe	Tyr	Tyr	Phe	Asp
145				150					155					160	
Leu	Tyr	Arg	Thr	Tyr	Gly	Gly	Val	Pro	Leu	Arg	Leu	Thr	Ala	Asp	Val
			165					170						175	
Val	Glu	Gly	Val	Ile	Asp	Pro	Asn	Lys	Leu	Tyr	Met	Ala	Arg	Ala	Thr
			180					185					190		
Pro	Lys	Glu	Val	Met	Asp	Gln	Ile	Lys	Lys	Asp	Leu	Asp	Lys	Ser	Met
	195						200					205			
Glu	Ser	Phe	Gly	Asp	Asn	Asn	Ser	Phe	Asp	Pro	Asn	Asn	Arg	Gly	Asn
	210				215						220				
Lys	Lys	Gly	Tyr	Trp	Ser	Lys	Ala	Ala	Thr	Glu	Cys	Leu	Met	Gly	Glu
225				230						235				240	
Val	Tyr	Leu	Trp	Ile	Ser	Lys	Val	Ser	Thr	Gly	Asp	Asp	Ala	Ala	Asn
			245						250				255		
Glu	Ala	Asn	Leu	Glu	Ile	Ala	Lys	Thr	His	Leu	Gln	Asn	Val	Ile	Asn
		260					265						270		
Asn	Tyr	Gly	Leu	Lys	Met	Leu	Asp	Phe	Ser	Ser	Val	Phe	Asp	Ala	
	275					280						285			
Lys	Asn	Gly	Lys	Gly	Asn	Ser	Glu	Ile	Ile	Phe	Ala	Val	Arg	Tyr	Met
	290				295						300				
Glu	Gly	Glu	Ala	Gly	Asn	Asn	Asn	Asn	Leu	Phe	Thr	Tyr	Ala	Met	Ala
305				310						315					320

Thr Gly Ser Thr Lys Asp Asn Tyr Leu Ala Asn Gly Glu Lys Phe Leu
 325 330 335
 Asp Ala Leu Asn Ile Ala Asn Thr Gly Ser Gln Gln Leu Glu Tyr Lys
 340 345 350
 His Glu Ile Tyr Asn Ser Phe Asp Val Ala Asp Thr Arg Arg Glu Ala
 355 360 365
 Thr Phe Ile Ala Ser Tyr Ser Lys Asn Thr Glu Thr Lys Glu Leu Thr
 370 375 380
 Leu Arg Gly Thr His Val Arg Lys Asn Ile Gly Tyr Val Asn Ala Gln
 385 390 395 400
 Gly Ser Arg Ile Tyr Cys Gly Asp Tyr Ile Ile Tyr Arg Leu Pro Leu
 405 410 415
 Val Tyr Leu Met Leu Ala Glu Ile Glu Asn Met Gln Gly Gly Asp Val
 420 425 430
 Ala Lys Tyr Ile Asn Leu Val Arg Glu Arg Ala Tyr Ser Thr Asn Trp
 435 440 445
 Asp Lys Ala Ile Tyr Gly Tyr Thr Asn Ala Asp Phe Thr Thr Asn Glu
 450 455 460
 Leu Ala Ile Leu His Glu Lys Asp Lys Glu Phe Ile Gln Glu Gly Gln
 465 470 475 480
 Arg Trp Trp Asp Ile Arg Arg Met Thr Leu Thr Lys Gly Gly Lys His
 485 490 495
 Leu Val Phe Val Lys Glu Gly Ser Ile Gly Thr Asp Met Pro Thr Leu
 500 505 510
 Asp Glu Ala Thr Glu Ala His Lys Val Leu Trp Pro Val Asp Lys Asp
 515 520 525
 Leu Leu Gly Asn Asp Pro Leu Ile Tyr Gln Thr Pro Gly Tyr Ala Thr
 530 535 540
 Tyr Lys Lys Ala Glu
 545

<210> 9524

<211> 691

<212> PRT

<213> B.fragilis

<400> 9524

Ala Met Ile Lys Ile Leu Phe Leu Ser Leu Phe Leu Met Val Cys Thr
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 Ile Leu Ser Ala Gln Lys Arg Val Lys Val Ala Cys Val Gly Asn Ser
 20 25 30
 Ile Thr Tyr Gly Tyr Thr Leu Pro Asn Pro Ala Thr Asp Ser Tyr Pro
 35 40 45
 Ser Gln Leu Gln Gln Leu Leu Gly Glu Thr Tyr Glu Val Gly Asn Phe
 50 55 60
 Gly Lys Ser Gly Ala Thr Leu Leu Asn Lys Gly His Arg Pro Tyr Met
 65 70 75 80
 Gln Gln Glu Asp Phe Lys Lys Ala Ile Ala Phe Ala Gly Asp Ile Val
 85 90 95
 Val Ile His Leu Gly Ile Asn Asp Thr Asp Pro Arg Asp Trp Pro Asn
 100 105 110
 Tyr Arg Asp Ser Phe Val Lys Asp Tyr Leu Ala Leu Ile Asp Ser Phe
 115 120 125
 Arg Val Ala Asn Pro Lys Cys His Ile Ile Ile Ala Arg Leu Thr Pro
 130 135 140
 Ile Ala Asp Arg His Pro Arg Phe Glu Ser Gly Thr Arg Asp Trp His
 145 150 155 160
 Gly Glu Ile Gln Gln Ser Ile Glu Thr Ile Ala Lys Tyr Ala Gly Val
 165 170 175

Gln	Leu	Met	Asp	Phe	His	Glu	Pro	Leu	Tyr	Pro	Tyr	Pro	Tyr	Leu	Leu
			180					185						190	
Pro	Asp	Ala	Val	His	Pro	Asn	Val	Glu	Gly	Ala	Gly	Ile	Leu	Ala	Lys
		195					200					205			
Thr	Val	Tyr	Ser	Ala	Ile	Thr	Gly	Asp	Phe	Gly	Gly	Leu	His	Leu	Ser
	210					215					220				
Glu	Leu	Tyr	Thr	Asp	Asn	Met	Val	Leu	Gln	His	Gly	Glu	Pro	Leu	Ala
225					230					235					240
Ile	Arg	Gly	Lys	Ala	Asn	Ala	Gly	Glu	Lys	Val	Thr	Val	Ser	Ile	Ala
				245					250						255
Lys	Gln	Lys	Leu	Thr	Ala	Lys	Ala	Ala	Ser	Asn	Gly	Asp	Trp	Thr	Val
			260					265					270		
Thr	Ile	Gln	Pro	Leu	Lys	Ala	Gly	Gly	Pro	Tyr	Thr	Leu	Thr	Val	Ser
		275					280					285			
Ala	Gly	Lys	Gln	Lys	Gln	Thr	Phe	Asn	Asn	Val	Leu	Ala	Gly	Glu	Val
	290					295					300				
Trp	Leu	Cys	Ser	Gly	Gln	Ser	Asn	Met	Glu	Phe	Tyr	Leu	Ser	Trp	Ser
305					310					315					320
Lys	Thr	Ala	Lys	Arg	Asp	Ile	Pro	Gln	Ala	Ala	Asn	Asp	Gln	Ile	Arg
				325					330						335
Leu	Phe	Asp	Met	Lys	Ala	Arg	Trp	Arg	Thr	Asp	Ala	Val	Glu	Trp	Asp
		340						345					350		
Ala	Ser	Val	Leu	Asp	Ser	Leu	Asn	His	Leu	Gln	Tyr	Tyr	Lys	Asp	Thr
		355					360					365			
Glu	Trp	Thr	Val	Cys	Ser	Pro	Ala	Thr	Ala	Gly	Ser	Phe	Ser	Ala	Val
	370					375					380				
Ala	Tyr	Tyr	Phe	Gly	Lys	Met	Leu	Gln	Asp	Ser	Leu	Lys	Val	Pro	Val
385					390					395					400
Gly	Leu	Ile	Cys	Asn	Ala	Ile	Gly	Gly	Ser	Pro	Thr	Glu	Ala	Trp	Val
				405					410						415
Asp	Arg	Ser	Thr	Leu	Glu	Tyr	Lys	Phe	Pro	Ala	Ile	Leu	Arg	Asn	Trp
			420					425					430		
Thr	Gln	Asn	Asp	Phe	Ile	Gln	Asp	Trp	Val	Arg	Gly	Arg	Ala	Ala	Leu
		435					440					445			
Asn	Val	Lys	Lys	Ala	Thr	Asn	Lys	Gln	Gln	Arg	His	Pro	Tyr	Glu	Pro
	450					455					460				
Cys	Tyr	Leu	Tyr	Glu	Ala	Gly	Ile	Arg	Pro	Leu	Glu	Gln	Tyr	Pro	Ile
465					470					475					480
Lys	Gly	Ile	Ile	Trp	Tyr	Gln	Gly	Glu	Ser	Asn	Ala	His	Asn	Arg	Glu
				485					490					495	
Ala	His	Glu	Lys	Leu	Phe	Lys	Leu	Leu	Val	Glu	Ser	Trp	Arg	Lys	Asn
			500					505					510		
Trp	Glu	Asn	Glu	Asn	Leu	Pro	Phe	Tyr	Tyr	Val	Gln	Leu	Ser	Ser	Ile
		515					520					525			
Asn	Arg	Pro	Ser	Trp	Pro	Trp	Phe	Arg	Asp	Ser	Gln	Arg	Arg	Met	Met
	530					535					540				
Tyr	Glu	Ile	Pro	His	Thr	Gly	Met	Ala	Val	Ser	Ser	Asp	Leu	Gly	Asp
545					550					555					560
Ser	Leu	Asp	Val	His	Pro	Lys	His	Lys	Gln	Pro	Val	Gly	Glu	Arg	Leu
				565					570						575
Ala	His	Trp	Ala	Leu	Asn	Gln	Thr	Tyr	Gly	Lys	Lys	Asn	Val	Thr	Pro
		580						585					590		
Ser	Gly	Pro	Met	Phe	Arg	Asn	Val	Glu	Phe	Arg	Asp	Gly	Ala	Ala	Tyr
		595					600					605			
Val	Ser	Phe	Asp	Cys	Ala	Glu	Gly	Met	His	Ala	Ser	Asp	Gly	Lys	Pro
	610					615					620				
Leu	Gln	Thr	Phe	Glu	Val	Ala	Glu	Thr	Glu	Asp	Ile	Tyr	Tyr	Pro	Ala
625					630					635					640
Thr	Ala	Glu	Ile	Val	Gly	Asn	Gln	Ile	Lys	Val	Tyr	Ser	Lys	Glu	Val

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<210> 9525
<211> 521
<212> PRT
<213> B.fragilis
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<400>	9525														
Ile	Met	Lys	Lys	Ile	Ile	Tyr	Ile	Ile	Ser	Leu	Phe	Val	Ser	Ser	Val
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Leu	Tyr	Thr	Ser	Cys	Asp	Ala	Leu	Asp	Leu	Ala	Pro	Glu	Asp	Tyr	Phe
			20					25					30		
Gly	Ser	Gly	Asn	Tyr	Trp	Asn	Asn	Glu	Ala	Gln	Val	Glu	Gly	Phe	Met
		35				40					45				
Tyr	Gly	Met	His	Ser	Gln	Leu	Arg	Gly	Asn	Tyr	Asn	Met	Phe	Tyr	Cys
	50				55					60					
Leu	Gly	Glu	Leu	Arg	Gly	Gly	Thr	Gln	Arg	Val	Gly	Ser	Ser	Ser	Gln
65					70					75					80
Asn	Thr	Ser	Leu	Asp	Tyr	Ala	Ile	Leu	Arg	Thr	Asn	Thr	Leu	Ser	Gln
				85					90					95	
Asp	Asn	Pro	Gly	Phe	Thr	Asn	Trp	Phe	Gly	Leu	Tyr	Ser	Pro	Ile	Met
			100					105					110		
Gln	Val	Asn	His	Phe	Ile	Gln	Lys	Val	Glu	Asn	Glu	Cys	Ala	Phe	Leu
		115				120						125			
Ser	Glu	Ala	Asp	Arg	Lys	Thr	Tyr	Leu	Gly	Gln	Ala	Tyr	Gly	Leu	Arg
	130					135					140				
Ala	Leu	Tyr	Tyr	Phe	Met	Leu	Tyr	Lys	Thr	Tyr	Gly	Gly	Val	Pro	Ile
145					150					155					160
Val	Thr	Thr	Val	Glu	Leu	Leu	Asp	Gly	Lys	Val	Thr	Ala	Asp	Lys	Phe
				165					170					175	
Tyr	Val	Glu	Arg	Ala	Thr	Pro	Glu	Ala	Thr	Leu	Ser	Phe	Ile	Lys	Glu
			180					185					190		
Asp	Ile	Gly	Lys	Ser	Glu	Ser	Tyr	Phe	Gly	Thr	Thr	Glu	Ile	Asn	Asn
	195						200					205			
Lys	His	Asp	Lys	Thr	Met	Trp	Ser	Lys	Ala	Ala	Thr	Leu	Met	Leu	Lys
	210					215					220				
Ala	Glu	Ile	Tyr	Met	Trp	Ala	Ala	Lys	Val	Ser	Ile	Asn	Gly	Tyr	Thr
225					230					235					240
Ala	Ser	Gly	Lys	Ser	Asp	Leu	Glu	Ile	Ala	Lys	Asn	Ala	Leu	Asn	Gly
				245					250					255	
Ile	Ile	Gly	Lys	Phe	Gln	Leu	Leu	Asn	Lys	Phe	Ser	Asp	Val	Phe	Ser
			260					265					270		
Thr	Ser	Asn	Arg	Asn	Asn	Ala	Glu	Val	Ile	Phe	Thr	Leu	His	Phe	Ala
		275					280					285			
Asp	Gly	Glu	Ala	Thr	Asn	Trp	Gly	Gly	Met	Phe	Leu	Tyr	Gln	Asp	Ala
	290				295						300				
Val	Phe	Ile	Gly	Gln	Val	Tyr	Gly	Arg	Asp	Asp	Lys	Lys	Ile	Glu	Thr
305					310					315					320
Asp	Thr	Leu	Asn	Leu	Lys	Gly	Thr	Gly	Gly	Val	Phe	Arg	His	Glu	Tyr
				325					330					335	
Thr	Glu	Asp	Phe	Trp	Lys	Ser	Tyr	Asp	Glu	Lys	Asp	Thr	Arg	Arg	Asp
			340					345					350		
Ala</															

355	360	365
Cys Val Met Gln Lys Ala Ile Gly Ser Ile Asn Ser Asn Asn Asn Arg		
370	375	380
Ile Tyr Asp Thr Asp Phe Ile Val Tyr Arg Tyr Ala Asp Ala Leu Leu		
385	390	395
Met Met Ala Glu Val Glu Asn Gly Leu Gly Asn Pro Cys Ala Gly Tyr		
	405	410
Ile Asn Glu Val Arg Lys Arg Ala Tyr Gly Ser Asp Tyr Glu Ala Asn		
	420	425
Lys Tyr Thr Glu Gly Asn Tyr Ala Glu Asn Glu Leu Ala Ile Leu His		
	435	440
Glu Arg Asp Lys Glu Phe Val Trp Glu Gly Lys Arg Trp Phe Asp Val		
	450	455
Val Arg Met His Asp Ala Asn Gly Lys Ser Leu Ala Phe Ser Ala Thr		
465	470	475
Ala Asn Tyr Pro Ala Asp Lys Ser Ile Leu Asp Pro Ser Glu Glu Tyr		
	485	490
Lys Leu Leu Trp Pro Ile Asp Val Asp Val Met Ser Val Asn Pro Leu		
	500	505
Leu Lys Gln Thr Pro Gly Tyr Glu Lys		510
	515	520

<210> 9526

<211> 64

<212> PRT

<213> B.fragilis

<400> 9526

His Thr Glu Asn Arg Lys Ala Lys Ile Glu Leu Arg Leu Phe Ser Trp	
1	5
Tyr Arg Leu Ile Asn Ile Tyr Val Ile Gly Ser Lys Asp Ser Ile Phe	
	20
Tyr Tyr Ile Thr Val Met Leu Ile Lys Tyr Phe Ile Ile Tyr Gly Arg	
	35
Phe Asn Lys Gln Asp Thr Ile Arg Arg Lys Ala Leu Asn His Arg Lys	
	50
	55
	60

<210> 9527

<211> 673

<212> PRT

<213> B.fragilis

<400> 9527

Ser Ile Met Lys Leu Lys Ile Lys Asn Leu Phe Val Gln Ala Cys Phe	
1	5
Val Ala Gly Gly Val Met Ala Leu Thr Ser Cys Asn Asp Phe Leu Asp	
	20
Arg Glu Pro Leu Ser Ser Val Thr Pro Glu Val Tyr Phe Gln Thr Val	
	35
Asp His Phe Ala Ala Tyr Ser Ile Ala Arg Tyr Gln Asn Tyr Phe Pro	
	50
Ser His Gly Gly Tyr Gly Ala Gly Ile Ala Asn Asp Gly Gly Thr	
65	70
Asp Asn Met Val Ala Gly Gly Arg Ser Ser Arg Tyr Val Lys Gly Leu	
	85
Trp Lys Val Pro Ser Ser Asp Gly Asn Trp Ser Phe Ser Asn Ile Arg	
	100
Tyr Cys Asn Tyr Phe Phe Glu Asn Ala Val Pro Lys Tyr Glu Ala Gly	
	115
	120
	125

Glu	Val	Ala	Gly	Ala	Asp	Ala	Asp	Ile	Arg	His	Tyr	Ile	Gly	Glu	Met
130						135					140				
His	Leu	Met	Arg	Ala	Leu	Val	Tyr	Tyr	Asn	Leu	Leu	Arg	Thr	Tyr	Gly
145					150					155					160
Asp	Phe	Pro	Ile	Val	Thr	Glu	Val	Leu	Pro	Asp	Asp	Lys	Thr	Val	Leu
				165					170					175	
Met	Glu	Lys	Gly	Val	Arg	Gln	Pro	Arg	Asn	Leu	Val	Ala	Arg	Phe	Ile
			180					185					190		
Leu	Lys	Asp	Leu	Asp	Asp	Ala	Ala	Asn	Met	Met	Tyr	Ser	Lys	Gly	Phe
		195					200					205			
Lys	Asn	Asn	Thr	Arg	Leu	Asn	Arg	Glu	Thr	Ala	Leu	Leu	Ile	Lys	Ser
	210					215					220				
Arg	Val	Ala	Leu	Tyr	Glu	Ala	Ser	Phe	Glu	Arg	Tyr	His	Lys	Gly	Thr
225					230					235					240
Gly	Arg	Val	Pro	Gly	Asp	Asp	Asn	Trp	Pro	Gly	Lys	Lys	Val	His	Ser
				245					250					255	
Asn	Phe	Ser	Leu	Asp	Val	Glu	Ala	Glu	Val	Asp	Phe	Phe	Leu	Thr	Glu
			260					265					270		
Ala	Met	Lys	Ala	Ala	Glu	Glu	Val	Ala	Asp	Lys	Ile	Thr	Leu	Thr	Pro
		275					280					285			
Asn	Thr	Lys	Val	Glu	Asp	Pro	Ala	Ser	Pro	Ser	Ile	Thr	Ser	Gly	Trp
	290					295					300				
Asn	Pro	Tyr	Phe	Glu	Met	Tyr	Ala	Asn	Val	Asp	Leu	Ser	Gly	Tyr	Asp
305					310					315					320
Glu	Val	Leu	Phe	Trp	Arg	Gln	Tyr	Ala	Lys	Thr	Gly	Ser	Phe	Ser	Ile
				325					330					335	
Met	His	Gly	Thr	Pro	Ala	Trp	Ile	Ala	Ser	Gly	Ser	Asn	His	Gly	Leu
			340					345					350		
Leu	Lys	Ser	Tyr	Val	Glu	Ser	Phe	Leu	Met	Gln	Asp	Gly	Leu	Pro	Trp
		355					360				365				
Tyr	Ala	Ala	Ser	Ser	Ala	Ala	Pro	Tyr	Lys	Gly	Asp	Ala	Thr	Leu	Asp
	370					375					380				
Asp	Val	Lys	Ala	Asn	Arg	Asp	Asn	Arg	Leu	Gln	Leu	Phe	Met	Phe	Gly
385					390					395					400
Glu	Ser	Asn	Phe	Val	Pro	Val	Tyr	Ser	Thr	Glu	Glu	Pro	Gly	Thr	Val
			405						410					415	
Lys	Met	Phe	Ala	Pro	His	Pro	Val	Ser	Asn	Arg	Glu	Glu	Met	Arg	Asp
		420							425				430		
Gln	Thr	Gly	Tyr	Arg	Ile	Arg	Lys	Tyr	Ala	Ser	Phe	Asp	Met	Ala	Gln
		435					440					445			
Asn	Val	Trp	Gly	Lys	Ala	Glu	Ser	Thr	Thr	Gly	Cys	Ile	Ile	Tyr	Arg
	450					455					460				
Gly	Val	Glu	Ala	Tyr	Leu	Asn	Tyr	Leu	Glu	Ala	Tyr	Tyr	Met	Lys	Asn
465					470					475					480
Gly	Asn	Val	Thr	Gly	Lys	Ala	Ala	Gln	Tyr	Trp	Arg	Ala	Val	Arg	Glu
			485						490					495	
Arg	Ala	Gly	Val	Asp	Pro	Asp	Phe	Thr	Lys	Thr	Ile	Asn	Ala	Thr	Asp
		500						505					510		
Leu	Ser	Gln	Glu	Thr	Asp	Trp	Gly	Lys	Tyr	Ser	Gly	Gly	Gln	Val	Val
		515					520					525			
Asp	Ala	Thr	Leu	Leu	Asn	Ile	Arg	Arg	Glu	Arg	Arg	Cys	Glu	Phe	Ile
	530					535					540				
Gly	Glu	Gly	Met	Arg	Trp	Asp	Asp	Leu	Val	Arg	Trp	Arg	Ser	Met	Asp
545					550					555					560
His	Leu	Leu	Thr	Lys	Asn	Tyr	Ile	Pro	Glu	Gly	Cys	Asn	Phe	Trp	Asp
			565						570					575	
Glu	Met	Tyr	Lys	Ser	Ala	Asn	Lys	Asp	Glu	Asn	Gly	Ala	Glu	Val	Thr
			580					585					590		
Phe	Lys	Asp	Ser	Gly	Glu	Glu	Gly	Ser	Asn	Ile	Ser	Ser	Arg	Ser	Phe

595	600	605
Lys Tyr Leu Arg Pro Tyr Ala Ile Leu Lys Thr Asn Asn Asp Val Tyr		
610	615	620
Asp Gly Tyr Thr Trp Gln Lys Ala His Tyr Leu Asn Pro Val Pro Val		
625	630	635
Arg Glu Met Glu Leu Leu Ser Pro Asp Glu Lys Ala Glu Thr Ser Val		
	645	650
Leu Tyr Gln Asn Pro Tyr Trp Ser Thr Lys Ile Gly Glu Val Ala Glu		
660	665	670
Glu		

<210> 9528

<211> 209

<212> PRT

<213> B.fragilis

<400> 9528

Lys Arg Met Lys Lys Ile Leu Leu Met Met Leu Leu Leu Ala Ser Met		
1	5	10
Ala Ser Asn Ala Gln Glu Arg Lys Tyr Ser Thr Phe Tyr Tyr Gln Arg		
	20	25
Ala Thr Leu Phe Glu Glu Leu Pro Val Thr Ser Lys Asp Ile Ile Phe		
	35	40
Leu Gly Asn Ser Ile Thr Asn Gly Gly Glu Trp Ser Glu Leu Leu Asn		
	50	55
Asn Lys His Val Lys Asn Arg Gly Ile Ser Gly Asp Ile Cys Met Gly		
65	70	75
Val Tyr Asp Arg Leu Asp Ala Ile Leu Lys Gly Lys Pro Ala Lys Ile		
	85	90
Phe Leu Leu Ile Gly Ile Asn Asp Val Ser Arg Gly Thr Ser Ala Asp		
	100	105
Thr Ile Val Asn Arg Ile Gly Met Ile Thr Gln Lys Ile Lys Gln Asp		
	115	120
Ser Pro Lys Thr Lys Leu Tyr Leu Gln Ser Val Leu Pro Val Thr Asp		
	130	135
His Tyr Lys Met Phe Gly Gly His Thr Ser Arg Trp Gln Glu Val Lys		
145	150	155
Lys Ile Asn Glu Gly Leu Met Tyr Leu Ala Asp Lys Glu Asn Val Thr		
	165	170
Tyr Ile Asp Leu Tyr Ser His Phe Val Asp Glu Lys Thr Gly Lys Met		
	180	185
Asn Ile Glu Tyr Thr Asn Asp Gly Leu His Leu Leu Gly Lys Gly Tyr		
	195	200
Leu		

<210> 9529

<211> 1093

<212> PRT

<213> B.fragilis

<400> 9529

Lys Ala Ile Leu Met Lys Lys Thr Ile Phe Leu Ile Leu Cys Ile Leu		
1	5	10
Cys Ser Leu Gly Ala Met Ala Gln Lys Lys Ser Ile Thr Gly Val Ile		
	20	25
Thr Asp Gly Ala Gly Glu Ser Ile Ile Gly Ala Ser Val Val Glu Val		
	35	40
		45

Gly	Thr	Thr	Asn	Gly	Thr	Ile	Thr	Asp	Phe	Asp	Gly	Lys	Phe	Ser	Leu
50						55					60				
Thr	Ile	Ala	Thr	Gly	Ala	Lys	Phe	Thr	Val	Ser	Tyr	Ile	Gly	Tyr	Lys
65				70						75					80
Ser	Gln	Thr	Ile	Thr	Val	Gly	Ala	Glu	Asn	Thr	Tyr	Asn	Ile	Val	Leu
			85						90					95	
Lys	Glu	Asp	Thr	Glu	Val	Leu	Asp	Glu	Val	Val	Ile	Thr	Gly	Tyr	Gly
			100					105					110		
Gly	Ser	Gln	Lys	Arg	Ala	Thr	Leu	Thr	Thr	Ala	Ile	Ser	Lys	Leu	Asp
		115					120					125			
Asn	Ser	Val	Leu	Lys	Asn	Ala	Ala	Phe	Ser	Asn	Ala	Gly	Gln	Ser	Leu
130					135						140				
Gln	Gly	Ser	Val	Thr	Gly	Leu	Arg	Val	Val	Asn	Lys	Thr	Gly	Gln	Pro
145				150						155					160
Gly	Ser	Glu	Pro	Asp	Ile	Thr	Leu	Arg	Gly	Gly	Ala	Thr	Ile	Thr	Gly
			165						170					175	
Asp	Asn	Ser	Lys	Ala	Leu	Ile	Val	Val	Asp	Gly	Ile	Val	Arg	Asn	Ser
		180						185					190		
Met	Ser	Asp	Ile	Asn	Pro	Ser	Asp	Ile	Glu	Ser	Ile	Gln	Val	Leu	Lys
195							200					205			
Asp	Ala	Ala	Ser	Thr	Ala	Ile	Tyr	Gly	Ala	Arg	Ala	Asn	Gly	Gly	Val
210					215						220				
Ile	Leu	Val	Glu	Thr	Lys	Ser	Gly	Lys	Glu	Gly	Lys	Ala	Ser	Val	Asn
225				230						235					240
Tyr	Lys	Phe	Lys	Met	Gly	Val	Asn	Phe	Ala	Arg	Lys	Gly	Tyr	Asp	Phe
			245						250					255	
Cys	Asp	Ala	His	Asp	Tyr	Ile	Tyr	Tyr	Asn	Arg	Leu	Gly	Tyr	Lys	Arg
		260						265					270		
Thr	Gly	Arg	Thr	Asn	Val	Asp	Thr	Gln	Met	Gly	Tyr	Gly	Ile	Gly	Asn
		275					280					285			
Asn	Leu	Phe	Asp	Ile	Arg	Tyr	Leu	Thr	Asp	Glu	Asn	Ala	Asn	Leu	Lys
290					295					300					
Asn	Glu	Gly	Trp	Ala	Ser	Met	Ala	Asp	Pro	Phe	Tyr	Asp	Gly	Lys	Thr
305				310					315						320
Ile	Leu	Tyr	Lys	Asp	Tyr	Ser	Gly	Glu	Leu	Asp	Asp	Val	Val	Phe	Asn
			325						330					335	
Asn	Ser	Ala	Leu	Thr	Gln	Asp	His	Tyr	Val	Asn	Ile	Thr	Gly	Gly	Asn
		340					345					350			
Asp	Lys	Gly	Thr	Phe	Ser	Ala	Ser	Leu	Gly	Tyr	Tyr	Lys	Glu	Asp	Gly
		355					360					365			
Gln	Ile	Arg	Gly	Thr	Gly	Tyr	Glu	Arg	Phe	Asn	Gly	Ala	Leu	Asn	Gly
370					375						380				
Ser	Tyr	Lys	Val	Phe	Pro	Phe	Leu	Thr	Val	Lys	Ala	Asn	Ala	Thr	Tyr
385				390						395					400
Ser	Trp	Ser	Thr	Gln	Pro	Glu	Leu	Trp	Ile	Gly	Gln	Tyr	Glu	Phe	Phe
			405						410					415	
Tyr	Arg	Thr	Arg	Ser	Gln	Arg	Pro	Thr	Trp	Asn	Pro	Trp	Asn	Glu	Asp
		420						425					430		
Gly	Thr	Pro	Ala	Ser	Gly	Phe	Gly	Thr	Gly	Asp	Gly	Asn	Pro	Asp	Tyr
		435					440					445			
Tyr	Arg	Asp	Lys	Leu	Thr	Ser	Glu	Asn	Ser	Thr	Asn	Lys	Ser	Thr	Tyr
		450				455					460				
Ser	Val	Gly	Phe	Ala	Leu	Asp	Ile	Leu	Pro	Lys	Lys	Leu	Val	Leu	Asn
465				470						475					480
Gly	Asn	Ala	Ser	Leu	Tyr	Arg	Tyr	Asp	Trp	Gln	Arg	Glu	Lys	Phe	Asn
			485						490					495	
Lys	Ser	Tyr	Gln	Ala	Gln	Ser	Ser	Ala	Thr	Pro	Asp	Asn	Thr	Arg	Gln
			500					505					510		
Ala	Glu	Ala	Tyr	Val	Gln	Lys	Tyr	Asn	Gln	Ile	Gln	Leu	Asn	Gly	Thr

515	520	525
Leu Thr Tyr Thr Asp Thr Phe Ala Glu Lys His Asn Leu Glu Ala Met		
530	535	540
Leu Gly Thr Glu Tyr Phe Thr Tyr Asp Gln Phe Asp Phe Glu Ala Lys		
545	550	555
Thr Gln Asn Ser Pro Thr Asp Asp Ile Pro Thr Leu Asn Ala Gly Ser		
565	570	575
Thr Arg Thr Tyr Thr Ser Thr Thr Lys Thr Ala Tyr Arg Ile Leu Ser		
580	585	590
Gly Phe Gly Arg Ile Asn Tyr Asn Tyr Asp Met Arg Tyr Leu Ile Ser		
595	600	605
Phe Val Ala Arg Tyr Asp Gly Ile Ser Lys Leu Lys Asp Asn Arg Trp		
610	615	620
Gly Phe Phe Pro Gly Val Ser Val Gly Trp Asn Ile Met Glu Glu Arg		
625	630	635
Phe Trp Lys Asp Ser Lys Ile Ser Gly Val Ile Ser Asn Leu Lys Pro		
645	650	655
Arg Leu Ser Tyr Gly Val Asn Gly Asn Val Asn Gly Ile Gly Asn Phe		
660	665	670
Asp Val Tyr Gly Ala Tyr Ser Gln Val Gly Ala Lys Thr Tyr Gly Gly		
675	680	685
Ser Thr Ala Phe Tyr Asn Ser Gly Leu Val Asn Thr Gly Leu Arg Trp		
690	695	700
Glu Gln Ser Gln Ser Phe Glu Ala Gly Leu Asp Ile Gly Phe Leu Asn		
705	710	715
Asn Arg Leu Ser Phe Ile Leu Asp Tyr Tyr Asn Arg Thr Thr Lys Asp		
725	730	735
Leu Leu Thr Lys Gln Ala Leu Pro Gly Tyr Thr Gly Phe Thr Glu Ile		
740	745	750
Met Thr Asn Met Gly Thr Leu Arg Asn Tyr Gly Phe Glu Met Glu Val		
755	760	765
Arg Ala Asn Ile Leu Asn Asn Pro Lys Gly Leu Thr Trp Asp Val Thr		
770	775	780
Ala Asn Leu Ser Ser Val Ala Asn Lys Ile Val Lys Leu Pro Tyr Asn		
785	790	795
Gly Asn Pro Asn Asn Arg Val Gly Gly Tyr Glu Val Ala Thr Gly Arg		
805	810	815
Lys Lys Ala Asp Gly Thr Asp Glu Thr Lys Trp Ile Ala Gly Arg Gln		
820	825	830
Glu Gly Gly Lys Leu Gly Glu Leu Val Ala Tyr Lys Gln Asn His Ile		
835	840	845
Phe Lys Asp Trp Asp Asp Val Lys Lys Tyr Ala Asn Asn Arg Ile Asp		
850	855	860
Glu Val Ala Asn Leu Tyr Gly Pro Gly Leu Ala Ala Gln Tyr Ala Gly		
865	870	875
Lys Glu Gly Trp Gln Pro Ile Glu Pro Gly Asp Val Cys Trp Glu Asp		
885	890	895
Ile Asn Gly Asp Gly Val Ile Asn Gly Tyr Asp Arg Gln Val Val Gly		
900	905	910
Asn Ile Phe Pro Lys Val Thr Gly Gly Phe Ser Thr Thr Leu Gly Tyr		
915	920	925
Lys Asn Leu Ser Leu Tyr Ala Arg Phe Asp Tyr Ala Leu Gly His Thr		
930	935	940
Ile Tyr Asn Asp Leu Ala Ala Arg Ser Leu Gly Gln Tyr Gln Gly Ser		
945	950	955
Phe Asn Ile Ile Lys Glu Val Lys Lys Thr Trp Ser Glu Thr Asn Thr		
965	970	975
Asp Thr Asp Leu Pro Ala Phe Tyr Tyr Ala Asp Gln Leu Ser Lys Lys		
980	985	990

Asn Ile Thr Arg Ser Asn Asn Gly Leu Thr Ala Ile Asp Asn Asn Ser
 995 1000 1005
 Ser Arg Phe Tyr Glu Lys Gly Asp Tyr Leu Ala Leu Arg Glu Leu Thr
 1010 1015 1020
 Leu Asn Tyr Asn Leu Pro Lys Thr Trp Ile Ser Lys Val Gly Met Thr
 1025 1030 1035 1040
 Asp Ala Ser Val Tyr Val Thr Gly Gln Asn Leu Phe Tyr Ile Thr Gly
 1045 1050 1055
 Tyr Thr Gly Val Ser Pro Glu Pro Ala Val Asp Thr Thr Tyr Gly Arg
 1060 1065 1070
 Gly Ile Asp Asn Gly Arg Tyr Pro Thr Pro Arg Thr Val Leu Phe Gly
 1075 1080 1085
 Leu Ser Val Thr Phe
 1090

<210> 9530

<211> 434

<212> PRT

<213> B.fragilis

<400> 9530

Gly Leu Ile Arg Arg Leu Leu Glu Pro Pro Val Lys Thr Asp Lys Lys
 1 5 10 15
 Thr Leu Met Gly Asn Gly Asn Phe Thr Gly Thr Glu Ile Tyr Asp Tyr
 20 25 30
 His Arg Lys Met Tyr Gly Glu Asp Phe Thr Tyr Ala Asp Phe Ala Pro
 35 40 45
 Met Phe Lys Ala Leu Ser Tyr Asp Pro Glu Glu Trp Ala Asp Leu Phe
 50 55 60
 Glu His Ser Gly Ala Lys Tyr Val Val Leu Thr Thr Lys His His Asp
 65 70 75 80
 Gly Phe Ala Leu Trp Pro Ser Arg Glu Ala Ser Ile Ser Tyr Gly Arg
 85 90 95
 Pro Trp Asn Ser Met Glu Ile Gly Ala His Arg Asp Leu Val Gly Glu
 100 105 110
 Tyr Val Asn Ala Leu Arg Lys Thr Asp Ile Lys Val Gly Cys Tyr Phe
 115 120 125
 Ser Leu Arg Glu Trp Asp Asn Pro Leu Tyr Asn Lys Glu Thr Met Asp
 130 135 140
 Leu Phe Tyr Glu Arg His Trp Phe Pro Gln Leu Asp Leu Val Asn
 145 150 155 160
 Arg Tyr Lys Pro Asp Leu Ile Trp Ala Asp Gly Pro Asp Gln Ile Asn
 165 170 175
 Asp Lys Gln Trp Gln Ala Glu Arg Thr Leu Ala Trp Leu Tyr Ser Glu
 180 185 190
 Ser Pro Val Lys Asp Ser Ile Val Val Asn Asp Arg Trp Ala Asn Asn
 195 200 205
 Thr Gly Lys Lys His Gly Asp Tyr Tyr Thr Arg Glu Tyr Ser Asn Thr
 210 215 220
 Asn Ser Ser Tyr Asn Lys Pro Trp Glu Glu Cys Arg Gly Ile Gly Leu
 225 230 235 240
 Ser Phe Gly Tyr Asn Gln Asn Glu Asp Leu Gly Asp Tyr Thr Ser Pro
 245 250 255
 Lys Ala Leu Ile Leu Thr Leu Val Asn Ile Val Ser Gln Gly Gly Asn
 260 265 270
 Leu Leu Leu Asp Ile Gly Pro Asn Ala Asn Gly Lys Ile Pro Pro Ile
 275 280 285
 Met Gln Glu Arg Leu Leu Gln Ile Gly Lys Trp Leu Lys Val Asn Gly
 290 295 300

Glu Ala Ile Tyr Gly Thr Arg Ala Trp Gly Asn Phe Cys Gln Trp Ser
 305 310 315 320
 Lys Gly Ser Lys Glu Trp Lys Ser Lys Glu Lys His Tyr Val Ser Gly
 325 330 335
 Asp Ala Ile Leu Lys Gln Thr Val Asp Pro Asp Pro Gly Tyr Ala Val
 340 345 350
 Lys Glu Val Phe Phe Thr Lys Lys Gly Asn Asn Val Tyr Ala Ile Leu
 355 360 365
 Pro Arg Tyr Pro Lys Asn Lys Ile Val Leu Lys Asp Ile Gln Thr Thr
 370 375 380
 Gly Arg Thr Lys Ile Thr Leu Leu Gly Ser Asp Lys Lys Val Gln Trp
 385 390 395 400
 Lys Gln Lys Gly Asn Asp Ile Glu Val Ile Met Pro Leu Leu Tyr Val
 405 410 415
 Asp Glu Leu Pro Cys Asp Tyr Ala Trp Val Leu Lys Leu Glu Lys Ile
 420 425 430
 Ser Glu

<210> 9531

<211> 672

<212> PRT

<213> B.fragilis

<400> 9531

Ile Pro Met Arg Asn Lys Gln Ile Phe Leu Ile Ser Phe Ile Ile Tyr
 1 5 10 15
 Leu Cys Thr Ile Ser Ser Val Arg Ala Gly Glu Tyr His Leu Leu Pro
 20 25 30
 Glu Pro Gln Lys Phe Thr Pro Leu Gly Ser Ser Phe Val Leu Gly Arg
 35 40 45
 Thr Lys Leu Ser Thr Pro Val Leu Arg Gln Glu Trp Glu Ala Phe Val
 50 55 60
 Val Asp Arg Gly Gly Val Ile Asp Asp Lys Ala Arg Ala Ser Ile Glu
 65 70 75 80
 Val Lys Leu Val Pro Ser Leu Glu Glu Val Pro Leu Asn Ala Asp Glu
 85 90 95
 Ala Tyr Arg Leu Val Val Asn Asn Gly Lys Val Thr Val Glu Ala Val
 100 105 110
 Thr Glu His Gly Val Tyr Trp Ala Met Gln Thr Leu Ala Gln Leu Gln
 115 120 125
 Asp Val Gln Lys Lys Lys Ala Thr Phe Asn Gly Cys Ser Ile Val Asp
 130 135 140
 Trp Pro Ala Phe Arg Ile Arg Gly Phe Met Gln Asp Val Gly Arg Thr
 145 150 155 160
 Tyr Met Ser Ile Glu Glu Leu Lys Arg Glu Ile Ala Val Leu Ser Arg
 165 170 175
 Phe Lys Ile Asn Val Phe His Trp His Leu Thr Glu Asn Gln Ser Trp
 180 185 190
 Arg Leu Gln Ser Lys Ile Phe Pro Met Leu Asn Asp Ser Val Asn Thr
 195 200 205
 Thr Arg Met Pro Gly Lys Tyr Tyr Thr Leu Glu Glu Ala Lys Asp Leu
 210 215 220
 Val Ala Phe Cys Lys Ala His Asn Ile Leu Leu Ile Pro Glu Phe Asp
 225 230 235 240
 Met Pro Gly His Ser Gly Ala Phe Val Arg Thr Phe Arg His Asp Met
 245 250 255
 Gln Ser Pro Glu Gly Met Lys Ile Leu Lys Leu Leu Val Asp Glu Val
 260 265 270

Cys Glu Thr Phe Asp Val Pro Tyr Leu His Ile Gly Thr Asp Glu Val
 275 280 285
 Arg Phe Thr Asn Pro Lys Phe Val Pro Glu Met Val Glu Tyr Val Arg
 290 295 300
 Ala Lys Gly Lys Lys Val Ile Ser Trp Asn Pro Gly Trp His Tyr Lys
 305 310 315 320
 Pro Gly Glu Ile Asp Met Thr His Leu Trp Ser Tyr Arg Gly Lys Ala
 325 330 335
 Gln Lys Gly Ile Pro Ala Ile Asp Ser Lys Phe His Tyr Leu Asn His
 340 345 350
 Phe Asp Thr Phe Gly Asp Ile Ile Ala Leu Tyr Asn Ser Arg Ile Tyr
 355 360 365
 Asn Val Glu Gln Gly Ser Asp Asp Ile Ala Gly Thr Ile Leu Ala Ile
 370 375 380
 Trp Asn Asp Arg Tyr Val Ala Asn Glu Arg Asn Ile Ile Leu Glu Asn
 385 390 395 400
 Asn Phe Tyr Pro Asn Met Leu Ala Ile Ala Glu Arg Ala Trp Lys Gly
 405 410 415
 Gly Gly Thr Glu Tyr Phe Asp Lys Asn Gly Thr Ile Leu Pro Ser Glu
 420 425 430
 Gly Ser Pro Glu Phe Lys Glu Phe Ala Asp Phe Glu Asn Arg Met Leu
 435 440 445
 Trp His Lys Glu His Thr Phe Lys Gly Tyr Pro Phe Ala Tyr Val Lys
 450 455 460
 Gln Thr Asn Val Lys Trp Asn Ile Thr Asp Ala Phe Pro Asn Gly Gly
 465 470 475 480
 Asp Leu Asn Lys Val Phe Pro Pro Glu Gln Glu Leu Lys Asp Ser Tyr
 485 490 495
 Leu Tyr Glu Gly Lys Glu Tyr Gly Val His Pro Ala Ile Gly Ala Gly
 500 505 510
 Ile Tyr Leu Arg His Val Trp Gly Lys Met Val Pro Thr Phe Tyr Lys
 515 520 525
 Asp Pro Gln Glu Asn His Thr Ala Tyr Ala Tyr Thr Trp Val Tyr Ser
 530 535 540
 Pro Lys Asp Gln Glu Val Gly Leu Trp Ala Glu Phe Gln Asn Tyr Gly
 545 550 555 560
 Arg Ser Glu Met Asp Leu Ala Pro Leu Gln Gly Lys Trp Asp Tyr Lys
 565 570 575
 Gly Ser Arg Ile Trp Ile Asn Asn Glu Glu Ile Gln Pro Pro Val Trp
 580 585 590
 Thr Ala Thr His Arg Thr Lys Ser Asn Glu Ile Ala Leu Gly Asn Glu
 595 600 605
 Asn Cys Val Ala Arg Pro Pro Ile Ala Val His Leu Asn Lys Gly Trp
 610 615 620
 Asn Lys Val Phe Leu Lys Leu Pro Val Gly Lys Phe Asn Met Pro Glu
 625 630 635 640
 Val Arg Leu Val Lys Trp Met Phe Thr Thr Val Phe Val Thr Pro Asp
 645 650 655
 Gly Glu Asn Ala Val Asp Gly Leu Ile Tyr Ser Pro Asp Lys Thr Lys
 660 665 670

<210> 9532

<211> 71

<212> PRT

<213> B.fragilis

<400> 9532

Ala Lys Asn Gly Glu Lys Arg Lys Phe Cys Glu Tyr Phe Gln Thr Ser
 1 5 10 15

Lys Asn Gln Ala Phe Ile Leu Phe Leu Val Leu Val Phe Ser Leu His
 20 25 30
 Lys Gly Leu Lys Met Asn Leu Leu Glu Gly Asp Lys Ser Ser Ile Lys
 35 40 45
 Ile Arg Leu Ile His Leu Leu Lys Asn Glu Leu Met Ile Phe Phe Gln
 50 55 60
 Asn Pro Thr Glu Val Arg Cys
 65 70

<210> 9533

<211> 518

<212> PRT

<213> B.fragilis

<400> 9533

Ile Ile Cys Met Arg Asn Leu Phe Lys Ile Ala Gly Leu Leu Ala Leu
 1 5 10 15
 Thr Gly Phe Ile Ser Ser Cys Asn Asp Lys Glu Thr Thr Ala Asn Tyr
 20 25 30
 Gln Val Ile Pro Leu Pro Gln Glu Ile Thr Thr Ala Gln Ser Gln Pro
 35 40 45
 Phe Thr Leu Asn Gly Ser Val Lys Ile Ile Tyr Pro Glu Gly Asn Glu
 50 55 60
 Lys Met Gln Arg Asn Ala Gln Phe Leu Ala Asp Tyr Leu Lys Lys Ala
 65 70 75 80
 Thr Gly Lys Asp Tyr Ala Val Glu Ala Gly Thr Glu Gly Lys Gly Ala
 85 90 95
 Ile Leu Leu Lys Leu Gly Met Glu Ser Glu Asn Pro Glu Ala Tyr Gln
 100 105 110
 Leu Ser Val Asn Ala Asp Gly Val Thr Ile Ala Ala Pro Thr Glu Ala
 115 120 125
 Gly Val Phe Tyr Gly Ile Gln Thr Leu Arg Lys Ser Ile Pro Val Ala
 130 135 140
 Ile Gly Thr Thr Pro Ser Leu Pro Ala Val Glu Ile Ser Asp Tyr Pro
 145 150 155 160
 Arg Phe Ser Tyr Arg Gly Ala His Phe Asp Val Gly Arg His Phe Phe
 165 170 175
 Thr Val Asp Glu Val Lys Thr Tyr Ile Asp Met Met Ala Leu His Asn
 180 185 190
 Met Asn Arg Leu His Trp His Leu Thr Glu Asp Gln Gly Trp Arg Leu
 195 200 205
 Glu Ile Lys Lys Tyr Pro Lys Leu Thr Glu Ile Gly Ser Lys Arg Ser
 210 215 220
 Glu Thr Val Ile Gly Arg Asn Ser Gly Glu Tyr Asp Gly Lys Pro Tyr
 225 230 235 240
 Gly Gly Phe Tyr Thr Gln Glu Glu Ala Arg Glu Ile Val Ala Tyr Ala
 245 250 255
 Ala Asp Arg Tyr Ile Thr Val Ile Pro Glu Ile Asp Leu Pro Gly His
 260 265 270
 Met Gln Gly Ala Leu Ala Ala Tyr Pro His Leu Gly Cys Thr Gly Gly
 275 280 285
 Pro Tyr Glu Val Trp Lys Ile Trp Gly Val Ser Asp Gln Val Leu Cys
 290 295 300
 Ala Gly Asn Asp Ser Val Leu Thr Phe Ile Asp Asp Val Leu Thr Glu
 305 310 315 320
 Val Met Asp Ile Phe Pro Ser Glu Tyr Ile His Val Gly Gly Asp Glu
 325 330 335
 Cys Pro Lys Thr Glu Trp Ala Lys Cys Pro Lys Cys Gln Ala Arg Ile
 340 345 350

Lys Ala Leu Gly Ile Lys Ser Asp Ala Lys His Ser Lys Glu Glu Tyr
 355 360 365
 Leu Gln Ser Phe Val Ile Asn His Ala Glu Lys Phe Leu Asn Glu His
 370 375 380
 Gly Arg Gln Ile Ile Gly Trp Asp Glu Ile Leu Glu Gly Gly Leu Ala
 385 390 395 400
 Pro Asn Ala Thr Val Met Ser Trp Arg Gly Glu Gly Gly Gly Ile Glu
 405 410 415
 Ala Ala Lys Gln Lys His Asp Val Ile Met Thr Pro Asn Thr Tyr Leu
 420 425 430
 Tyr Phe Asp Tyr Tyr Gln Thr Lys Asp Thr Glu Asn Glu Pro Leu Ala
 435 440 445
 Ile Gly Gly Tyr Leu Pro Leu Glu Arg Val Tyr Gly Tyr Gln Pro Met
 450 455 460
 Pro Ser Ser Leu Thr Pro Glu Glu Gln Lys Tyr Ile Ile Gly Val Gln
 465 470 475 480
 Ala Asn Leu Trp Thr Glu Tyr Ile Pro Thr Phe Ser Gln Ala Gln His
 485 490 495
 Met Val Leu Pro Arg Trp Ala Ala Leu Ala Tyr Val Pro Trp Pro Asn
 500 505 510
 Pro Glu Met Lys Ser Tyr
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 <212> PRT
 <213> B.fragilis

<400> 9534
 Lys Ile Asn Ile Val Thr Asn Met Lys Lys Ile Thr Ser Ile Leu Leu
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 20 25 30
 Pro Glu Asp Tyr Tyr Gly Ser Gly Asn Phe Trp Thr Lys Glu Ala Gln
 35 40 45
 Val Glu Gly Tyr Met Asn Gly Leu His Asn Asn Leu Arg Ser Ser Tyr
 50 55 60
 Thr Met Phe Tyr Val Leu Gly Glu Ala Arg Gly Gly Thr Ser Arg Tyr
 65 70 75 80
 Gly Thr Ser Ser Leu Gly Thr Ser Met Ser Tyr Ser Asp Pro Ile Lys
 85 90 95
 Asn Asn Met Leu Thr Lys Asp Asn Thr Gly Ile Ser Asn Trp Tyr Asp
 100 105 110
 Leu Tyr Gly Arg Ile Met Gln Val Asn His Phe Ile Ser Glu Val Ser
 115 120 125
 Asn Gly Cys Ser Phe Leu Ser Glu Ser Lys Lys Gly Phe Tyr Leu Gly
 130 135 140
 Gln Ala Tyr Gly Leu Arg Ala Leu Tyr Tyr Phe Met Leu Tyr Lys Thr
 145 150 155 160
 Tyr Gly Gly Val Pro Leu Ile Thr Asp Val Lys Val Leu Glu Gly Gly
 165 170 175
 Lys Ile Ser Ala Asp Ala Leu Tyr Thr Glu Arg Ser Thr Pro Glu Thr
 180 185 190
 Ile Leu Lys Phe Ile Lys Ser Asp Leu Glu Ala Ser Glu Leu Asn Phe
 195 200 205
 Gly Asn Asn Val Thr Ile Asp Arg Ala Met Trp Thr Lys Tyr Ala Thr
 210 215 220
 Leu Met Leu Lys Ala Glu Val Tyr Met Trp Ser Ala Lys Val Thr Thr
 225 230 235 240

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Gly Asp His Gln Ala Thr Gly Asn Ser Asp Leu Ala Ile Ala Gln Thr
 245 250 255
 Ala Leu Gln Pro Leu Ile Asn Gln Phe Ser Leu Leu Asp Asn Phe Ser
 260 265 270
 Glu Val Phe Ser Lys Lys Ala Asn Asp Glu Ile Ile Phe Ala Ile Arg
 275 280 285
 Phe Lys Asp Gly Glu Ala Thr Asn Trp Ala Gly Pro Phe Ile Tyr Tyr
 290 295 300
 Gly Asn Ile Phe Glu Gly Gln Arg Tyr Gly Arg Asp Gly Lys Leu Met
 305 310 315 320
 Gln Asp Thr Leu Asp Leu Lys Gly Thr Val Gly Gln Phe Leu His Glu
 325 330 335
 Tyr Lys Lys Ala Leu Trp Asp Ser Tyr Asp Asp Glu Asp Met Arg Arg
 340 345 350
 Asp Ala Thr Phe Met Asp His Tyr Gly Ser Ala Gln Lys Glu Gly Phe
 355 360 365
 Gly Ile Ala Met Lys Lys Gly Ile Gly Ser Val Asn Ser Asn Asn Gln
 370 375 380
 Arg Ile Phe Asp Thr Asp Ile Ile Val Tyr Arg Tyr Ala Asp Val Leu
 385 390 395 400
 Leu Met Met Ala Glu Ile Glu Asn Ala Leu Ser Gly Lys Cys Ala Asn
 405 410 415
 Tyr Val Asn Glu Val Arg Lys Arg Ala Tyr Gly Lys Asn Trp His Pro
 420 425 430
 Gln Phe Ala Tyr Thr Asp Gly Ser Tyr Ala Asp Asn Glu Leu Thr Ile
 435 440 445
 Leu His Glu Arg Asp Lys Glu Phe Val Trp Glu Gly Lys Arg Trp Phe
 450 455 460
 Asp Val Val Arg Met His Asp Ala Asn Gly Lys Ser Leu Ala Phe Ser
 465 470 475 480
 Val Ala Ala Asn Tyr Pro Asn Asn Glu Thr Pro Asp Glu Arg Val Pro
 485 490 495
 Leu Ile Lys Glu Ser Glu Ala His Lys Leu Leu Trp Pro Ile Asp Val
 500 505 510
 Asn Thr Leu Asn Asn Asp Pro Lys Leu Glu Gln Thr Pro Gly Tyr Asp
 515 520 525
 Lys

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 <211> 173
 <212> PRT
 <213> B.fragilis

<400> 9535
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 Ile Leu Ala Gln Lys Leu Leu Glu Lys Tyr Lys Tyr Pro Tyr Leu Ser
 20 25 30
 Ile Asp His Leu Lys Met Gly Leu Ile Arg Ser Gly Gln Cys Lys Leu
 35 40 45
 Ser Ala Asp Ser Asn Asp Met Glu Leu Thr Asn Tyr Leu Trp Pro Ile
 50 55 60
 Val Arg Glu Met Ile Lys Thr Cys Ile Glu Asn Ser Gln Asn Met Ile
 65 70 75 80
 Ile Glu Gly Cys Tyr Ile Pro Phe Asp Trp Glu Lys Asp Phe Thr Asn
 85 90 95
 Glu Tyr Met Lys Gln Ile Gln Tyr Ile Cys Leu Ile Phe Ser Gln Glu
 100 105 110

Tyr Ile Lys His Asn Phe Gln Asn Ile Leu Lys Tyr Glu Asn Ile Ile
 115 120 125
 Glu Lys Arg Gln Ser Thr Asp Leu Ile Phe Glu Asp Ile Ser Lys Thr
 130 135 140
 Asn Lys Tyr Asn Leu Glu Gln Cys Ile Ser Arg Lys Tyr Asn Tyr Ile
 145 150 155 160
 Leu Ile Asp Lys Asp Tyr Leu Ile Asp Thr Asp Asp Ile
 165 170

<210> 9536

<211> 1118

<212> PRT

<213> B.fragilis

<400> 9536

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 Lys Ser Ile Thr Gly Val Val Thr Asp Ala Ser Gly Glu Ser Val Ile
 35 40 45
 Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp
 50 55 60
 Ile Asp Gly Lys Phe Thr Leu Ser Val Asp Pro Asn Gly Lys Ile Lys
 65 70 75 80
 Val Ser Phe Val Gly Tyr Gln Pro Gln Thr Ile Asp Val Lys Gly Lys
 85 90 95
 Gly Ser Phe Asn Ile Gln Leu Lys Glu Asp Ser Glu Met Leu Glu Glu
 100 105 110
 Val Val Val Thr Gly Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr
 115 120 125
 Asn Ser Ile Ala Lys Val Lys Glu Glu Thr Leu Lys Gln Gly Met Phe
 130 135 140
 Thr Asn Pro Ala Gln Ala Leu Ser Gly Ala Val Ala Gly Leu Ser Val
 145 150 155 160
 Ser Gln Thr Ser Gly Asn Pro Gly Ser Ala Pro Thr Leu Val Leu Arg
 165 170 175
 Gly Gly Thr Asn Phe Asp Gly Ser Gly Ser Pro Leu Ile Leu Ile Asp
 180 185 190
 Gly Gln Val Arg Ser Ser Leu Ser Asp Ile Asn Pro Asp Asp Ile Glu
 195 200 205
 Ser Met Glu Val Leu Lys Asp Ala Gly Ala Thr Ala Ile Tyr Gly Ala
 210 215 220
 Arg Ala Asn Asp Gly Val Val Leu Val Thr Thr Lys Arg Gly Lys Ser
 225 230 235 240
 Gly Arg Ala Glu Val Asn Leu Lys Ala Lys Phe Gly Leu Asn Tyr Phe
 245 250 255
 Lys Asp Ser Tyr Asn Phe Met Asn Ala Gly Asp Tyr Leu Tyr Trp Met
 260 265 270
 Arg Thr Gly Tyr Met Asn Ala Tyr Val Gly Asp Met Lys His Pro Asp
 275 280 285
 Gly Ala Gly Ile Lys Gly Trp Ser Ser Leu Ser Gly Leu Thr Thr Ala
 290 295 300
 Thr Pro Tyr Gly Thr Gly Asn Leu Tyr Phe Asp Lys Asp Gly Val Thr
 305 310 315 320
 Pro Leu Asp Gly Asn Lys Thr Ser Ser Ala Ile Trp Ser Pro Met Leu
 325 330 335
 Tyr Ser Asp Asn Leu Ser Phe Leu Leu Asp Gln Gly Trp Gln Thr Met
 340 345 350

Ile Asp Pro Ile Tyr Gly Asp Lys Ile Ile Tyr Lys Asn Thr Asn Ile
 355 360 365
 Ala Asp Phe Asn Ile Asn Thr Pro Ser Phe Ser Gln Asp Tyr Asn Leu
 370 375 380
 Ser Val Ser Gly Gly Asn Asp Lys Gly Asn Tyr Tyr Ala Gly Leu Gly
 385 390 395 400
 Tyr Asn Lys Ser Glu Gly Thr Ala Val Gly Asn Trp Tyr Gln Arg Ile
 405 410 415
 Thr Phe Thr Phe Asn Ala Asp Tyr Lys Leu Lys Glu Trp Leu Thr Ser
 420 425 430
 Asn Ser Ser Phe Asn Phe Ala Asp Ala Thr Trp Asn Gly Leu Pro Ala
 435 440 445
 Ser Gln Thr Ala Glu Ala Asn Tyr Phe Ser Arg Cys Leu Ser Leu Pro
 450 455 460
 Pro Thr Phe Arg Gly Tyr Asn Ala Asp Gly Asp Met Leu Leu Gly Pro
 465 470 475 480
 Asn Ser Gly Asp Gly Asn Gln Gln Tyr Asn Phe Lys Gln Phe Val Arg
 485 490 495
 Asp Asn Asn Thr Asp Lys Phe Thr Met Asn Gln Ser Phe Thr Ile Asp
 500 505 510
 Phe Met Lys Gly Leu Ser Leu Lys Leu Gly Ala Ile Trp Tyr Tyr Ser
 515 520 525
 Glu Glu Lys Thr Glu Ala Phe Asn Lys Asp Tyr Leu Ser Ser Pro Gly
 530 535 540
 Asn Leu Ile Thr Ser His Ser Thr Ser Ala Ser Tyr Ala Arg Thr Leu
 545 550 555 560
 Asp Gln Thr Tyr Asn Ala Val Leu Asn Tyr Asn Tyr Gln Ile Asn Lys
 565 570 575
 Asp Asn Phe Leu Asp Ala Met Val Gly Phe Glu Tyr Tyr Asp Ser Tyr
 580 585 590
 Ser Lys Gly Phe Ser Ala Ser Gly Ser Gly Ala Pro Thr Asp Asp Phe
 595 600 605
 Met Asp Leu Glu Tyr Thr Ser Lys Glu Glu Gly Lys Arg Ser Ile Asp
 610 615 620
 Ser Ser His Ser Arg Gln Arg Ile Met Ser Phe Phe Gly Arg Val Asn
 625 630 635 640
 Tyr Asp Tyr Gln Ser Lys Tyr Leu Leu Ser Leu Val Leu Arg Arg Asp
 645 650 655
 Gly Tyr Ser Lys Leu Ala Glu Glu Asn Arg Trp Gly Val Phe Pro Gly
 660 665 670
 Val Ser Ala Gly Trp Val Phe Ser Lys Glu Glu Phe Met Lys Asn Thr
 675 680 685
 Ala Ser Ile Leu Ser Phe Gly Lys Leu Arg Ala Ser Phe Gly Leu Asn
 690 695 700
 Gly Asn Val Asn Lys Asn Phe Val Gly Asn Tyr Thr Val Gln Gly Ala
 705 710 715 720
 Tyr Gly Ser Asn Arg Tyr Asn Gly Ser Thr Gly Phe Leu Leu Ser Ser
 725 730 735
 Ile Pro Asn Pro Tyr Leu Met Trp Glu Lys Ser Arg Thr Phe Glu Val
 740 745 750
 Gly Leu Asp Met Gly Phe Leu Glu Asn Arg Ile Asn Ala Asn Leu Thr
 755 760 765
 Tyr Tyr Asn Arg Leu Thr Ser Asp Lys Tyr Ala Asn Ile Thr Val Pro
 770 775 780
 Ser Thr Ser Gly Val Ser Ser Val Thr Ser Asn Asn Gly Glu Phe Gln
 785 790 795 800
 Asn Gln Gly Phe Glu Phe Glu Leu Gly Phe Arg Ile Ile Asp Ala Lys
 805 810 815
 Asp Trp Lys Trp Asn Leu Asn Trp Asn Gly Ala Leu Asn Lys Asn Lys

115	120	125
Asn Ser Ile Ser Lys Val Lys Glu Glu Ala Leu Lys Val Gly Leu Phe		
130	135	140
Ser Asn Pro Ala Gln Ala Leu Ser Gly Ala Val Ala Gly Leu Lys Val		
145	150	155
Thr Gln Ala Ser Gly Ser Pro Gly Ala Thr Pro Thr Ile Val Leu Arg		
165	170	175
Gly Gly Thr Asn Leu Asp Gly Ser Gly Ser Pro Leu Val Met Ile Asp		
180	185	190
Gly Gln Leu Arg Asp Gly Leu Asn Asp Ile Asn Pro Glu Asp Ile Glu		
195	200	205
Ser Met Glu Val Leu Lys Asp Ala Gly Ala Thr Ala Leu Tyr Gly Ala		
210	215	220
Arg Ala Ser Asn Gly Val Ile Leu Val Thr Thr Lys Asn Gly Lys Ala		
225	230	235
Gly Tyr Arg Glu Ile Asn Phe Lys Ala Lys Leu Gly Val Asn Tyr Val		
245	250	255
Asn Asn Pro Tyr Glu Phe Leu Gly Gly Glu Asp Tyr Ile Asn Val Leu		
260	265	270
Arg Thr Thr Tyr Ala Lys Ser Gly Tyr Tyr Cys Ser Asp Gly Glu Tyr		
275	280	285
Val Ser Ile Ala Pro Leu Thr Asn Leu Thr Gly Ala Ser Pro Phe Gly		
290	295	300
Thr Gly Asn Val Leu Gly Lys Ser Ala Trp Asn Ile Met Gly Lys Thr		
305	310	315
Ala Asp Asn Ala Tyr Leu Leu Gln Lys Gly Trp Lys Glu Met Val Asp		
325	330	335
Pro Leu Asp Pro Ser Asn Met Ile Ile Tyr Lys Asp Ile Asn Pro Gly		
340	345	350
Asp Tyr Asn Leu Asn Asn Pro Ser Leu Ser Gln Asp Tyr Asn Ile Asn		
355	360	365
Met Ser Gly Gly Asn Asp Arg Gly Ser Tyr Tyr Ala Gly Ile Gly Tyr		
370	375	380
Asn Arg Gln Glu Gly Leu Pro Val Ser Thr Phe Tyr Glu Arg Tyr Ser		
385	390	395
Phe Val Leu Asn Ala Ser Tyr Lys Ile Thr Asp Trp Leu Thr Ser Thr		
405	410	415
Ser Asn Phe Asn Tyr Asn Arg Ala Asn Trp Lys Asn Met Pro Gly Ser		
420	425	430
Asn Thr Ser Glu Gly Asn Tyr Phe Gly Arg Ile Met Ser Thr Pro Pro		
435	440	445
Thr Ser Arg Phe Glu Asp Glu Asp Gly Asn Pro Thr Leu Gly Pro Asn		
450	455	460
Val Ala Asp Gly Asn Gln Ala Phe Gln Pro Glu Lys Trp Gln Asn Phe		
465	470	475
Asn Gln Thr Asp Lys Phe Thr Met Ile Gln Gly Phe Gln Ile Asp Ile		
485	490	495
Met Lys Gly Leu Phe Ile Lys Gly Thr Ala Asn Trp Tyr Tyr Ser Glu		
500	505	510
Gly Leu Tyr Glu Ser Phe Thr Lys Asp Tyr Met Asp Asn Met Leu Thr		
515	520	525
Glu His Tyr Thr Lys Thr Arg Glu Ser Thr Ala Lys Phe Glu Arg Asn		
530	535	540
Phe Ala Gln Thr Tyr Asn Ala Val Leu Asn Phe Thr Arg Thr Phe Ala		
545	550	555
Ile Asp His Asn Val Asn Leu Met Leu Gly Met Glu Tyr Tyr Asp Asn		
565	570	575
Tyr Lys Arg Gly Phe Glu Ala Lys Gly Ser Gly Ala Pro Thr Asp Asp		
580	585	590

Phe Ser Asp Leu Ser Leu Thr Asp Asn Gly Glu Gly Lys Arg Thr Ile
 595 600 605
 Asn Ser Trp His Glu Gln Tyr Arg Ile Leu Ser Tyr Phe Gly Arg Leu
 610 615 620
 Asn Tyr Asp Tyr Lys Gly Arg Tyr Leu Val Ser Ala Val Phe Arg Gln
 625 630 635 640
 Asp Gly Tyr Ser Ser Leu Leu Gly Asp Asn Arg Trp Gly Phe Phe Pro
 645 650 655
 Gly Val Ser Ala Gly Trp Ile Phe Gly Gln Glu Ser Phe Ile Lys Glu
 660 665 670
 Ser Leu Pro Phe Leu Ser Phe Gly Lys Leu Arg Ala Ser Tyr Gly Val
 675 680 685
 Asn Gly Asn Ala Ser Gly Ile Gly Ala Tyr Thr Leu Gln Gly Ser Tyr
 690 695 700
 Asn Thr Ala Val Tyr Asn Gly Asn Thr Gly Phe Leu Ile Gly Ser Leu
 705 710 715 720
 Pro Asn Pro Gly Leu Arg Trp Glu Lys Thr Lys Thr Ala Glu Val Gly
 725 730 735
 Met Asp Leu Ser Phe Leu Glu Asn Arg Leu Asn Ala Asn Phe Thr Tyr
 740 745 750
 Tyr Asn Arg Leu Thr Ser Asp Lys Tyr Ala Asp Phe Ser Leu Pro Ser
 755 760 765
 Thr Thr Gly Phe Ser Ser Ile Lys Asn Asn Asn Gly Lys Phe Arg Asn
 770 775 780
 Ser Gly Val Glu Ile Glu Leu Ser Gly Lys Ile Leu Lys Thr Lys Asp
 785 790 795 800
 Trp Ser Trp Glu Ala Ser Ala Asn Ile Ser Phe Asn Lys Asn Lys Val
 805 810 815
 Val Ala Leu Pro Glu Asn Gly Leu Asp Leu Asn Arg Gln Gly Gly Gln
 820 825 830
 Gln Ile Tyr Thr Gly Lys Gln Leu Ala Asp Gly Thr Tyr Glu Lys Lys
 835 840 845
 Trp Val Gly Gly Tyr Gln Glu Gly Gln Glu Pro Gly Val Leu Val Val
 850 855 860
 Tyr Lys Ser Asp Gly Ile Tyr Arg Ser Trp Asp Glu Ile Pro Gly Asp
 865 870 875 880
 Leu Val Ile Thr Ser Gly Asn Tyr Phe Gly Lys Lys Met Tyr Gly Pro
 885 890 895
 Asp Ala Trp Lys Lys Leu Thr Lys Glu Gln Gln Lys Asn Ala Leu Pro
 900 905 910
 Ile Met Pro Gly Asp Met Lys Trp Lys Asp Ile Asn Gly Asp Lys Ile
 915 920 925
 Ile Asp Ser Tyr Asp Gln Val Val Ala Gly Asn Thr Ser Pro His Trp
 930 935 940
 Ile Gly Gly Phe Asn Thr Thr Leu Arg Trp Lys Asn Phe Gln Leu Tyr
 945 950 955 960
 Gly Arg Phe Asp Phe Ala Leu Asp Tyr Trp Ile Tyr Asp His Thr Leu
 965 970 975
 Pro Glu Ile Phe Leu Ala Cys Ala Gln Gly Thr Tyr Asn Thr Thr Lys
 980 985 990
 Glu Val Phe Asn Thr Trp Ser Asp Glu Asn Pro Asn Ala Lys Tyr Pro
 995 1000 1005
 Arg Tyr Ala Tyr Ala Asp Val Leu Thr Asn Ala Asn Tyr Ala Arg Asn
 1010 1015 1020
 Ser Thr Met Phe Ala His Lys Gly Asn Tyr Leu Ala Ile Arg Glu Ile
 1025 1030 1035 1040
 Ser Leu Ser Tyr Ser Leu Pro Lys Val Trp Ala Asn Lys Ala Tyr Cys
 1045 1050 1055
 Gln Arg Val Asp Val Ser Ile Thr Gly Gln Asn Leu Gly Tyr Ile Thr

	1060		1065		1070
Ser	Ala	Asn	Val	Ala	Ser
	1075		1080		1085
Ala	Leu	Pro	Arg	Thr	Leu
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<210> 9538
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 <212> PRT
 <213> B.fragilis

<400> 9538

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Phe	Leu	Ile	Leu	Cys	Ile	Leu	Cys	Ser	Leu	Gly	Ala	Met	Ala	Gln	Lys
		20						25					30		
Lys	Ser	Ile	Thr	Gly	Val	Val	Thr	Asp	Ala	Ser	Gly	Glu	Ser	Val	Ile
		35					40					45			
Gly	Ala	Ser	Val	Val	Glu	Val	Gly	Thr	Thr	Asn	Gly	Val	Ile	Thr	Asp
	50					55					60				
Ile	Ser	Gly	Lys	Phe	Thr	Leu	Met	Val	Asp	Pro	Asn	Gly	Lys	Ile	Lys
65					70					75				80	
Val	Ser	Tyr	Val	Gly	Tyr	Gln	Pro	Gln	Val	Leu	Asp	Val	Lys	Gly	Lys
			85						90					95	
Asn	Ser	Phe	Asn	Ile	Lys	Leu	Lys	Glu	Asp	Ser	Glu	Met	Leu	Asp	Glu
			100						105					110	
Val	Val	Val	Thr	Gly	Tyr	Gly	Gly	Lys	Gln	Leu	Arg	Thr	Lys	Val	Thr
		115						120					125		
Asn	Ser	Ile	Gly	Lys	Val	Lys	Glu	Asp	Val	Leu	Gln	Lys	Gly	Leu	Phe
	130							135					140		
Ser	Asn	Pro	Ala	Gln	Ala	Leu	Ser	Gly	Ala	Val	Ser	Gly	Val	Arg	Val
145					150					155					160
Leu	Gln	Thr	Ser	Gly	Asp	Pro	Gly	Ala	Thr	Pro	Thr	Ile	Ile	Leu	Arg
				165					170					175	
Gly	Gly	Thr	Asp	Tyr	Asn	Gly	Thr	Gly	Ser	Pro	Leu	Val	Leu	Val	Asp
		180						185					190		
Gly	Gln	Val	Arg	Gly	Ser	Leu	Ser	Asp	Ile	Asn	Pro	Glu	Asp	Ile	Glu
		195						200					205		
Ser	Met	Glu	Val	Leu	Lys	Asp	Ala	Gly	Ala	Thr	Ala	Ile	Tyr	Gly	Ala
	210					215							220		
Arg	Ala	Asn	Asn	Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Arg	Gly	Lys	Glu
225					230						235				240
Gly	Lys	Gly	Glu	Val	Ser	Val	Lys	Ala	Lys	Val	Gly	Ile	Asn	Tyr	Tyr
			245							250				255	
Asn	Asn	Pro	Tyr	Glu	Phe	Met	Asn	Ala	Gly	Asp	Tyr	Ile	Tyr	Trp	Met
			260						265					270	
Arg	Thr	Ala	Tyr	Gln	Arg	Ser	Gly	Gln	Ile	Tyr	Lys	Asp	Ser	Lys	Gly
		275						280					285		
Asn	Trp	Val	Gly	Thr	Ala	Asp	Met	Asn	Ser	Leu	Asn	Asn	Ala	Thr	Pro
	290					295							300		
Tyr	Gly	Thr	Gly	Asn	Leu	Tyr	Phe	Asp	Pro	Ser	Thr	Gly	Ala	Val	Leu
305					310						315				320
Asp	Gly	Asn	Lys	Asp	Val	Arg	Ala	Val	Trp	Ser	Thr	Met	Lys	Tyr	Thr
			325						330					335	
Asp	Asp	Leu	Ala	Phe	Leu	Leu	Lys	Gln	Gly	Trp	Gln	Thr	Met	Thr	Asp
		340							345					350	
Pro	Val	Tyr	Gly	Asp	Gln	Ile	Ile	Tyr	Lys	Asn	Thr	Asp	Pro	Ala	Ser
		355						360					365		
Phe	Asn	Leu	His	Thr	Pro	Ser	Leu	Ser	Gln	Asp	Tyr	Asn	Ile	Ser	Ile

370		375		380
Ser Gly Gly Asn Asp Lys Gly Asn Tyr Tyr Ala Gly Ile Gly Tyr Asn				
385		390		395
Asn Thr Asp Gly Thr Ala Thr Gly Asn Trp Tyr Lys Arg Leu Thr Phe				400
	405		410	415
Thr Phe Asn Ala Asp Tyr Lys Ile Lys Pro Trp Leu Thr Ser Ser Ser				
	420		425	430
Ser Phe Asn Phe Ala Asp Ala Thr Trp Tyr Gly Leu Ser Pro Gly Ser				
	435		440	445
Arg Gly Glu Val Glu Tyr Phe Asn Arg Met Leu Ser Leu Pro Pro Thr				
	450		455	460
Phe Arg Gly Tyr Asn Ala Asp Gly Glu Met Leu Leu Gly Pro Asn Ser				
465		470		475
Ser Asp Gly Asn Gln Ser Phe Asn Leu Ser Lys Phe Lys Arg Asp Asn				480
	485		490	495
Asn Thr Asp Lys Phe Thr Met Val Gln Ser Phe Asp Ile Lys Leu Met				
	500		505	510
Lys Gly Leu Asn Leu Lys Leu Thr Ala Asn Trp Tyr Phe Asp Glu Ala				
	515		520	525
Lys Tyr Glu Ala Phe Asn Gln Asp Tyr Leu Ser Ser Pro Asn Asn Met				
	530		535	540
Asn Thr Ser Arg Ser Thr Ser Ala Glu Phe Asp Arg Thr Leu Asn Gln				
545		550		555
Thr Tyr Asn Ala Val Leu Asn Tyr Asp Tyr Gln Ile Thr Lys Asp His				
	565		570	575
Tyr Leu Ala Ala Met Leu Gly Phe Glu Tyr Tyr Asp Ala Tyr Gln Lys				
	580		585	590
Gly Phe Asn Ala Ser Gly Ser Gly Ala Pro Thr Asp Asp Phe Gly Asp				
	595		600	605
Leu Gln Phe Thr Ser Asn Glu Glu Gly Lys Arg Asn Ile Asp Ser Trp				
610		615		620
His Ser Arg Gln Arg Ile Met Ser Phe Phe Gly Arg Val Asn Tyr Asp				
625		630		635
Phe Gln Ser Lys Tyr Leu Val Ser Phe Val Leu Arg Lys Asp Gly Tyr				
	645		650	655
Ser Lys Leu Ala Lys Asp Asn Arg Trp Gly Val Phe Pro Gly Ile Ser				
	660		665	670
Ala Gly Trp Val Phe Gly Lys Glu Lys Phe Met Glu Ser Leu Gln Gln				
	675		680	685
Val Val Ser Phe Ala Lys Leu Arg Ala Ser Tyr Gly Leu Asn Gly Asn				
	690		695	700
Val Asn Lys Asp Trp Val Gly Asn Tyr Thr Val Gln Gly Ser Tyr Gly				
705		710		715
Ser Asn Lys Tyr Asn Gly Asn Thr Gly Tyr Leu Leu Gly Ser Leu Pro				
	725		730	735
Ile Pro Tyr Leu Gln Trp Glu Arg Ser Gln Thr Phe Glu Val Gly Met				
	740		745	750
Asp Leu Ser Phe Leu Glu Asn Arg Ile Asn Thr Asn Met Thr Tyr Tyr				
	755		760	765
Asn Arg Arg Thr Glu Asp Lys Tyr Ala Thr Ile Pro Leu Pro Ser Ser				
	770		775	780
Ser Gly Val Ser Gly Ile Thr Ser Asn Asn Gly Lys Leu Gln Asn Gln				
785		790		795
Gly Leu Glu Leu Glu Phe Gly Phe Lys Val Leu Glu Lys Arg Asp Trp				
	805		810	815
Lys Trp Asn Ile Asn Leu Asn Ala Ala Tyr Asn Ile Asn Lys Ile Leu				
	820		825	830
Glu Leu Pro Tyr Asn Gly Leu Glu Arg Asn Arg Gln Asn Ala Met Glu				
	835		840	845

Val Tyr Thr Gly Arg Lys Leu Asp Asp Gly Ser Tyr Glu Lys Met Trp
 850 855 860
 Val Gly Gly Tyr Gln Glu Gly Gln Arg Pro Gly Asp Ile Tyr Ala Tyr
 865 870 875 880
 Lys Ala Glu Gly Leu Tyr Arg Ser Glu Ser Glu Ile Pro Gly Asn Leu
 885 890 895
 Ile Asp Lys Ser Thr Gly Asn Asn Ser Ser Asn Asn Lys Ile Leu Tyr
 900 905 910
 Gly Pro Glu Ala Trp Ala Lys Leu Thr Asp Gln Glu Lys Ser Lys Gly
 915 920 925
 Leu Pro Ile Gln Pro Gly Asp Val Lys Trp Lys Asp Val Asn Asn Asp
 930 935 940
 Gly Val Ile Asp Val Tyr Asp Gln Val Lys Val Gly Asn Thr Thr Pro
 945 950 955 960
 Lys Trp Thr Gly Gly Phe Asn Thr Thr Ile Ser Trp Lys Asp Leu Thr
 965 970 975
 Leu Ser Ala Arg Phe Asp Tyr Ala Leu Gly Phe Thr Val Ile Asp Trp
 980 985 990
 Lys Thr Pro Trp Ile Met Gly Asn Met Gln Gly Thr Tyr Asn Thr Ile
 995 1000 1005
 Ser Asp Thr Lys Asn Thr Trp Ser Pro Glu Asn Pro Asn Ala Lys Tyr
 1010 1015 1020
 Pro Thr Tyr Thr Trp Ala Asp Gln Leu Gly Lys Arg Asn Tyr Ala Arg
 1025 1030 1035 1040
 Ser Ser Ser Met Phe Thr Phe Asn Gly Asn Tyr Leu Ala Leu Arg Glu
 1045 1050 1055
 Leu Ser Leu Ala Tyr Arg Leu Pro Ser Gln Leu Ile Lys Lys Ala Gly
 1060 1065 1070
 Met Asn Asp Val Ser Phe Ser Ile Thr Gly Gln Asn Leu Gly Tyr Leu
 1075 1080 1085
 Thr Glu Ala Glu His Met His Ser Pro Glu Ser Ser Ser Asn Asn Gly
 1090 1095 1100
 Gly Tyr Pro Leu Pro Arg Thr Ile Ile Phe Gly Val Asn Val Ser Phe
 1105 1110 1115 1120

<210> 9539

<211> 85

<212> PRT

<213> B.fragilis

<400> 9539

Glu Phe Ser Phe Leu Pro Gly Ser Ala Tyr His Asp Gly Met Tyr Gly
 1 5 10 15
 Gln Lys Pro His Tyr Ala Pro Ala Tyr Gln Ile Pro Glu Leu Lys Val
 20 25 30
 Tyr Tyr Ala Leu Tyr Lys Lys Arg Leu Asn Leu Ser Leu Leu Pro Met
 35 40 45
 Tyr Ser Ile Tyr Pro Ala Tyr Glu Ser Cys Ser His Cys His Ser Thr
 50 55 60
 Ser Glu Lys Phe Tyr Phe Ala Ile Ser Met Ile Asp Phe Gln Ser Asp
 65 70 75 80
 Ala Asn Glu Lys His
 85

<210> 9540

<211> 385

<212> PRT

<213> B.fragilis

<400> 9540

Phe Ile Met Leu Thr Gln Ile Ile Asn Gly Arg Ile Phe Thr Pro Gln
 1 5 10 15
 Gly Trp Leu Asn Glu Gly Ser Val Leu Met Arg Asp Gly Lys Ile Leu
 20 25 30
 Glu Val Thr Asn Cys Asp Leu Ala Leu Ile Gly Ala Asn Leu Val Asp
 35 40 45
 Ala Arg Gly Met Tyr Ile Val Pro Gly Phe Val Cys Met His Ala His
 50 55 60
 Gly Gly Gly Gly His Asp Phe Thr Glu Cys Thr Glu Glu Ala Phe Arg
 65 70 75 80
 Thr Ala Ile Ala Ala His Met Lys His Gly Ala Thr Ser Phe Phe Pro
 85 90 95
 Thr Leu Ser Ser Ser Pro Phe Ser Glu Ile Arg Lys Ala Val Asp Ile
 100 105 110
 Cys Glu Lys Leu Met Ala Glu Pro Asp Ser Pro Ile Leu Gly Leu His
 115 120 125
 Val Glu Gly Pro Tyr Leu Asn Arg Lys Met Ala Gly Glu Gln Phe Ala
 130 135 140
 Asn Gln Val Lys Glu Val Asp Val Ala Glu Tyr Thr Ser Leu Leu Glu
 145 150 155 160
 Ser Thr Asp Cys Ile Lys Arg Trp Asp Ala Ser Pro Glu Leu Pro Gly
 165 170 175
 Ala Leu Asp Phe Ala Arg Tyr Leu Lys Ser Lys Gly Ile Val Gly Ala
 180 185 190
 Val Ser His Thr Glu Ala Glu Tyr Asp Gly Ile Lys Glu Ala Tyr Glu
 195 200 205
 Ala Gly Phe Thr His Ala Ala His Phe Tyr Asn Ala Met Pro Gly Phe
 210 215 220
 His Lys Arg Arg Glu Tyr Lys Tyr Glu Gly Thr Val Glu Ser Val Tyr
 225 230 235 240
 Leu Thr Asp Gly Met Thr Ile Glu Leu Ile Ala Asp Gly Ile His Leu
 245 250 255
 Pro Ser Thr Ile Leu Lys Leu Ala Tyr Lys Leu Lys Gly Val Glu His
 260 265 270
 Thr Cys Leu Val Thr Asp Ala Leu Ser Tyr Ala Ala Ala Glu Gly Lys
 275 280 285
 Ala Ile Asp Asp Pro Arg Ile Ile Glu Asp Gly Val Cys Lys Leu
 290 295 300
 Ala Asp Arg Ser Ala Leu Ala Gly Ser Ile Ala Thr Met Asp Gln Leu
 305 310 315 320
 Val Arg Thr Met Val Lys Ala Asp Ile Pro Leu Ala Asp Ala Ile Arg
 325 330 335
 Met Ala Ser Glu Thr Pro Ala Arg Ile Met Gly Val Tyr Asp Arg Lys
 340 345 350
 Gly Ser Leu Gln Lys Asp Lys Asp Ala Asp Ile Leu Ile Leu Asp Arg
 355 360 365
 Asp Leu Asn Val Lys Ala Val Trp Ala Met Gly Gln Leu Val Lys Glu
 370 375 380
 Ser
 385

<210> 9541

<211> 398

<212> PRT

<213> B.fragilis

<400> 9541

Ile Pro Pro Leu Arg Ile Arg Ile Ile Thr Lys Leu Lys Ile Gly Met


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1           5           10           15
Gln Asn Arg Arg Asp Phe Leu Lys Thr Ala Ala Phe Ala Ala Ile Gly
20           25           30
Ser Gly Leu Ser Leu Gln Gly Ala Phe Ala Gly Glu Lys Ala Pro Val
35           40           45
Ser Phe Ala Ile Asn Gln Leu Gly Leu Gly Ala Lys Met Lys Leu Arg
50           55           60
Phe Phe Pro Tyr Glu Leu Lys Leu Lys His Val Phe Thr Val Ala Thr
65           70           75           80
Tyr Ser Arg Thr Thr Thr Pro Asp Val Gln Val Glu Ile Glu Tyr Asp
85           90           95
Gly Val Ile Gly Tyr Gly Glu Ala Ser Met Pro Pro Tyr Leu Gly Gln
100          105          110
Thr Val Asp Ser Val Met Gly Phe Leu Lys Lys Val Asp Leu Glu Gln
115          120          125
Phe Asp Asp Pro Phe Arg Leu Glu Asp Ile Leu Ala Tyr Val Asp Gly
130          135          140
Leu Thr Pro Gly Asp Thr Ala Ala Lys Ala Ala Ile Asp Ile Ala Leu
145          150          155          160
His Asp Leu Val Gly Lys Leu Leu Gly Ala Pro Trp Tyr Arg Ile Trp
165          170          175
Gly Leu Asp Lys Ala Lys Ala Pro Ser Thr Thr Phe Thr Ile Gly Ile
180          185          190
Asp Thr Pro Glu Val Val Arg Glu Lys Thr Leu Glu Val Ala Gly Gln
195          200          205
Phe Asn Ile Leu Lys Val Lys Leu Gly Arg Glu Asn Asp Lys Gln Met
210          215          220
Ile Glu Thr Ile Arg Ser Val Ser Asp Leu Pro Ile Ala Val Asp Ala
225          230          235          240
Asn Gln Gly Trp Thr Asp Lys Lys Tyr Ala Leu Asp Met Ile Leu Trp
245          250          255
Leu Lys Glu Lys Gly Ile Val Met Ile Glu Gln Pro Met Pro Lys Thr
260          265          270
Gln Leu Asp Asp Ile Ala Trp Val Thr Gln His Ser Pro Leu Pro Val
275          280          285
Phe Ala Asp Glu Ser Leu Gln Arg Leu Ser Asp Val Ala Gly Leu Lys
290          295          300
Gly Ala Phe Thr Gly Ile Asn Ile Lys Leu Met Lys Cys Thr Gly Met
305          310          315          320
Arg Glu Ala Trp Lys Met Val Thr Leu Ala Arg Ala Leu Gly Met Lys
325          330          335
Val Met Val Gly Cys Met Thr Glu Thr Ser Cys Ala Val Ser Ala Ala
340          345          350
Ala Gln Phe Ser Pro Ala Val Asp Phe Ala Asp Leu Asp Gly Asn Leu
355          360          365
Leu Ile Ala Asn Asp Arg Phe Lys Gly Met Glu Val Val Lys Gly Lys
370          375          380
Ile Thr Leu Asn Asp Leu Pro Gly Ile Gly Val Val Lys Ile
385          390          395

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<210> 9542

<211> 451

<212> PRT

<213> B.fragilis

<400> 9542

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Thr Phe Glu Thr Tyr Leu Asp Met Arg Lys Leu Leu Tyr Ile Val Met
1           5           10           15
Ile Phe Ile Gly Val Ser Ala Cys Thr Ser Arg Gln Glu Ser Lys Pro

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<213> B.fragilis

<220>

<221> UNSURE

<222> (17)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9543

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Lys Leu Phe Leu Leu Gly Phe Pro Thr Gly Arg Glu Phe Phe Thr Leu
1          5          10          15
Xaa Leu Arg Trp Gly Asp Lys Asp Ser Val Gly Val Asn Glu Phe Leu
20          25          30
Ser Leu Leu Pro Lys Gly Val Thr Arg Val Leu Asn Thr Leu Ile Phe
35          40          45
Leu Ser Ser Arg Asp Ala Asp Ser Pro Lys Arg Cys Val Gly Val Val
50          55          60
Lys Thr Arg Phe Val Arg
65          70

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<210> 9544

<211> 406

<212> PRT

<213> B.fragilis

<400> 9544

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Pro Pro Asn Leu Ser Phe Met Lys Asn Met Ile Pro Phe Val Ser Leu
1          5          10          15
Leu Leu Ala Val Ser Ala Cys Thr Gly Ile Pro Glu Asn Lys Lys Asn
20          25          30
Ala Leu Pro Gln Asp Val Glu Arg Leu Ser Gly Glu Val Arg Asp Arg
35          40          45
Phe Ile Pro Asp Lys Arg Val Ile Leu Trp Asp Val Asp Tyr Asp Val
50          55          60
Ser Gly Lys Thr Ile Thr Val Lys Gly Ala Thr Thr Ser Pro Glu Ala
65          70          75          80
Lys Ala Ala Leu Leu Ser Gly Leu Glu Glu Lys Ala Tyr Glu Val Lys
85          90          95
Asp Ser Leu Gln Leu Val Pro Asp Ser Ala Ala Leu Glu Gly Lys Met
100          105          110
Tyr Gly Ile Val Asn Leu Ser Val Cys Asn Met Arg Val Glu Asp Asp
115          120          125
Phe Ser Ser Glu Met Thr Thr Gln Ala Leu Met Gly Met Pro Val Lys
130          135          140
Val Leu Gln His Arg Asn Trp Tyr Arg Ile Gln Thr Pro Asp Asn Tyr
145          150          155          160
Ile Ala Trp Val His Arg Val Gly Ile His Pro Val Thr Lys Ala Gly
165          170          175
Leu Asp Ala Trp Asn Lys Ala Asp Lys Ile Val Val Thr Ser His Tyr
180          185          190
Gly Phe Thr Tyr Gln Gln Pro Asp Glu Lys Ser Gln Ser Val Ser Asp
195          200          205
Val Val Ala Gly Asn Arg Leu Lys Tyr Glu Gly Lys Gln Gly Gly Phe
210          215          220
Tyr Lys Val Ser Tyr Pro Asp Gly Arg Gln Ala Tyr Ile Ser Gln Ser
225          230          235          240
Ile Ser Met Pro Glu Lys Glu Trp Arg Ala Ser Leu Lys Gln Asp Ala
245          250          255
Ser Ser Ile Ile Arg Thr Ala Tyr Thr Met Met Gly Ile Pro Tyr Leu
260          265          270

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Trp Ala Gly Thr Ser Ser Lys Gly Val Asp Cys Ser Gly Phe Val Arg
 275 280 285
 Thr Val Leu Phe Met His Asp Ile Ile Ile Pro Arg Asp Ala Ser Gln
 290 295 300
 Gln Ala Tyr Val Gly Glu His Ile Asp Ile Ala Pro Asp Phe Gly Asn
 305 310 315 320
 Val Gln Pro Gly Asp Leu Ile Phe Phe Gly Arg Lys Ala Thr Ala Glu
 325 330 335
 Lys Arg Glu Arg Val Val His Val Ala Ile Tyr Leu Gly Asp Lys Lys
 340 345 350
 Phe Ile His Ser Gln Gly Asp Val His Val Ser Ser Phe Asp Pro Ala
 355 360 365
 Asp Ala Asp Phe Asp Glu Tyr Asn Leu Asn Arg Leu Leu Tyr Ala Val
 370 375 380
 Arg Val Leu Pro Ser Ile Asp Lys Glu Glu Thr Leu Asn Thr Thr Val
 385 390 395 400
 Thr Asn Pro Tyr Tyr Asn
 405

<210> 9545

<211> 100

<212> PRT

<213> B.fragilis

<400> 9545

Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Gly Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Leu
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 9546

<211> 521

<212> PRT

<213> B.fragilis

<400> 9546

Met Asn Lys Lys Asn Ser Met Lys Gln Thr Thr Lys Asn Ile Leu Gly
 1 5 10 15
 Ile Gly Ala Val Val Leu Leu Ser Ala Gly Val Ala Gly Val Thr Thr
 20 25 30
 Tyr Thr Met Leu Lys Pro Glu Asn Arg Asp Ser Leu Ser Phe Asn Glu
 35 40 45
 Gln Phe Arg Gln Asn Pro Gly Ala Arg Leu Ala Ala Tyr Asp Ala Ile
 50 55 60
 Asn Ala Gln Pro Val Asp Leu Thr Gln Ala Ala Glu Asn Ser Leu His
 65 70 75 80
 Ala Val Val His Ile Lys Ser Thr Gln Gln Ala Lys Glu Gln Thr Val
 85 90 95
 Thr Val Arg Asp Pro Phe Ala Glu Ile Phe Gly Asp Ile Phe Gly Asn

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<210> 9547
<211> 135
<212> PRT
<213> B.fragilis
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<400> 9547

Gln Asn Met Lys Tyr Val Lys Ile Leu Phe Ala Val Ala Leu Val Phe
 1 5 10 15
 Thr Leu Cys Ser Ala Phe Ser Leu Lys Gly Gly His Lys Pro Val
 20 25 30
 Tyr Ala Phe Gly Val Ser Ala Ser Phe Thr Asp Thr Val Ile Tyr Tyr
 35 40 45
 Thr Glu Ile Gln Met Leu Asp Ser Val Ala Leu Asp Lys Asn Gly Phe
 50 55 60
 Leu Pro His Arg Glu Leu Tyr Ser Tyr Gln Leu Lys Asn Tyr Leu Glu
 65 70 75 80
 Phe Asp Lys Gly Leu Pro Asn Arg Thr Cys Met Ile Tyr Phe Ser Glu
 85 90 95
 Asn Lys Lys Lys Leu Gly Lys Glu Ala Ala Lys Val Val Gly Lys Phe
 100 105 110
 Lys Lys Asn Lys Thr Val Ala Val Glu Lys Ile Asp Pro Gln Asn Phe
 115 120 125
 Arg Phe Ser Lys Pro Glu Glu
 130 135

<210> 9548

<211> 230

<212> PRT

<213> B.fragilis

<400> 9548

Asn Met Val Lys Phe Ile Glu Ser Glu Leu Val Leu Leu Lys Lys Glu
 1 5 10 15
 Ile Asp Glu Met Trp Thr Leu Val Tyr Asn Gln Leu Asp Arg Ala Gly
 20 25 30
 Glu Ala Val Leu Thr Leu Asp Lys Glu Leu Ala Gln Gln Val Ile Val
 35 40 45
 Arg Glu Arg Arg Val Asn Ala Phe Glu Leu Lys Ile Asp Ser Asp Val
 50 55 60
 Glu Asp Val Ile Ala Leu Tyr Asn Pro Val Ala Ile Asp Leu Arg Phe
 65 70 75 80
 Val Leu Ala Met Leu Lys Ile Asn Thr Asn Leu Glu Arg Leu Gly Asp
 85 90 95
 Phe Ala Glu Gly Ile Ala Arg Phe Val Val Lys Ser Glu Glu Pro Val
 100 105 110
 Leu Asp Glu Glu Leu Leu Lys Arg Leu Arg Leu Glu Glu Met Gln Lys
 115 120 125
 Gln Val Leu Ser Met Leu Glu Val Ala Lys Arg Ala Leu Asn Glu Glu
 130 135 140
 Ser Leu Glu Leu Ala Thr Ser Val Phe Ala Lys Asp Asn Leu Leu Asp
 145 150 155 160
 Glu Ile Asn Ala Glu Ala Thr Ala Val Leu Ala Glu Tyr Ile Lys Glu
 165 170 175
 His Pro Glu Ser Thr Leu Ser Cys Leu Asn Leu Val Gly Val Phe Arg
 180 185 190
 Lys Leu Glu Arg Ser Gly Asp His Ile Thr Asn Ile Ala Glu Glu Ile
 195 200 205
 Val Phe Phe Ile Asp Ala Lys Val Leu Lys His Ser Gly Lys Val Glu
 210 215 220
 Glu His Tyr Pro Ala Lys
 225 230

<210> 9549

<211> 69

<212> PRT

<213> B.fragilis

<400> 9549

Lys Arg Asn Glu Arg Arg Ser Gly Lys Lys Ala Gly Lys Leu Phe Leu
 1 5 10 15
 Ile Thr Ala Ile Asn Asp Leu Ser Asp Thr Glu Trp Ala Leu Arg Val
 20 25 30
 Gly Asp Ile Lys Lys Thr His Ile Ala Leu Ile Gly Asn Gly Ile Tyr
 35 40 45
 Phe Thr Thr Asp Tyr Thr Asp Phe His Gly Leu Tyr His Pro Val Leu
 50 55 60
 Gly Gly Arg Asn Tyr
 65

<210> 9550

<211> 439

<212> PRT

<213> B.fragilis

<400> 9550

Ile Lys Lys Asp Pro Thr Ser Met Lys Leu Ile Tyr Arg Ile Ile Ile
 1 5 10 15
 Arg Ile Ala Leu Met Leu Thr Val Val Leu Gly Ala Trp Ala Val Phe
 20 25 30
 Phe Tyr Ile Ala Val Ile Asp Glu Val Asn Asp Glu Val Asp Asp Ser
 35 40 45
 Leu Glu Asp Tyr Ser Glu Thr Ile Ile Ile Arg Ala Leu Ala Gly Glu
 50 55 60
 Glu Leu Pro Ser Lys Asn Asn Gly Ser Asn Asn Gln Tyr Tyr Leu Arg
 65 70 75 80
 Lys Val Ser Lys Glu Tyr Ala Asp Glu Arg Glu Asp Ile Cys Tyr Lys
 85 90 95
 Asp Ser Met Val Tyr Ile Val Glu Lys Glu Glu Thr Glu Pro Ala Arg
 100 105 110
 Ile Leu Thr Thr Leu Phe Lys Asp Asp Glu Gly Gln Tyr Tyr Glu Leu
 115 120 125
 Thr Val Ser Thr Pro Thr Ile Glu Lys Asp Asp Leu Lys Asp Ala Met
 130 135 140
 Leu Gly Trp Ile Ile Phe Leu Tyr Ile Val Leu Leu Thr Ile Leu
 145 150 155 160
 Ile Val Cys Ile Trp Ile Phe His Arg Ser Met Lys Pro Leu Tyr Asn
 165 170 175
 Leu Leu Arg Trp Leu Asp Ala Tyr Arg Ile Gly Arg Pro Asn Arg Pro
 180 185 190
 Leu Lys Asn Glu Thr Gln Ile Thr Glu Phe Arg Lys Leu Asn Glu Ala
 195 200 205
 Ala Ile Arg Asn Ala Glu Arg Ser Glu His Ile Phe Glu Gln Gln Lys
 210 215 220
 Gln Phe Ile Gly Asn Ala Ser His Glu Met Gln Thr Pro Leu Ala Ile
 225 230 235 240
 Cys Arg Asn Arg Leu Glu Met Leu Met Glu Asp Asp Ser Leu Ser Glu
 245 250 255
 Ala Gln Leu Glu Glu Leu Ile Lys Thr His Gln Thr Leu Glu His Ile
 260 265 270
 Thr Lys Leu Asn Lys Ser Leu Leu Leu Ser Lys Ile Asp Asn Gly
 275 280 285
 Gln Phe Ser Asp Thr Arg Thr Val Glu Phe Asn Ser Met Leu Lys Arg
 290 295 300

Tyr Ile Glu Asp Tyr Lys Glu Val Tyr Gly Tyr Arg Glu Ile Glu Leu
 305 310 315 320
 Thr Leu Asp Glu Gln Gly Ile Phe Arg Ala Glu Met Asn Glu Ser Leu
 325 330 335
 Ala Val Ala Leu Ile Thr Asn Leu Leu Lys Asn Ala Phe Val His Asn
 340 345 350
 Val Asp Gly Gly His Ile Arg Ile Glu Ile Thr Gly His Ser Met Thr
 355 360 365
 Phe Arg Asn Ser Gly Ala Gly Arg Pro Leu Asp Ala Thr His Ile Phe
 370 375 380
 Glu Arg Phe Tyr Gln Gly Ser Lys Lys Glu Gly Ser Thr Gly Leu Gly
 385 390 395 400
 Leu Ala Ile Ala Asp Ser Ile Cys Lys Leu Gln His Leu Thr Leu Arg
 405 410 415
 Tyr Tyr Phe Glu Lys Asp Glu His Cys Phe Glu Leu Arg Lys Asn Asn
 420 425 430
 Phe Thr Thr Asp Tyr Ala Asp
 435

<210> 9551

<211> 394

<212> PRT

<213> B.fragilis

<400> 9551

Phe Met Lys Leu Lys Ile Thr Leu Tyr Ser Val Cys Leu Leu Met Leu
 1 5 10 15
 Leu Ala Ala Cys Gln Gln Asp Gly Pro Thr Pro Glu Pro Ser Val Gly
 20 25 30
 Ser Arg Thr Val Leu Val Tyr Met Ile Ala Gln Asn Ser Leu Ala Pro
 35 40 45
 Leu Ala Ser Ala Asp Ile Glu Glu Met Lys Glu Gly Met Arg Gln Val
 50 55 60
 Asp Ala Thr Ser Gly Asn Leu Leu Val Tyr Ile Asp Asp Tyr Ser Ala
 65 70 75 80
 Pro Arg Leu Ile Arg Leu Gly Lys Asp Lys Lys Gly Lys Val Val Glu
 85 90 95
 Glu Thr Ile Glu Asn Tyr Pro Glu Gln Asn Ser Ala Asp Ala Asn Val
 100 105 110
 Met Lys Lys Val Ile Ser Thr Ala Phe Asn Gln Tyr Lys Ala Glu Lys
 115 120 125
 Tyr Gly Met Val Phe Trp Ser His Gly Glu Gly Trp Ile Pro Ser Pro
 130 135 140
 Ala Lys Thr Arg Trp Phe Gly Gln Asp Gly Asn Asn Tyr Met Asp Ile
 145 150 155 160
 Ala Asp Leu His Ala Ala Leu Gln Val Ala Pro Asp Leu Asp Phe Leu
 165 170 175
 Phe Phe Asp Ala Cys Phe Met Glu Ala Val Glu Val Ala Tyr Ala Leu
 180 185 190
 Arg Asp Cys Gly Ser Tyr Leu Ile Ser Ser Pro Thr Glu Ile Pro Gly
 195 200 205
 Pro Gly Ala Pro Tyr Gln Thr Val Val Pro Ala Met Phe Ser Ala Glu
 210 215 220
 Asn Ala Ala Leu Lys Ile Ala Ser Cys Tyr Tyr Asp Tyr Tyr Gln Ser
 225 230 235 240
 Arg Tyr Asn Asp Gly Ile Gly Met Ser Asn Glu Asp Trp Thr Gly Gly
 245 250 255
 Val Ser Val Gly Val Ala Lys Met Ser Glu Leu Glu Asn Leu Ala Val
 260 265 270

Ala Thr Ser Lys Val Leu Pro Arg Tyr Ile Thr Gly Lys Gln Asn Phe
 275 280 285
 Asp Leu Ser Gly Val Met Cys Tyr Asp Arg Arg Thr Asp Lys Gln Tyr
 290 295 300
 Tyr Tyr Asp Leu Asp Arg Phe Ile Tyr Gln Ile Thr Ala Gly Asn Gly
 305 310 315 320
 Asp Tyr Asp Ser Trp Arg Glu Ala Phe Asp Lys Val Met Val Tyr Trp
 325 330 335
 Lys Ser Thr Pro Arg Asn Tyr Ser Ala Tyr Ala Gly Met Phe Thr Met
 340 345 350
 Asn Gln Asp Thr Lys Gly Leu Ser Thr Tyr Ile Pro Arg Met Ser Ala
 355 360 365
 Pro Ser Leu Asn Thr Ser Tyr Gln Gln Thr Glu Trp Tyr Lys Val Ser
 370 375 380
 Gly Trp Ala Asp Thr Gly Trp Tyr Lys Asn
 385 390

<210> 9552

<211> 95

<212> PRT

<213> B.fragilis

<400> 9552

Lys Val Leu Cys Gln Asn Ser Pro Gln Ser Gly Thr Glu Gln Ser Ile
 1 5 10 15
 Thr Glu Phe Phe Thr Thr Asn Gln Gln Leu Lys Ile Val Ser Val Leu
 20 25 30
 Leu Cys Val Leu Cys Gly Glu Tyr Gly His Thr Ser Glu Ser Pro Ala
 35 40 45
 Glu Lys Val Phe Gly Ser Leu Ile Ile Ala Lys Glu Ile Glu Lys Arg
 50 55 60
 Val Pro Ala Ile Asn Gln Ser Val Leu Phe Leu Phe Ile Leu Val Asp
 65 70 75 80
 Asn Asn Gly Glu Lys Val Val Lys Ile Tyr Thr Leu Thr Asn Lys
 85 90 95

<210> 9553

<211> 301

<212> PRT

<213> B.fragilis

<400> 9553

Gln Ile Asn Ser Arg Asn Phe Ala Leu Gln Ile Cys Phe Ile Arg Met
 1 5 10 15
 Arg Gln Leu Lys Ile Thr Lys Ser Ile Thr Asn Arg Glu Ser Ala Ser
 20 25 30
 Leu Asp Lys Tyr Leu Gln Glu Ile Gly Arg Glu Asp Leu Ile Thr Val
 35 40 45
 Glu Glu Glu Val Glu Leu Ala Gln Arg Ile Arg Lys Gly Asp Arg Val
 50 55 60
 Ala Leu Glu Lys Leu Thr Arg Ala Asn Leu Arg Phe Val Val Ser Val
 65 70 75 80
 Ala Lys Gln Tyr Gln Asn Gln Gly Leu Ser Leu Pro Asp Leu Ile Asn
 85 90 95
 Glu Gly Asn Leu Gly Leu Ile Lys Ala Ala Glu Lys Phe Asp Glu Thr
 100 105 110
 Arg Gly Phe Lys Phe Ile Ser Tyr Ala Val Trp Trp Ile Arg Gln Ser
 115 120 125
 Ile Leu Gln Ala Leu Ala Glu Gln Ser Arg Ile Val Arg Leu Pro Leu

130		135		140
Asn Gln Val Gly Ser Leu	Asn Lys Ile Ser Lys	Ala Phe Ser Lys Phe		
145	150	155	160	
Glu Gln Glu Asn Glu Arg	Arg Pro Ser Pro Glu	Glu Leu Ala Gly Glu		
	165	170	175	
Leu Asp Ile Pro Val Asp	Lys Ile Ser Asp Thr	Leu Lys Val Ser Gly		
	180	185	190	
Arg His Ile Ser Val Asp	Ala Pro Phe Val Glu	Gly Glu Asp Asn Ser		
	195	200	205	
Leu Leu Asp Val Leu Val	Asn Asp Asp Ser Pro	Met Ala Asp Arg Ser		
	210	215	220	
Leu Val Asn Glu Ser Leu	Ala Arg Glu Ile Asp	Arg Ala Leu Ser Thr		
225	230	235	240	
Leu Thr Asp Arg Glu Lys	Glu Ile Ile Gln Met	Phe Phe Gly Ile Gly		
	245	250	255	
Gln Gln Glu Met Thr Leu	Glu Glu Ile Gly Asp	Lys Phe Gly Leu Thr		
	260	265	270	
Arg Glu Arg Val Arg Gln	Ile Lys Glu Lys Ala	Ile Arg Arg Leu Arg		
	275	280	285	
Gln Ser Asn Arg Ser Lys	Leu Leu Lys Ser Tyr	Leu Gly		
	290	295	300	

<210> 9554

<211> 205

<212> PRT

<213> B.fragilis

<400> 9554

Ile Lys Asn Arg Thr Met	Phe Ser Gly Ile Val	Glu Glu Tyr Ala Thr
1	5	10
Val Val Ala Leu Val Lys	Asp Gln Glu Asn Ile His	Phe Thr Leu Lys
	20	25
Cys Ser Phe Val Asn Glu	Leu Lys Ile Asp Gln Ser	Ile Ser His Asn
	35	40
Gly Val Cys Leu Thr Val	Val Ser Met Thr Glu Asp	Thr Tyr Thr Val
	50	55
Thr Ala Met Lys Glu Thr	Leu Asp Arg Ser Asn	Leu Arg Leu Leu Lys
65	70	75
Val Gly Asp Lys Val Asn	Val Glu Arg Ser Met	Met Met Asn Gly Arg
	85	90
Leu Asp Gly His Ile Val	Gln Gly His Val Asp	Gln Thr Ala Glu Cys
	100	105
Ile Asp Ile Lys Asp Ala	Asp Gly Ser Trp Tyr Phe	Thr Phe Lys Tyr
	115	120
Ala Phe Asp Lys Glu Met	Ala Lys Arg Gly Tyr	Ile Thr Val Asp Lys
	130	135
Gly Ser Val Thr Val Asn	Gly Val Ser Leu Thr	Val Cys Asn Pro Thr
145	150	155
Asp Asp Thr Phe Gln Val	Ala Ile Ile Pro Tyr	Thr Tyr Glu His Thr
	165	170
Asn Phe His Thr Phe Gly	Lys Gly Ser Val Val	Asn Leu Glu Phe Asp
	180	185
Ile Ile Gly Lys Tyr Ile	Ser Arg Met Ile Gln	Tyr Lys
	195	200

<210> 9555

<211> 527

<212> PRT

<213> B.fragilis

<400> 9555

Leu His Ser Ser Phe His His Phe Phe Lys Val Ala Asp Phe Ala His
 1 5 10 15
 Arg Leu Ile Val Gly Phe Gln Asp Asp Glu Ala Leu Pro His Thr Gly
 20 25 30
 Ile Arg His Leu Ala Arg Ser Asp Ser Gly Asn Leu Gln Ala Val Ser
 35 40 45
 Glu Ile Glu Leu Phe Leu Gln Val Val Arg Gln Leu Leu Glu Gly Ser
 50 55 60
 Ala Gln Asn Leu His Thr Arg Ile Leu His Asn Leu Cys Cys Thr Leu
 65 70 75 80
 Phe Val Phe Gln Cys Tyr Ile Asp Ile Leu Phe Phe Leu Val Thr His
 85 90 95
 His Leu His Gly His Phe Ile Ala Arg Thr Met Leu Cys Asn Gly Phe
 100 105 110
 Leu Gln Val Gly Lys Val Leu His Phe Leu Ala Ile Asp Thr Asp Asp
 115 120 125
 Asp Ile Ile Tyr Leu Asp Ile Gly Thr Gly Ser Arg Thr Ser Ile Tyr
 130 135 140
 Asp Phe Ala Tyr Pro Asn Ala Ile His Tyr Ala Glu Leu Phe Ala Leu
 145 150 155 160
 Ile Gly Gln Cys Gly Ser Arg Phe Val Asp Arg Leu Ile Gly His His
 165 170 175
 Ile Thr Val Thr Arg Lys Arg Ser Thr Leu Asp Thr Gln Gln Arg Thr
 180 185 190
 Leu Tyr Gly Ser Val Leu Phe Gln Val Ala Asp His Phe Gly His His
 195 200 205
 Thr Gly Arg Asn Gly Lys Thr Val Ser Gly Ile Ser Ala Cys Arg Arg
 210 215 220
 Arg Lys His Gly Ile Asp Thr Tyr Gln Phe Thr Phe Cys Ile His Gln
 225 230 235 240
 Ser Ser Thr Ala Val Ser Leu Ile Asp Gly Gly Ile Cys Leu Asp Glu
 245 250 255
 Arg Phe Tyr Ser Pro Asp Ala Val His Thr Glu Arg Thr Cys Leu Gly
 260 265 270
 Thr Asp Asp Thr Gly Ser Tyr Ser Arg Gly Lys Ile Glu Arg Val Thr
 275 280 285
 Tyr Arg Gln Tyr Pro Leu Ser Tyr Phe Gln Gly Ile Arg Ile Ala His
 290 295 300
 Gly Asp Gly Arg Glu Ile Val Ser Leu Asp Leu Asp Gln Ser Gln Ile
 305 310 315 320
 Arg Ile Arg Val Gly Thr Asp His Ala Thr Phe Glu Leu Ala Val Val
 325 330 335
 Ile Gln Leu Asn Asp Asn Phe Val Arg Thr Val Asp His Val Ile Ile
 340 345 350
 Gly Asp Asp Val Thr Val Phe Gly Asn Asp Asp Thr Gly Thr Glu Ala
 355 360 365
 Asp Thr Arg Leu Gly Leu Tyr Thr Ala Leu Leu Ser Ala Ala Ile Thr
 370 375 380
 Glu Asp Ile Pro Glu Tyr Leu Cys Lys Arg Val Ala Tyr Gly His Ser
 385 390 395 400
 Leu Phe Phe Ser Leu Leu Ser Arg Phe Tyr Met Tyr Tyr Ser Met Lys
 405 410 415
 Arg Ile Phe Arg Arg Leu Arg Gln Ile Tyr Arg Leu Gly Ile Asn Gly
 420 425 430
 Val Ile Ser Ser Gln Ala Ser Thr Gly Ile Leu Thr Glu Leu Phe Ile
 435 440 445
 Lys Arg Gln Ala Val Ser Val Leu Arg Leu Gln His Arg Ile Gly Cys

450		455		460
His Ser Gly Asn Ser Cys Thr Glu Lys Asn Tyr Cys Ser Tyr Pro Glu				
465		470	475	480
Asn Val Phe Cys Cys Leu Phe His Thr Ile Leu Phe Ile His Leu Ile				
	485		490	495
Val Asn Ile Leu Leu Ser Phe Asn Ile Tyr Asp Val Lys Ile Thr Thr				
	500	505		510
Lys Ile Ile Leu Leu Phe Ser Leu Ser Leu Phe Phe Val Leu Phe				
515		520		525

<210> 9556
 <211> 128
 <212> PRT
 <213> B.fragilis

<400> 9556
Phe Ala Asp Gly Val Gly Tyr Gly Lys Ser Gln Ser Gly Arg Thr Phe
1 5 10 15
Leu Phe Ala Ser Leu Ile Glu Ser Phe Lys Asp Met Gly Arg Ile Gln
20 25 30
Gly Ala Ala Cys Ala Ala Ile Pro Glu Gly His Ala Met Thr Gly Tyr
35 40 45
Phe Asn Pro Asp Met Pro Thr Val Tyr Val Val Tyr Lys Arg Ile Phe
50 55 60
Glu Gln Val Arg Tyr Gln Gly Tyr Cys Gln Arg Phe Ile His Leu Arg
65 70 75 80
Pro Glu Tyr Ser Leu Phe Ile Gln Arg Gln Leu Asn Phe Pro Ile Ala
85 90 95
Val Tyr Phe Phe Ile Ile Phe Tyr Ile Ser Leu Glu His Ala Val Glu
100 105 110
Leu Tyr Arg Ser Gly Ile Gly Glu Leu Ser Val Ile Tyr Phe Gly Gln
115 120 125

<210> 9557
 <211> 189
 <212> PRT
 <213> B.fragilis

<400> 9557
Gly Gly Pro Gly Ser Arg Gly Glu Lys Ser Met Asn Asp Phe Leu Gln
1 5 10 15
Leu Val Asn Ala Arg Gln Ser Asp Arg Ala Tyr Asp Lys Ser Arg Leu
20 25 30
Val Glu Ala Asp Lys Leu Glu Arg Ile Leu Glu Ala Gly Arg Leu Ala
35 40 45
Pro Ser Ala Cys Asn Ala Gln Pro Trp Arg Phe Val Val Val Thr Asp
50 55 60
Pro Ser Leu Ala Glu Lys Val Gly Lys Ala Ala Ala Gly Leu Gly Met
65 70 75 80
Asn Lys Phe Ala Lys Asp Ala Pro Val His Ile Leu Val Val Glu Glu
85 90 95
Ser Ala Asn Ile Thr Ser Arg Leu Gly Gly Lys Leu Lys Gly Lys His
100 105 110
Phe Pro Leu Ile Asp Ile Gly Ile Val Ala Ala His Met Val Leu Ala
115 120 125
Ala Glu Ser Glu Gly Leu Gly Ser Cys Ile Leu Gly Trp Phe Asp Glu
130 135 140
Lys Glu Ile Lys Ser Leu Thr Gly Ile Pro Ser Ser Lys Arg Val Leu
145 150 155 160

Leu Asp Ile Leu Ile Gly Tyr Pro Val Lys Glu Lys Arg Lys Lys Ile
 165 170 175
 Arg Lys Glu Ser Gly Lys Ile Ile Ser Tyr Asn Ser Tyr
 180 185

<210> 9558

<211> 125

<212> PRT

<213> B.fragilis

<400> 9558

Thr Leu Lys Gly Ala Ala Leu Trp Asp Glu Val Lys Asp Lys Leu Lys
 1 5 10 15
 Glu Ser Ala Phe Ala Leu Ser Gly Gly Gln Gln Gln Arg Leu Cys Ile
 20 25 30
 Ala Arg Ala Met Ala Val Ser Pro Ser Val Leu Leu Met Asp Glu Pro
 35 40 45
 Ala Ser Ala Leu Asp Pro Ile Ser Thr Ala Lys Val Glu Glu Leu Ile
 50 55 60
 His Glu Leu Lys Glu Arg Tyr Thr Ile Val Ile Val Thr His Asn Met
 65 70 75 80
 Gln Gln Ala Ala Arg Val Ser Asp Lys Thr Ala Phe Phe Tyr Met Gly
 85 90 95
 Gln Met Val Glu Phe Gly Asp Thr Lys Lys Ile Phe Thr Asn Pro Glu
 100 105 110
 Lys Glu Ala Thr Gln Asn Tyr Ile Thr Gly Arg Phe Gly
 115 120 125

<210> 9559

<211> 451

<212> PRT

<213> B.fragilis

<400> 9559

Leu Leu Phe Phe Phe Leu Ile Ser Asn Thr Arg Pro Met Asn Gln Arg
 1 5 10 15
 Leu Ser Asp Ile Trp Lys Phe Ile Thr Tyr Asp Ile Trp Arg Ile Thr
 20 25 30
 Glu Ser Glu Val Thr Arg Thr Lys Phe Ser Ile Tyr Asn Ile Ile Lys
 35 40 45
 Thr Ile Tyr Leu Cys Val Asn Arg Phe Asn Lys Asp Arg Ile Val Asn
 50 55 60
 Lys Ala Ser Ala Leu Thr Tyr Ser Thr Leu Leu Ala Ile Val Pro Ile
 65 70 75 80
 Leu Ala Ile Val Phe Ala Ile Ala Arg Gly Phe Gly Val Ser Thr Leu
 85 90 95
 Met Glu Ser Gln Phe Arg Asp Gly Phe Gly Gly Ser Thr Glu Ala Thr
 100 105 110
 Asp Ile Ile Leu Gln Phe Val Asp Ser Tyr Leu Ser Gln Thr Lys Asn
 115 120 125
 Gly Ile Phe Ile Gly Val Gly Leu Val Met Leu Leu Trp Thr Val Leu
 130 135 140
 Asn Leu Val Ser Asn Ile Glu Ile Thr Phe Asn Arg Ile Trp Gln Val
 145 150 155 160
 Lys Lys Gly Arg Ser Met Tyr Arg Lys Ile Thr Asp Tyr Phe Ser Met
 165 170 175
 Phe Leu Leu Met Pro Ile Leu Ile Val Val Ser Gly Gly Leu Ser Ile
 180 185 190
 Phe Val Gly Thr Met Leu Lys Ser Met Ala Asp Phe Val Leu Leu Ala

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      195              200              205
Pro  Ile  Leu  Lys  Phe  Leu  Ile  Arg  Leu  Ile  Pro  Phe  Val  Leu  Thr  Trp
    210              215              220
Leu  Met  Phe  Thr  Gly  Leu  Tyr  Ile  Phe  Met  Pro  Asn  Thr  Lys  Val  Lys
    225              230              235              240
Phe  Lys  His  Ala  Leu  Ile  Ser  Gly  Ile  Leu  Ala  Gly  Ser  Ala  Tyr  Gln
      245              250              255
Ala  Phe  Gln  Phe  Leu  Tyr  Ile  Ser  Ser  Gln  Leu  Trp  Val  Ser  Lys  Tyr
      260              265              270
Asn  Ala  Ile  Tyr  Gly  Ser  Phe  Ala  Ala  Leu  Pro  Met  Phe  Leu  Leu  Trp
      275              280              285
Leu  Gln  Ile  Ser  Trp  Thr  Ile  Cys  Leu  Phe  Gly  Ala  Glu  Leu  Thr  Tyr
      290              295              300
Ala  Gly  Gln  Asn  Ile  Arg  Asn  Phe  Ser  Phe  Asp  Arg  Asp  Thr  Gln  Asn
    305              310              315              320
Ile  Ser  Arg  Arg  Tyr  Arg  Asp  Phe  Ile  Ser  Ile  Leu  Ile  Met  Ser  Leu
      325              330              335
Ile  Ala  Lys  Arg  Phe  Glu  Asn  Asn  Glu  Thr  Pro  Tyr  Thr  Ala  Glu  Glu
      340              345              350
Ile  Ser  Glu  Glu  His  Arg  Ile  Pro  Ile  Arg  Leu  Thr  Asn  Gln  Ile  Leu
      355              360              365
Tyr  Gln  Leu  Gln  Glu  Ile  His  Leu  Ile  His  Glu  Val  Val  Thr  Asp  Gln
      370              375              380
Lys  Ser  Glu  Asp  Ile  Ala  Tyr  Gln  Pro  Ser  Ile  Asp  Ile  Asn  Gln  Leu
    385              390              395              400
Asn  Val  Ala  Leu  Leu  Leu  Asp  Arg  Leu  Asp  Thr  Tyr  Gly  Ser  Glu  Asp
      405              410              415
Phe  Lys  Val  Asp  Lys  Asp  Glu  Glu  Phe  Ser  Glu  Gln  Trp  Lys  Val  Leu
      420              425              430
Leu  Asp  Ser  Arg  Glu  Glu  Tyr  Tyr  Lys  Lys  Ala  Ser  Lys  Val  Leu  Leu
      435              440              445
Lys  Asp  Leu
    450

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<210> 9560

<211> 157

<212> PRT

<213> B.fragilis

<400> 9560

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Leu  Leu  Lys  Ile  Lys  Thr  Asn  Lys  Lys  Lys  Thr  Ile  Met  Lys  Lys  Leu
  1              5              10              15
Leu  Leu  Leu  Phe  Val  Cys  Leu  Phe  Thr  Leu  Gln  Thr  Ile  Ala  Arg  Ala
      20              25              30
Asp  Asp  Asp  Lys  Pro  Ile  Gln  Val  Ser  Gln  Met  Pro  Gln  Lys  Ala  Gln
      35              40              45
Gln  Phe  Ile  Lys  Gln  His  Phe  Ala  Gly  Ser  Asn  Ile  Ala  Met  Ala  Lys
      50              55              60
Val  Glu  Ser  Asp  Phe  Leu  Gln  Lys  Ser  Tyr  Asp  Val  Ile  Phe  Thr  Asp
      65              70              75              80
Gly  Asn  Lys  Val  Glu  Phe  Asp  Lys  Lys  Gly  Asn  Trp  Thr  Glu  Val  Asn
      85              90              95
Cys  Lys  Phe  Ser  Val  Val  Pro  Gln  Gly  Ile  Ile  Pro  Ser  Pro  Ile  Gln
      100             105             110
Lys  Tyr  Thr  Ala  Thr  Asn  Tyr  Pro  Asp  Ala  Lys  Val  Leu  Lys  Ile  Glu
      115             120             125
Arg  Asp  Lys  Thr  Asp  Tyr  Glu  Val  Lys  Leu  Ser  Asn  Gly  Trp  Glu  Leu
      130             135             140
Lys  Phe  Asp  Ser  Lys  Phe  Asn  Leu  Ile  Asp  Ile  Asp  Asn

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145

150

155

<210> 9561

<211> 283

<212> PRT

<213> B.fragilis

<400> 9561

Lys Ser Ile Val Asp Met Lys Leu Lys Met Tyr Phe Leu Leu Leu Ala
 1 5 10 15
 Leu Gly Ala Leu Gly Leu Gln Ser Cys Asn Asp Asp Asp His Leu
 20 25 30
 Ser Ser Val Pro Thr Glu Leu Lys Asn Ala Phe Thr Glu Lys Tyr Pro
 35 40 45
 Ser Val Ser Asn Glu Lys Trp Glu Thr Lys Gly Asn Tyr Tyr Ile Ala
 50 55 60
 Glu Phe Arg Gln Gln Asn Tyr Glu Thr Ser Ala Trp Phe Thr Pro Asn
 65 70 75 80
 Gly Ile Trp Gln Met Thr Glu Thr Asp Leu Pro Tyr Gln Ala Leu Pro
 85 90 95
 Ala Ala Val Lys Ser Ala Phe Glu Ser Ser Glu Tyr Ala Lys Trp Lys
 100 105 110
 Val Asp Asp Val Asp Met Leu Glu Arg Pro Asp Met Glu Lys Val Tyr
 115 120 125
 Val Ile Glu Val Glu Ser Gly Lys Gln Glu Phe Asp Leu Tyr Tyr Ser
 130 135 140
 Glu Glu Gly Ile Leu Val Lys Ser Val Ala Asp Thr Asp Asn Asp Ser
 145 150 155 160
 Glu Asn Tyr Leu Pro Ala Glu Ile Pro Ala Ala Ile Glu Thr Phe Ile
 165 170 175
 Lys Lys Gln Tyr Pro Asn Ala Arg Leu Val Glu Ile Glu Val Glu His
 180 185 190
 Gly Met Thr Glu Val Asp Ile Ile Asp Gly Asn Ile Ser Lys Glu Ile
 195 200 205
 Val Phe Asn Ser Ser Asn Glu Trp Ile Ser Thr Ser Trp Asp Val Arg
 210 215 220
 Arg Asn Glu Leu Pro Glu Thr Val Thr His Ala Ile Ala Ser Ser Glu
 225 230 235 240
 Lys Tyr Ala Gly Tyr Gln Ile Asp Asp Ala Asp Phe Val Glu Thr Pro
 245 250 255
 Gly Gly Glu Tyr Tyr Leu Val Glu Leu Glu Lys Gly Glu Leu Glu Val
 260 265 270
 Lys Val Lys Val Asn Ala Glu Gly Glu Phe Ile
 275 280

<210> 9562

<211> 236

<212> PRT

<213> B.fragilis

<400> 9562

Ala Phe Ser Leu Gln Val Glu Ile Lys Ser Pro Met Lys Ile Leu Ile
 1 5 10 15
 Ile Glu Asp Glu Pro Ser Leu Arg Glu Leu Ile Gln Arg Ser Leu Glu
 20 25 30
 Lys Glu Arg Tyr Val Val Glu Ala Ala Ala Asp Phe Gln Ser Gly Leu
 35 40 45
 Arg Lys Ile Glu Asp Tyr Asp Tyr Asp Cys Val Leu Leu Asp Ile Met
 50 55 60

Leu Pro Asp Gly Asn Gly Leu Asn Leu Leu Glu Gln Leu Lys Lys Met
 65 70 75 80
 Arg Lys Arg Glu Asn Val Ile Ile Ile Ser Ala Lys Asp Ser Leu Asp
 85 90 95
 Asp Lys Val Leu Gly Leu Glu Leu Gly Ala Asp Asp Tyr Leu Pro Lys
 100 105 110
 Pro Phe His Leu Ala Glu Leu Asn Ala Arg Ile Lys Ser Val Ile Arg
 115 120 125
 Arg Gln Arg Arg Asp Gly Glu Met Asp Ile Arg Leu Ala Asn Ile Arg
 130 135 140
 Ile Val Pro Asp Thr Phe Gln Val Phe Val Asp Asp Lys Glu Ile Glu
 145 150 155 160
 Leu Asn Arg Lys Glu Tyr Asp Ile Leu Leu Tyr Phe Ala Asn Arg Pro
 165 170 175
 Gly Arg Leu Val Asn Lys Asn Thr Leu Ala Glu Ser Val Trp Gly Asp
 180 185 190
 His Ile Asp Gln Val Asp Asn Phe Asp Phe Ile Tyr Ala Gln Ile Lys
 195 200 205
 Asn Leu Arg Lys Lys Leu Lys Asp Ala Gly Ala Leu Ala Glu Leu Lys
 210 215 220
 Ala Val Tyr Gly Phe Gly Tyr Lys Met Thr Val Glu
 225 230 235

<210> 9563

<211> 94

<212> PRT

<213> B.fragilis

<400> 9563

Leu Ser Arg Thr His Ile Leu Ser Val Ile Gly Leu Tyr Leu Gly Cys
 1 5 10 15
 Lys Asn Ser Ile Glu Leu Thr Phe Lys Ser Glu Lys Asp Ile Met Arg
 20 25 30
 Cys Ile Asp Thr Val Thr Ile Thr Ile Ser Lys Met Glu Ile Asp Leu
 35 40 45
 Pro Lys Ile Glu Ile Val Lys Gln Cys Gly Met Ile Ala Ala Asn Thr
 50 55 60
 Val Phe Leu Ile Asn Ser Leu Thr Ser Asn Ile Pro Tyr Met Phe Leu
 65 70 75 80
 Asp Arg Leu Arg Gly Val Lys Val Thr Trp Asp Lys Ile Lys
 85 90

<210> 9564

<211> 385

<212> PRT

<213> B.fragilis

<400> 9564

Asp Ala Tyr Phe Leu Leu Ile Ile Ile Glu Leu Asn Met Lys Lys Ile
 1 5 10 15
 Ala Ile Val Thr Ala Ser Phe Ala Pro Ile Ser Thr Pro Arg Ala Asn
 20 25 30
 Arg Ala Thr Glu Leu Ala Lys Glu Phe Ala Lys Gln Gly Cys Leu Val
 35 40 45
 Thr Val Tyr Asn Cys Thr Ser Val Val Asp Gly Thr Phe Asn Ile Asn
 50 55 60
 Glu Asn Ile Arg Val Val Asp Leu Asn Ile Arg Lys Ala Ser Ile Met
 65 70 75 80
 Lys Ser Ser Thr Lys Asn Asn Val Thr Tyr Thr Ile Leu Asp Lys Gly


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      85              90              95
Ile Ile Leu Ile Arg Lys Leu Val Tyr Tyr Phe Phe Leu Gly Ser Trp
      100              105              110
Leu Leu Tyr Leu Phe Gly Leu Lys Lys Leu Arg Phe Asp Asp Lys
      115              120              125
Tyr Asp Leu Leu Ile Ser Ile Gly Leu Pro Phe Thr Ile His Trp Gly
      130              135              140
Val Ser Leu Arg Ile His Gly His Asn Ile Ala Arg Cys Tyr Val Ala
      145              150              155              160
Asp Tyr Gly Asp Pro Phe Ser Arg Gly Asn Asp Asn Leu Lys Cys Ala
      165              170              175
Lys Tyr Phe Gln Trp Ile Glu Lys Lys Val Ile Asp Lys Phe Asp Tyr
      180              185              190
Ile Thr Ile Pro Thr Tyr Asn Ala Ile Asp Ser Tyr Thr Trp Leu Lys
      195              200              205
Ser Ser Asp Cys Ile Lys Val Ile Pro Gln Gly Phe Asn Phe Ser Glu
      210              215              220
Val Lys Thr Leu Asp Tyr Val Pro Asn Lys Ile Pro Thr Phe Ile Tyr
      225              230              235              240
Ala Gly Ile Phe Tyr Ser Asp Ile Arg Asn Pro Lys Asn Leu Phe Asp
      245              250              255
Ile Leu Leu Lys Leu Asp Phe Asp Phe Cys Phe Ile Ile Tyr Thr Val
      260              265              270
Lys Gly Leu Gln Asp Ser Tyr Ser Cys Ile Lys Pro Tyr Ile Asp Lys
      275              280              285
Leu Gly Ser Lys Leu Val Ile Tyr Asp Ser Ile Pro Arg Leu Ala Leu
      290              295              300
Ile Glu Lys Leu Ser Val Ala Asp Phe Leu Ile Asn Met Ser Asn Thr
      305              310              315              320
Ser Ala Asn Gln Ile Pro Ser Lys Leu Ile Asp Tyr Ala Leu Ser His
      325              330              335
Arg Pro Ile Tyr Ser Cys Thr Pro Asn Ser Ile Asp Leu Asp Lys Leu
      340              345              350
Ile Ser Phe Cys Lys Gly Asp Tyr Thr Gly Ser Glu Asn Ile Asn Leu
      355              360              365
Arg Asp Tyr Asp Ile Thr Thr Ile Val Asn Ser Phe Phe Ser Leu Met
      370              375              380
Gln
      385

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<210> 9565

<211> 431

<212> PRT

<213> B.fragilis

<400> 9565

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1              5              10              15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20              25              30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
      35              40              45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
      50              55              60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
      65              70              75              80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
      85              90              95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly

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<400> 9566
Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1 5 10 15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
20 25 30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
35 40 45

Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Gly Leu His Asn Gly Xaa Gly Ser Ile Ser Ile Val
 180 185 190
 Arg Ile Gln Gly Ala Ile Val Pro Xaa Pro Xaa Arg Ala Pro Xaa Pro
 195 200 205

<210> 9567

<211> 91

<212> PRT

<213> B.fragilis

<400> 9567

Arg His Asn Phe Phe Ser Phe Phe Thr Asn Val Thr Thr Thr Phe His
 1 5 10 15
 Ser Cys Phe Val Asp Gln His Cys Lys Asp Glu Asp Leu Gln Ile Ile
 20 25 30
 Gly Lys Gly Lys Asn Gly Pro Glu Ser Ser Phe Leu Arg Lys Thr Tyr
 35 40 45
 Asn Thr Leu Ile Ile Cys Ile Ile Ile Leu Ser Ser Ser Phe Lys Thr
 50 55 60
 Gly Ala Tyr Thr Cys Thr Gln Tyr Gln Leu Ser Phe Ser Ser Ser Asp
 65 70 75 80
 Lys Cys Ile Val Pro Ile Gln Lys Val Ser Gln
 85 90

<210> 9568

<211> 317

<212> PRT

<213> B.fragilis

<400> 9568

Val Met Tyr Tyr Leu Ile Ile Leu Val Leu Leu Phe Leu Ala Glu Leu
 1 5 10 15
 Phe Tyr Phe Arg Ile Ala Asp Lys Cys Asn Ile Ile Asp Lys Pro Asn
 20 25 30
 Glu Arg Ser Ser His Thr Arg Ile Thr Leu Arg Gly Gly Ile Ile
 35 40 45
 Phe Phe Phe Gly Ala Leu Ala Tyr Phe Leu Thr Asn Gln Phe Glu Tyr
 50 55 60
 Pro Trp Phe Met Leu Ala Leu Thr Leu Ile Thr Phe Ile Ser Phe Val
 65 70 75 80
 Asp Asp Ile Arg Ser Thr Ser Gln Gly Leu Arg Leu Val Phe His Phe
 85 90 95
 Thr Ala Met Ala Leu Met Phe Tyr Gln Trp Gly Leu Phe Ser Leu Pro

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      100              105              110
Trp Trp Thr Ile Val Val Ala Leu Ile Val Cys Thr Gly Ile Ile Asn
      115              120              125
Ala Tyr Asn Phe Met Asp Gly Ile Asn Gly Ile Thr Gly Gly Tyr Ser
      130              135              140
Leu Val Val Leu Ala Ala Leu Ala Phe Ile Asn Gly Val Tyr Val Pro
145              150              155              160
Phe Val Glu Pro Ala Leu Ile Tyr Thr Met Leu Cys Ala Val Leu Val
      165              170              175
Phe Asn Phe Phe Asn Phe Arg Lys Gln Ala Lys Cys Phe Ala Gly Asp
      180              185              190
Val Gly Ser Val Ser Ile Ala Phe Val Ile Leu Phe Leu Ile Gly Met
      195              200              205
Leu Ile Ile Arg Thr Glu Asn Phe Ser Trp Ile Val Leu Leu Ala Val
      210              215              220
Tyr Gly Val Asp Ser Val Leu Thr Ile Ile His Arg Leu Met Leu His
225              230              235              240
Glu Asn Ile Gly Leu Pro His Arg Lys His Leu Tyr Gln Ile Met Ala
      245              250              255
Asn Glu Leu Lys Ile Pro His Met Val Val Ser Leu Val Tyr Met Leu
      260              265              270
Val Gln Ala Val Val Ile Ala Gly Tyr Leu Leu Phe Pro Gly Asn Glu
      275              280              285
Tyr Gly Tyr Leu Ser Gly Thr Ile Ile Ala Leu Ser Leu Val Tyr Ile
      290              295              300
Leu Phe Met Lys Arg Phe Phe Cys Leu His Gln Ala Lys
305              310              315

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<210> 9569

<211> 253

<212> PRT

<213> B.fragilis

<400> 9569

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Lys Met Ser Leu Glu Val Leu Lys Ile Ser Phe Ile Val Val Glu Tyr
1      5      10      15
His Ser Ile Glu Asp Ile Ile Thr Cys Tyr Ser Ser Ile Ile Gly Ile
      20      25      30
Ile Pro Ser Asn Trp Gln Cys Glu Val Ile Val Ser Ser Asn Ser Val
      35      40      45
Tyr Pro Leu Lys Gln Gln Glu Glu Leu Lys Thr Leu Tyr Lys Asp Ile
      50      55      60
Lys Trp Arg Phe Asn Glu Lys Asn Gly Gly Phe Ala Tyr Ala Met Asn
      65      70      75      80
Gln Gly Leu Ser Ile Ala Asp Gly Asp Ile Leu Val Ile Met Asn Pro
      85      90      95
Asp Val Arg Leu Lys Thr Gly Ile Glu Lys Met Val Thr Tyr Leu Tyr
      100      105      110
Ser His Asn Glu Ile Gly Val Ile Ala Pro Lys Ile Ile Asn Ile Asn
      115      120      125
Gly Lys Ile Gln Asp Ser Phe Arg Asp Phe Ile Thr Pro Met Asn Phe
      130      135      140
Ile Lys Arg His Leu Ser Arg Ile Phe Lys Ser Thr Asn Gln Ile Gly
      145      150      155      160
Ile Ile Glu Val Ile Ser Gln Val Asp Trp Val Ile Gly Ala Phe Met
      165      170      175
Met Met Pro Arg Gln Ala Tyr Glu Val Val Lys Gly Leu Asp Glu Tyr
      180      185      190
Tyr Phe Leu Tyr Cys Glu Asp Met Asp Phe Cys Lys Arg Ile Gln Leu

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195 200 205
 Glu Gly Phe Ser Val Val Tyr Tyr Pro Glu Ser Glu Ile Glu Tyr Glu
 210 215 220
 Gly Thr Arg Ser Ala Arg Arg Ser Leu Lys Tyr Ala Cys Ile Phe Phe
 225 230 235 240
 Lys Ser Leu Leu Arg Tyr Trp Thr Lys Phe Gly Phe Asn
 245 250

<210> 9570
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 9570
 His Val Gly Tyr Lys Phe Cys Val Asn Ser Ile Asp Ala Leu Ser Leu
 1 5 10 15
 Asn Lys Gly Lys Leu Glu Arg Asp Leu Thr Asn Arg Ser Asp Val Tyr
 20 25 30
 Met Pro Leu Glu Ser Ile Met Phe Ala Gly Tyr Asn Ala Tyr Val Phe
 35 40 45
 Ile Gly Asp Glu Leu Lys Ser Ala Thr Phe Lys Asp Thr Glu His Gln
 50 55 60
 Val Cys Arg Ser Ile Arg Lys Val Glu Asn Arg Thr Gly Glu Arg Phe
 65 70 75 80
 Lys Leu Ser Glu Arg Gly Gly Gln Leu Pro Arg
 85 90

<210> 9571
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9571
 Leu Ser Leu Gln His Cys Pro Val Val Thr Ala Glu Gly His Val Leu
 1 5 10 15
 Ile Phe Asp Asn Gly Tyr Gly Cys Asn Phe Ser Gly Ser Asn Arg His
 20 25 30
 Ser Arg Gly Glu Tyr Lys Ile Val Gly Leu Asp Val Glu Gln Ile Trp
 35 40 45
 Glu Tyr Gly Lys Glu Arg Gly Glu Asp Phe Phe Ser Pro Ile Thr Ser
 50 55 60
 Glu Val Gln Tyr Ile Glu Glu Ser
 65 70

<210> 9572
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9572
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser

65 70 75 80

Ser Ala Arg

<210> 9573
<211> 83
<212> PRT
<213> B.fragilis

<400> 9573

Val	Pro	Glu	Gln	Gln	Lys	Val	Ala	Gln	Asp	Phe	Ala	Met	Ser	Glu	Ph
1				5					10					15	
Ser	Leu	Ile	Leu	Val	Leu	Gln	Lys	Glu	Asn	Lys	Gln	Asn	Ser	Asn	Me
			20					25					30		
Thr	Trp	Gln	Lys	Tyr	Lys	Leu	Asn	Leu	Arg	Asn	Ser	His	Leu	Leu	Gl
		35					40					45			
Glu	Phe	Phe	Gln	Ser	Trp	Arg	Asn	Leu	Thr	Pro	Cys	Phe	His	Pro	Le
	50					55					60				
Ser	Thr	Gln	His	Trp	Val	Arg	Asp	Ala	Ala	Val	Ser	Ser	Asp	Ile	Se
65					70					75					80
Ser	Ala	Arg													

<210> 9574
<211> 129
<212> PRT
<213> B.fragilis

<400> 9574

Asp	Pro	Leu	Asn	Ser	Pro	Ser	Val	Ser	Ile	Ile	Ala	Phe	Pro	Ile	Il
1				5					10					15	
Gly	Cys	Ser	Lys	Asn	Ile	Phe	Ile	Pro	Ser	Ser	Tyr	Ile	Arg	Ser	Le
			20					25					30		
Pro	Glu	Asp	Val	Ser	Lys	Ala	Leu	Pro	Ser	Ser	Lys	Arg	Val	Ile	Va
		35					40					45			
Arg	Ser	Ile	Lys	Gly	Leu	Leu	Lys	Tyr	Ser	Leu	Lys	Asn	Lys	Ser	Il
	50					55					60				
Leu	Ser	Lys	Phe	Ser	Asn	Ser	Thr	Met	Lys	Gln	Lys	Ala	Val	Val	Ly
65					70					75					80
Ile	Ile	Leu	Lys	Phe	Ser	Phe	Lys	Gln	Arg	Tyr	Asn	Ala	Lys	Met	Al
				85					90					95	
Asn	Asn	Ala	Thr	Lys	Gly	Leu	Leu	Glu	Phe	Ala	Asn	Pro	Ile	Asp	Th
			100					105					110		
Asn	Pro	Lys	Met	Ile	Gly	Met	Glu	Lys	Ser	His	Phe	His	Leu	Phe	Le
		115					120					125			
Leu															

<210> 9575
<211> 350
<212> PRT
<213> B.fragilis

<400> 9575

Asn	Met	Ile	Asp	Phe	Lys	Ile	Lys	Ile	Ser	Asp	Arg	Leu	Lys	Tyr	Pr
1				5					10					15	
Val	Phe	Cys	Thr	Ile	Leu	Ala	Val	Phe	Ala	Phe	Asp	Leu	Arg	Thr	Ph
			20					25					30		
Phe	Gly	Ala	Phe	Leu	Pro	Ile	Ser	Leu	Ile	Thr	Ser	Val	Val	Leu	Il

```

      35              40              45
Ile Phe Ile Tyr Cys Phe Cys Leu Leu Phe Leu Ser Ser His Arg Ile
  50              55              60
Leu Pro Ile Lys Ile Arg Asn Met Asp Ile Leu Leu Ile Ile Phe Phe
  65              70              75              80
Phe Ile Tyr Gly Val Arg Met Tyr Tyr Asn Ile Phe Val Glu Gln Leu
      85              90              95
Tyr Gln Leu Leu Phe Val Asn Arg Phe Thr Cys Ile Val Tyr Tyr Met
      100              105              110
Phe Ile Cys Ile Leu Pro Tyr Val Ile Cys Arg Arg Ile Pro Trp Asn
      115              120              125
Ile Ile Asn Phe Arg Lys Val Leu Trp Thr Leu Trp Trp Leu Phe Val
      130              135              140
Leu Gly Leu Val Leu Ala Leu Lys Ser Val Leu Ser Ile Leu Ala Ser
  145              150              155              160
Gly Asp Ser Phe Phe Asn Gly Arg Ala Asp Ala Asn Thr Tyr Leu Asp
      165              170              175
Thr Ile Gly Tyr Gly His Thr Gly Leu Ser Leu Val Leu Ile Cys Phe
      180              185              190
Ser Leu Ile Ser Phe Tyr Lys Arg Asn Lys Trp Lys Trp Leu Phe Ser
      195              200              205
Ile Pro Ile Ile Leu Gly Leu Val Ser Met Gly Leu Ala Asn Ser Arg
      210              215              220
Ser Pro Phe Val Ala Leu Phe Ala Ile Leu Ala Leu Tyr Leu Cys Leu
  225              230              235              240
Lys Leu Asn Phe Lys Ile Ile Leu Thr Thr Ala Phe Cys Phe Ile Val
      245              250              255
Leu Leu Leu Asn Leu Asp Ser Ile Asp Leu Phe Phe Lys Glu Tyr Phe
      260              265              270
Asn Ser Pro Phe Ile Glu Arg Thr Met Thr Leu Phe Glu Leu Gly Ser
      275              280              285
Ala Leu Glu Thr Ser Ser Gly Arg Asp Leu Ile Tyr Glu Asp Gly Ile
      290              295              300
Lys Met Phe Leu Glu His Pro Ile Ile Gly Lys Ala Ile Ile Leu Thr
  305              310              315              320
Asp Gly Glu Phe Arg Gly Ser Tyr Val His Asn Ile Phe Leu Glu Val
      325              330              335
Phe Met Gly Leu Gly Leu Val Gly Gly Gly Leu Phe Leu Pro
      340              345              350

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<210> 9576

<211> 63

<212> PRT

<213> B.fragilis

<400> 9576

```

Ser Arg Leu Leu Val Ser Gly Ala Leu Lys Tyr Asp Leu Asn Tyr Thr
  1              5              10              15
Asp Ser Leu Asn Asn Ser Val Phe Pro Asn Thr Asn Phe Val Ser Thr
      20              25              30
Arg Ile Ile Glu Val Asp Ser Lys Asn Asn Val Ser Phe Glu Met Leu
      35              40              45
Tyr Lys Ser Gln Lys Met Asp Met Thr Phe Arg Met Gln Lys Met
      50              55              60

```

<210> 9577

<211> 69

<212> PRT

<213> B.fragilis

<400> 9577

```

Ser Leu Leu Arg Leu Arg Ile Arg Ser Thr Arg Phe Ala Gly Pro Tyr
1      5      10      15
Glu Lys Leu Lys Thr Ala Pro Glu Asn Val Ser Asn Tyr Leu Lys Glu
20      25      30
Ala Val Asn Tyr Leu Asp Lys Phe Gly Asn Glu Ile Phe Ala Tyr Leu
35      40      45
Lys Asp Gly Asn Tyr Pro Ile Asp Lys Asn Ser Ala Glu Arg Ser Ile
50      55      60
Arg Lys Leu Ile Thr
65

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<210> 9578

<211> 470

<212> PRT

<213> B.fragilis

<400> 9578

```

Val Asn Lys Leu Leu Lys Asn Trp Ser Tyr Leu Leu Leu Ser Asp Ile
1      5      10      15
Ser Gln Ser Val Ile Asn Phe Phe Val Phe Met Leu Leu Ala Arg Lys
20      25      30
Leu Thr Pro Val Gly Tyr Gly Glu Phe Asn Val Ile Leu Ala Ile Val
35      40      45
Ala Ile Phe Ser Val Val Ala Thr Asn Leu Gly Ala Asn His Val Ile
50      55      60
Thr Arg Glu Val Thr Leu His Pro Asp Asn Thr Lys Gly Ile Cys Tyr
65      70      75      80
Asn Val Ile Pro Leu Arg Leu Ile Ala Leu Ala Ile Ala Phe Leu Gly
85      90      95
Val Phe Val Tyr Ile Val Cys Gly Lys Asp Val Ser Phe Ser Ser Ser
100      105      110
Phe Tyr Ile Phe Ile Leu Ile Phe Ala Thr Ser Val Trp Asp Phe Ala
115      120      125
Glu Ser Val Ala Phe Gly Arg Leu Val Thr Lys Tyr Thr Thr Phe Phe
130      135      140
Asn Leu Ser Phe Ser Cys Ser Trp Leu Leu Phe Val Leu Phe Leu Pro
145      150      155      160
Glu Ser Tyr Phe Ser Ile Glu Val Val Leu Val Ile Tyr Ser Leu Leu
165      170      175
Phe Val Cys Lys Ser Ile Gly Tyr Leu Gly Arg Ser Cys Glu Lys Phe
180      185      190
Val Lys Thr Thr Leu Pro Val Ile Ser Leu Thr Lys Arg Ser Leu Phe
195      200      205
Met Met Ser Leu Pro Tyr Leu Trp Met Arg Val Phe Gly Ile Phe Gly
210      215      220
Glu Gln Ile Pro Ile Leu Ile Leu Asn Asn Lys Cys Gly Thr Asp Gln
225      230      235      240
Val Gly Tyr Phe Ser Val Gly Phe Arg Leu Ile Ile Pro Ile Thr Ile
245      250      255
Ala Ile Asn Thr Gly Leu Arg Ala Val Phe Pro Phe Met Thr Arg Ala
260      265      270
Tyr Thr Glu Asp Pro Lys Leu Phe Ser Glu Lys Leu Ile Lys Val Phe
275      280      285
Thr Phe Val Met Ile Trp Gly Thr Leu Val Ala Gly Ile Leu Val Leu
290      295      300
Phe Ser Glu Tyr Trp Ile Pro Phe Phe Leu Gly Lys Ser Tyr Leu Asn
305      310      315      320

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Ser Ile Asp Ala Phe Asn Tyr Leu Ala Trp Phe Gly Val Gly Met Cys
 325 330 335
 Phe Asp Leu Leu Leu Ser Thr Leu Leu Ser Ser Thr Tyr Lys Gln Lys
 340 345 350
 Ile Leu Ala Ala Ile Thr Thr Ile Asp Phe Phe Ile Val Ile Ala Phe
 355 360 365
 Leu Tyr Trp Gly Ala Gln Tyr Gly Ala Ile Gly Leu Ala Leu Ala Lys
 370 375 380
 Leu Leu Ser Met Leu Phe Ile Leu Gly Tyr His Ile Ile Val Val Cys
 385 390 395 400
 Lys Val Phe Asn Met Ser Ile Arg Asn Arg Asn Phe Ile Ile Ser Leu
 405 410 415
 Val Val Tyr Leu Phe Ala Met Ser Val Thr Leu Phe Ile Ser Leu Phe
 420 425 430
 Ile Leu Lys Leu Leu Leu Phe Ile Leu Pro Phe Leu Val Val Gly Phe
 435 440 445
 Ile Pro Asn Asn Pro Ile Arg Gln Cys Ile Val Gly Val Arg Ser Leu
 450 455 460
 Ile Tyr Lys Asn Lys Ile
 465 470

<210> 9579

<211> 171

<212> PRT

<213> B.fragilis

<400> 9579

Met Lys Arg Ser Ser Asn Ile Ser Lys Glu Gly Glu Lys Ile Met Pro
 1 5 10 15
 Leu Phe Tyr Arg Ala Arg Gln Ser Gln Leu Lys Thr Lys Glu Gly Lys
 20 25 30
 Lys Gln Trp His Leu Thr Leu Val Lys Val Gly Lys Met Val Thr Ser
 35 40 45
 Gln Gln Leu Ala Glu Val Ile Ala Glu Lys Ser Ser Leu Thr Pro Gly
 50 55 60
 Asp Val His Asn Val Ile Arg Asn Leu Met Thr Ala Met Arg Lys Glu
 65 70 75 80
 Leu Leu Asn Ser Arg Ser Val Arg Leu Glu Gly Leu Gly Thr Phe Thr
 85 90 95
 Met Lys Ala Cys Thr Gln Gly His Gly Val Asp Gln Glu Glu Glu Val
 100 105 110
 Ser Pro Asn Gln Val Ala Ala Leu Arg Cys Leu Phe Thr Pro Glu Tyr
 115 120 125
 Thr Arg Pro Ala Ala Ile Gly Thr Thr Arg Ala Leu Leu Gln Gly Val
 130 135 140
 Glu Phe Gln Lys Val Ser Ala Ile Gly Gly Ala Ile Asn Gly Gly Ser
 145 150 155 160
 Gly Ser Gly Asp Ile Val Asp Asp Pro Thr Ala
 165 170

<210> 9580

<211> 62

<212> PRT

<213> B.fragilis

<400> 9580

Arg Ser Ile Gly Leu Ala Arg Met Ser Gln Lys Gly Met Ala Glu Lys
 1 5 10 15
 Ser Gly Val Ser Leu Ala Thr Ile Ser His Phe Glu Gln Gly Val Asn

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<210> 9581
<211> 80
<212> PRT
<213> B.fragilis
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<210> 9582
<211> 60
<212> PRT
<213> B.fragilis
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<210> 9583
<211> 305
<212> PRT
<213> B.fragilis
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<400> 9583															
Asn	Met	Asn	Ile	Ala	Ala	Ile	Thr	Ile	Thr	Tyr	Asn	Asp	Gly	Tyr	Lys
1				5					10					15	
Phe	Lys	Glu	Trp	Val	Glu	His	Tyr	Gln	Glu	Tyr	Lys	Ser	Glu	Leu	Tyr
			20					25					30		
Leu	His	Ile	Ile	Val	Asp	Asn	Gly	Ser	Glu	Asp	Glu	Tyr	Met	Ala	Gln
		35					40					45			
Leu	Lys	Ser	Thr	Phe	Thr	Asp	Ser	Ile	Ile	Ile	Glu	Arg	Gly	Lys	Asn
	50					55					60				
Gly	Gly	Cys	Thr	His	Ala	Tyr	Asn	Asp	Gly	Ile	Arg	Tyr	Ala	Leu	Asn
65					70					75				80	
Asp	Lys	His	Val	Asp	Ala	Ile	Met	Leu	Ile	Gly	Asn	Asp	Ile	Lys	Leu
				85					90					95	
Ser	Val	His	Gly	Val	Lys	Gly	Leu	Tyr	Asp	Phe	Leu	Met	Ser	Asn	Ala
			100					105					110		
Glu	Tyr	Gly	Met	Val	Glu	Pro	Ile	Leu	Leu	Ala	Lys	Asp	Ser	Asp	Ile

```

      115              120              125
Val Glu Asp Phe Gly Asn Glu Ile Ser Arg Tyr Leu Gln Met Lys Pro
  130              135              140
Phe Ala Val Gly Gln Asn Ile Gly Asn Leu Thr Gly Asp Glu Val Arg
  145              150              155              160
Thr Val Phe Thr Val Thr Gly Gly Met Asn Leu Ala Lys Arg Glu Phe
      165              170              175
Tyr Glu Ile Val Gly Leu Gln Asp Asp Leu Leu Phe Met Tyr Ser Asp
      180              185              190
Glu Val Asp Met Gly Ile Arg Ala Lys His Cys Gly Phe Thr Met Ala
      195              200              205
Val Thr Lys Asn Ile Gln Ala Trp His Gln His Ile Asn Pro Gly Gly
      210              215              220
Thr Val Arg Arg Gln Met Tyr Thr Ser Tyr Leu Ile Gly Arg Asn Lys
  225              230              235              240
Val Tyr Leu Ala Asn Lys His Phe Gly Arg Leu Arg Gln Val Glu Leu
      245              250              255
Phe Leu Tyr His Phe Phe Leu Phe Ile Gly Gly Tyr Leu Lys Asn Ile
      260              265              270
Arg Asn Arg Glu Ala Gln Ala His Leu Ile Gln Phe Ile Lys Gly Ser
      275              280              285
Trp Asn Gly Leu Ile Gly Lys Met Ser Leu Val Gly Ile Ile Lys Gly
      290              295              300
Tyr
305

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<210> 9584
<211> 87
<212> PRT
<213> B.fragilis

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<400> 9584
Gly Ser Ile Leu Lys Tyr Leu Ser Leu Leu Pro Asn Gln Asn Tyr Ile
  1              5              10              15
Pro Met Phe Ser Ser Gly Asp Met Ser Glu Asp Arg Lys Ser Arg Tyr
      20              25              30
Ile Ser Tyr Leu Val Asp Tyr Val Asn Glu Thr Glu Leu Asp Lys Lys
      35              40              45
Ala Leu Glu Leu Val Leu Glu Asp Phe Leu Ser Ala Trp Asn Asp Met
      50              55              60
Lys Ala Glu Leu Ala Glu Leu Gln Arg Arg Gln Asp Glu Met Val Phe
      65              70              75              80
Gln Thr Thr Gly Val Ser Leu
      85

```

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<210> 9585
<211> 77
<212> PRT
<213> B.fragilis

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<400> 9585
Arg Asn Ser Met Leu Tyr Phe Gly Ser Asp Glu Gly Val Glu Met Val
  1              5              10              15
Ala Thr Tyr His Ser Leu Ile Ser Thr Val Lys Met Gln Gly Arg Phe
      20              25              30
Val Trp Glu Phe Leu Ser Lys Phe Phe Thr Asn Ile Phe Asn Gly Cys
      35              40              45
Arg Asp Tyr Leu Asn Leu Ser Pro Lys Ile Ser Asp Trp Thr Met Ala
      50              55              60

```

Ile Val Asn Lys Ser Leu Asn Leu Leu Thr Lys Gln Phe
 65 70 75

<210> 9586

<211> 327

<212> PRT

<213> B.fragilis

<400> 9586

Leu Lys Gly Ile Glu Tyr Met Asp Ile Val Lys Asp Tyr Lys Lys Val
 1 5 10 15
 Ile Glu Ile Thr Leu Gly Glu Val Val Ala Ser Pro Asp Phe Phe Val
 20 25 30
 Ser Val Gly Ala Ile Asp Tyr Gly Tyr Ile Ile Asp Asn Gly Cys Ile
 35 40 45
 Leu Pro Phe Tyr Ile Lys Lys Lys Phe Leu Phe Arg Tyr Met Ile Phe
 50 55 60
 Ser Thr Gly Ile Leu Asn Cys Ser Ser Ser Glu Gln Glu Gln Val Phe
 65 70 75 80
 Leu Asp Arg Leu Ile Pro Phe Val Lys Glu Ser Phe Lys Ile Asp Phe
 85 90 95
 Ile Leu Ser Gln His Val Asn Ala Leu Phe Ser Ile Val Pro Pro Arg
 100 105 110
 Ser Gln Tyr Cys Leu Phe Gly Ser Tyr Ile Leu Asp Leu Ser Leu Thr
 115 120 125
 Glu Asp Asp Ile Trp Ala Lys Met His Ser Lys His Arg Asn Val Ile
 130 135 140
 Arg Lys Ala Glu Lys Asp Gly Val Ile Ile Thr Cys Gly Asp Asp Asn
 145 150 155 160
 Lys Glu Glu Cys Ile Lys Leu Val Gln Asn Thr Leu Leu Arg Gln Gly
 165 170 175
 Ile Ala Pro Ile Asn Asp Asn Val Phe Ser Asn Leu Gly Asn Val Lys
 180 185 190
 Tyr Val Asp Tyr Trp Leu Ala Thr Leu Asn Asn Gly Ile Glu Gly Gly
 195 200 205
 Ala Ile Ile Tyr Trp His Pro Asn Cys Gly Ala Tyr Tyr Met Tyr Gly
 210 215 220
 Gly Ser Gly Glu Lys Pro His Thr Gly Ser Met Asn Leu Leu Gln Trp
 225 230 235 240
 Asn Val Ile Lys Lys Met Lys Glu Asn Asn Val Lys Phe Tyr Asp Phe
 245 250 255
 Met Gly Ala Arg Met Asn Pro Glu Val Gly Ser Lys Tyr Glu Gly Ile
 260 265 270
 Gln Arg Phe Lys Glu Arg Phe Gly Gly Glu Leu Lys Lys Gly Tyr Leu
 275 280 285
 Trp Lys Tyr Ser Leu Asn Asp Phe Lys Tyr Trp Leu Tyr Arg Leu Leu
 290 295 300
 Val Phe Ile Tyr Ser Lys Gly His Phe His Gly Asp Ile Ile Asp Gln
 305 310 315 320
 Glu Arg Lys Arg Gly Asn Ile
 325

<210> 9587

<211> 338

<212> PRT

<213> B.fragilis

<400> 9587

Trp Asn Leu Met Asn Ile Leu Ile Thr Gly Ala Tyr Gly Phe Val Gly

```

1           5           10           15
Thr Asn Leu Ile Asn Asn Leu Lys Ile Lys His Asn Leu Tyr Gly Leu
20           25           30
Asp Ile Val Cys Pro Thr Arg Glu Gly Val Leu Lys Thr Phe Tyr Trp
35           40           45
Lys Asp Ile Asn Pro Glu Ser Phe Ser Leu Gln Asn Leu Pro Lys Phe
50           55           60
Asp Ala Ile Ile His Leu Ala Gly Lys Ala His Asp Thr Lys Asn Gln
65           70           75           80
Ser Ala Ala Gln Ser Tyr Phe Asp Ile Asn Thr Ser Leu Thr Gln Lys
85           90           95
Ile Phe Asp Phe Phe Leu Glu Ser Ser Ala Lys Lys Phe Ile Phe Phe
100          105          110
Ser Ser Val Lys Ala Ala Ala Asp Ser Val Val Gly Asp Met Leu Thr
115          120          125
Glu Asp Val Ile Pro Ala Pro Val Gly Pro Tyr Gly Glu Ser Lys Ile
130          135          140
Arg Ala Glu Glu Tyr Ile Lys Glu His Phe Ala Phe Pro Ala Val Ser
145          150          155          160
Pro Cys Glu Cys Ser Pro Phe Arg Glu Met Thr Ser Val Thr Glu Lys
165          170          175
Gln Val Tyr Ile Leu Arg Pro Cys Met Ile His Gly Pro Gly Asn Lys
180          185          190
Gly Asn Leu Asn Leu Leu Tyr Asn Val Val Lys Lys Gly Ile Pro Trp
195          200          205
Pro Leu Gly Asp Phe Glu Asn Arg Arg Ser Phe Thr Ser Ile Asp Asn
210          215          220
Leu Cys Tyr Val Ile Glu Gly Leu Leu Thr Lys Glu Val Pro Thr Gly
225          230          235          240
Ile Tyr His Met Gly Asp Asp Glu Ala Leu Ser Thr Asn Glu Leu Ile
245          250          255
Ala Ile Met Cys Glu Ala Met Gly Lys Gln Pro His Ile Trp Lys Met
260          265          270
Asn Lys Gly Phe Met Glu Gly Cys Ala Gly Leu Gly Thr Leu Leu His
275          280          285
Leu Pro Leu Asn Thr Glu Arg Leu Arg Lys Leu Thr Glu Asn Tyr Val
290          295          300
Val Ser Asn Ala Lys Ile Lys Ala Ala Leu Gly Ile Asp Lys Met Pro
305          310          315          320
Val Thr Ala Lys Glu Gly Leu Ile Lys Thr Ile Arg Ser Phe Glu Glu
325          330          335
Thr Lys

```

<210> 9588

<211> 69

<212> PRT

<213> B.fragilis

<400> 9588

```

Gly His Thr Val Asp Gly Val Cys Ser Ser Ser Thr His Arg Thr Asp
1           5           10           15
Asp Ile Glu Gly Lys Ile Asp Arg His Ala Tyr Arg Pro Thr Asp Met
20           25           30
Arg Gly Val Leu Ile Lys Tyr Tyr Asp Ile Thr Val Gly Cys Ser Leu
35           40           45
Val Ile Glu Gly Pro Ala Glu Val Ala Leu His Trp Met Thr Gly Arg
50           55           60
Arg Thr Arg Glu Phe

```

65

<210> 9589

<211> 345

<212> PRT

<213> B.fragilis

<400> 9589

Tyr Met Thr Val Lys Lys Cys Val Leu Thr Leu Asp Tyr Glu Leu Phe
 1 5 10 15
 Phe Asp Lys Ser Gly Thr Pro Gln Val Ser Met Leu Asn Pro Thr Asp
 20 25 30
 Leu Leu Leu Asn Val Leu Glu Glu Thr Ser Ser Lys Ala Thr Phe Phe
 35 40 45
 Ile Asp Thr Ile Tyr Leu Asn Lys Leu Arg Asn Ser Asn Asp Ile Lys
 50 55 60
 Asn Lys Ile Leu Phe Asp Asn Ile Val Asn Gln Leu Lys Arg Ile Val
 65 70 75 80
 Lys Gln Gly Ser Arg Ile Glu Leu His Leu His Pro His Trp Ile Asp
 85 90 95
 Ala Tyr Gln Asn Gly Asp Gln Trp Val Phe Pro Ser Tyr Ala His Tyr
 100 105 110
 Lys Leu Gly Ser Leu Ser Asp Glu Thr Val Glu Cys Leu Phe Lys Glu
 115 120 125
 Gly Ile Leu Leu Leu Asn Glu Ile Ala Gln Ser Val Asp Arg Asp Tyr
 130 135 140
 Arg Ile Met Ala Phe Arg Ala Gly Gly Trp Cys Val Glu Pro Phe Thr
 145 150 155 160
 Lys Leu Arg Asn Leu Phe Val Ala Asn Asn Ile Leu Ile Asp Ser Ser
 165 170 175
 Val Val Ser Gly Met Lys Phe Ser Gly Glu Val His Asn Ile Asp Tyr
 180 185 190
 Ser Ser Ile Leu Pro Asn Thr His Tyr Tyr Phe Ser Asp Ser Val Tyr
 195 200 205
 Glu Gln Asn Ser Thr Gly Val Phe Leu Glu Ile Pro Ile Asn Gly Tyr
 210 215 220
 Gln Leu Ser Ala Leu Asn Lys Ile Val Trp Lys Met Lys Ser Ile Leu
 225 230 235 240
 Ala Gly Glu Lys Ala Lys Ile Tyr Gly Asp Gly Val Gly Met Gln Ser
 245 250 255
 Val Glu His Gln Thr Ile Leu Asn Lys Ile Leu Lys Leu Phe Val Gly
 260 265 270
 Gln Gly Gln Tyr Val Gln Tyr Ser Leu Asp Gly Tyr Ile Asp Ser Asp
 275 280 285
 Asn Leu Asn Asn Ala Ile Asn Asn Ser Lys Leu Ser Phe Ile Ser Leu
 290 295 300
 Val Ala His Pro Lys Thr Leu Thr Lys Ser Ser Leu Asp Ala Ile Lys
 305 310 315 320
 Tyr Leu Thr Asn Val Gly Cys Ser Phe Val Ser Ile Asp Asn Ile Tyr
 325 330 335
 His Asp Ile Leu Lys Tyr Asp Arg Phe
 340 345

<210> 9590

<211> 238

<212> PRT

<213> B.fragilis

<400> 9590

```

Met Ile Ser Val Cys Ile Ala Thr Tyr Asn Gly Ser Lys Tyr Ile Lys
1      5      10      15
Glu Gln Ile Asp Ser Ile Leu Pro Gln Leu Asp Glu Cys Asp Glu Ile
20      25      30
Ile Val Ser Asp Asp Ser Ser Thr Asp Asn Thr Leu Ser Ile Leu Lys
35      40      45
Ser Tyr His Asp Arg Arg Ile Ile Phe Thr Asn Gln Lys Phe Asn
50      55      60
Ser Pro Ile Tyr Asn Phe Glu Asn Ala Leu Lys His Ala Lys Gly Asp
65      70      75      80
Ile Ile Phe Leu Ser Asp Gln Asp Asp Ile Trp Glu Phe Asn Lys Val
85      90      95
Gln Val Met Ile Ser Phe Leu Gln Lys Lys Ser Leu Val Val Ser Asp
100     105     110
Cys Tyr Ile Ile Asn Gln Asp Lys Asn Val Ile Cys Asp Ser Leu Phe
115     120     125
Asn Gly Lys Val Pro Asn Ala Gly Val Phe Ile Asn Ile Leu Arg Asn
130     135     140
His Tyr Ile Gly Cys Cys Met Ala Phe Arg Arg Glu Ile Leu Asn Ala
145     150     155     160
Ala Leu Pro Phe Pro Ser Ser Leu Ala Met His Asp Ile Trp Leu Gly
165     170     175
Leu Cys Ala Ser Ala Phe Tyr Ser Ala Val Phe Ile Pro Asn Arg Leu
180     185     190
Ile Lys Tyr Arg Arg His Asn Thr Asn Ala Ser Pro Thr Leu Glu Asn
195     200     205
Ser Asn Leu Pro Leu Leu Tyr Arg Val Gln Tyr Arg Trp Thr Leu Ile
210     215     220
Ile Ala Leu Val Arg Arg Ala Leu Lys Ile Ser Lys His Leu
225     230     235

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<210> 9591

<211> 267

<212> PRT

<213> B.fragilis

<400> 9591

```

Tyr Ser Leu Thr Met Lys Ser Ser Met Ala Met Ile Lys His Lys Lys
1      5      10      15
Glu Leu Val Glu Tyr Ala Arg His Leu Lys Leu Pro Asn Leu Ala Glu
20      25      30
His Val Gly Val Ile Leu His Glu Ala Gln Glu Lys Gln Leu Thr Tyr
35      40      45
Ser Glu Phe Leu Ala Asn Cys Leu Ala Arg Glu Ile Gln Gly Arg Glu
50      55      60
Arg Lys Ser Tyr Leu Thr Arg Leu Lys Leu Ser Gly Leu Pro Ala Lys
65      70      75      80
Tyr Asp Leu Asp Leu Tyr Asp Tyr Asp Arg Ala Glu Gly Met Asp Asn
85      90      95
Arg Arg Leu Arg Glu Leu Arg Glu Leu Val Trp Val Asn Gln Ala Tyr
100     105     110
Asn Leu Leu Val Gly Pro Ser Ser Gly Thr Gly Lys Thr Phe Ile Ala
115     120     125
Ala Gly Leu Val Tyr Glu Ala Val Lys Ala Gly Tyr Glu Ala Tyr Leu
130     135     140
Met Thr Leu Glu Glu Leu Leu Thr Cys Leu Lys Thr Lys Glu Val Ser
145     150     155     160
Ala His Ala Met Lys Thr Tyr Lys Arg Ile Met Lys Ala Arg Leu Leu
165     170     175

```

Ala Ile Asp Asp Ala Thr Leu Phe Pro Leu Lys Arg Glu Glu Ala Val
 180 185 190
 Leu Leu Phe Lys Leu Val Asn Asp Phe Gln Glu Arg Thr Ser Leu Ile
 195 200 205
 Ile Thr Ala Asn Lys Ala Leu Thr Arg Trp Leu Glu Thr Leu Glu Asp
 210 215 220
 Glu Ala Val Thr Ala Ala Leu Leu Asp Arg Leu Leu Tyr Cys Cys Glu
 225 230 235 240
 Ile Ile Arg Leu Gly Gly Thr Ser Tyr Arg Met Gln Asn Arg Lys Thr
 245 250 255
 Ile Phe Ser Asn Gln Asn Thr Asp Ile Gly Thr
 260 265

<210> 9592

<211> 333

<212> PRT

<213> B.fragilis

<400> 9592

Arg Pro Asp Thr Gly Met Glu Thr Lys Ser Gln Asn Leu Lys Asp Lys
 1 5 10 15
 Leu Tyr Met Trp Tyr Lys Val Arg Glu Leu Gln Ser Lys Gly Leu Ser
 20 25 30
 Lys Thr Gln Ile Gly Lys Tyr Leu Gly Val Asp Arg Ser Thr Val Arg
 35 40 45
 Arg Tyr Leu Arg Thr Ser Arg Glu Glu Phe Phe Arg Lys Gln Asn Ser
 50 55 60
 His Arg Glu Tyr Glu Leu Lys Leu Gly Lys Tyr Glu Glu Tyr Val Arg
 65 70 75 80
 Gly Thr Leu Glu Glu Tyr Pro Tyr Ile Ser Ala Ala Arg Met His Asp
 85 90 95
 Trp Leu Arg Glu Cys Tyr Pro Asp Phe Pro Arg Val Cys Asp Lys Thr
 100 105 110
 Val Phe Asn Phe Val Asp Arg Ile Arg Arg Lys Tyr Gly Ile Gly Lys
 115 120 125
 Lys Ser Glu Ala Arg Ile Arg Arg Asp Tyr Glu Lys Leu Pro Glu Thr
 130 135 140
 Pro Tyr Gly Glu Tyr Ala Gln Ala Asp Phe Gly Glu Lys Trp Ile Pro
 145 150 155 160
 Val Lys Asn Gly Gly Ser Thr Lys Val Tyr Phe Phe Ala Ile Val Leu
 165 170 175
 Thr Arg Ser Arg Tyr Lys Phe Ile His Phe Ser Arg Arg Pro Phe Asp
 180 185 190
 Thr Glu Leu Ala Ile Tyr Ala His Glu Leu Ala Phe Gln Tyr Phe Gly
 195 200 205
 Gly Arg Pro Glu Lys Ile Ile Tyr Asp Gln Asp Arg Val Leu Ile Ala
 210 215 220
 Arg Glu Asn Leu Gly Asp Leu Ile Leu Thr Gly Lys Phe Gln Ser Phe
 225 230 235 240
 Ile Lys Glu Gln His Phe Gln Pro Val Phe Cys Arg Arg Ser Asp Pro
 245 250 255
 Glu Ser Lys Gly Lys Val Glu Asn Val Val Lys Tyr Val Lys Glu Asn
 260 265 270
 Phe Leu Val Ala Arg Val Leu Gln Asp Ile Pro Gly Leu Asn Glu Glu
 275 280 285
 Ala Arg Lys Trp Leu Glu Arg Thr Gly Asn Gly Lys Val His Gly Thr
 290 295 300
 Thr Arg Leu Val Pro Ser Glu Glu Phe Ala Val Glu Lys Gly Tyr Leu
 305 310 315 320

Asn Leu Ile Met Val Tyr Pro Ser His His Arg Ser Arg
 325 330

<210> 9593

<211> 592

<212> PRT

<213> B.fragilis

<400> 9593

Lys	Ser	Gly	Ala	Gln	Ile	Cys	Ala	Pro	His	Pro	Ile	Ser	Lys	Leu	Leu
1				5					10					15	
Arg	Leu	Val	Met	Leu	Leu	Ala	Val	Val	Leu	Leu	Leu	Ser	Ser	Cys	Arg
			20					25					30		
Gln	Asp	Asp	Asp	Ser	Tyr	Ser	Ser	His	Pro	Gly	Pro	Thr	Thr	Leu	Val
			35				40					45			
Ser	Leu	Ser	Val	Ser	Ala	Ser	Asn	Ser	Gly	Ala	Val	Ala	Ala	Ser	Asp
			50				55				60				
Asp	Pro	Ala	Ser	Ser	Ile	Arg	Asp	Leu	Cys	Ile	Leu	Gln	Phe	Asn	Val
65					70					75				80	
Asn	Gly	Thr	Gly	Phe	Gly	Asn	Leu	Arg	His	Val	Ala	Lys	Gly	Ser	Pro
				85					90					95	
Ala	Ser	Ala	Gly	Thr	Phe	Asn	Ala	Thr	Leu	Leu	Gln	Ser	Val	Asn	Pro
			100					105					110		
Asp	Asp	Lys	Tyr	Lys	Leu	Val	Leu	Leu	Ala	Asn	Leu	Pro	Asp	Tyr	Gly
		115					120					125			
Phe	Leu	Asn	Ser	Leu	Ser	Gly	Lys	Ser	Tyr	Asp	Gln	Val	Gln	Lys	Thr
	130					135					140				
Leu	Leu	Ser	Glu	Glu	Leu	Ser	Gly	Arg	Asn	Asn	Ile	Pro	Ser	Phe	Asp
145					150					155					160
Gly	Ser	Arg	Pro	Phe	Gln	Met	Phe	Gly	Val	Ala	Asn	Ser	Gly	Asn	Ser
				165					170					175	
Ile	Glu	Ile	Thr	Glu	Asn	Met	Ser	Leu	Ser	Asp	Val	Ser	Leu	Ile	Arg
			180					185					190		
Gly	Val	Ala	Arg	Val	Asp	Ile	Gly	Ile	Gly	Ile	Lys	Asn	Ala	Asp	Asp
		195					200					205			
Thr	Trp	Asn	Lys	Asn	Gly	Val	Lys	Phe	Asn	Met	Thr	Gln	Ile	Gln	Ile
	210					215						220			
Trp	Lys	Ala	Gly	Lys	Gln	Tyr	Ala	Tyr	Met	Pro	Ser	Glu	Asn	Asn	Phe
225					230					235					240
Ser	Ser	Thr	Gly	Arg	Val	Asp	Gly	Val	Thr	Ile	Thr	Gly	Pro	Ser	Pro
				245					250					255	
Val	Gly	Thr	Thr	Glu	Thr	Lys	Val	Tyr	Asp	Ile	Thr	His	Ile	Ile	Asn
			260					265					270		
Asn	Thr	Tyr	Cys	Cys	Gly	Lys	Ile	Tyr	Leu	Pro	Glu	Ala	Asp	Leu	Asn
		275					280					285			
Trp	Gly	Asp	Val	Tyr	Asp	Ala	Ser	His	Thr	Asp	Arg	Leu	Ala	Val	Ile
	290					295					300				
Val	Gly	Gly	Lys	Tyr	Asn	Gly	Ser	Gln	Thr	Glu	Thr	Phe	Tyr	Arg	Val
305					310					315					320
Asp	Phe	Lys	Asn	Asp	Val	Ser	Gly	Glu	Lys	Met	Asp	Ile	Leu	Arg	Asn
				325					330					335	
His	Val	Tyr	Arg	Phe	Thr	Val	Thr	Lys	Val	Thr	Asp	Asp	Gly	Tyr	Asp
			340					345					350		
Thr	Ala	Glu	Leu	Ala	Tyr	Lys	Ser	Ile	Pro	Lys	Asp	Ile	Ser	Phe	Thr
		355					360					365			
Ala	Glu	Leu	Thr	Pro	Trp	Thr	Phe	Pro	Pro	Ala	Val	Ser	Val	Pro	Ser
	370					375					380				
Ile	Ile	Gly	Tyr	Arg	Met	Val	Tyr	Gln	Asn	Thr	Asn	Gly	Gly	Met	Leu
385					390					395					400

Leu Trp Asn Thr Ala Thr Gly Leu Thr Ile Pro Lys Lys Arg Asp Thr
 405 410 415
 Trp Lys Gly Thr Lys Met Asn Phe Asn Tyr Asn Gly Phe Tyr Asp Glu
 420 425 430
 Thr Asn Asn Ala Tyr Ala Ile Thr Tyr Pro Ile Glu Pro Arg Asn Gly
 435 440 445
 Ser Leu Tyr His Thr Ile Glu Val Ala Phe Asp Tyr Glu Gly Val Tyr
 450 455 460
 Pro Ser Leu Met Val Ser Ala Asp Asp Val Thr Asp Val Thr Gly Gly
 465 470 475 480
 Asp Thr Asn Pro Trp Lys Thr Gly Lys Thr Leu Thr Ala Phe Asp Ile
 485 490 495
 Cys Arg Asn Tyr Glu Gly Asp Gly Phe Gly Asp Trp Arg Leu Pro Arg
 500 505 510
 Leu Ser Glu Leu Ala Leu Leu Tyr Leu Asn Arg Gly Ser Leu Glu Ala
 515 520 525
 Met Arg Gly Phe Ala Pro Leu Ser Gly Thr Tyr Trp Ser Gly Ser Glu
 530 535 540
 Tyr Leu Val Ser Asp Ser Lys Val Asp Lys Arg His Ser Glu Gln Ala
 545 550 555 560
 Trp Gly Ile Asn Phe Asp Ala Thr Asn Pro Gly Asn Ala Ala Pro Tyr
 565 570 575
 Asp Lys Thr Thr Lys Lys Phe Lys Ile Arg Cys Val Arg Gln Thr Gln
 580 585 590

<210> 9594
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 9594
 Gln Pro Lys His Gly Tyr Arg His Val Lys Arg Val Lys Glu Ser Glu
 1 5 10 15
 Ala Ser Ser Met Leu Glu Trp Asp Ile Leu Asn Tyr Leu Lys Lys Trp
 20 25 30
 Arg Thr Asn Leu Arg Ala Thr Pro Tyr Ile Glu Val Thr Ser Val Gly
 35 40 45
 Asn Ala Pro Cys Gly Gly Ala Val Ile Val Phe Leu Pro Ser Gly Arg
 50 55 60

<210> 9595
 <211> 214
 <212> PRT
 <213> B.fragilis

<400> 9595
 Gly Val Arg Cys Gly Lys Arg Ile Pro Glu Pro Tyr Tyr Gly Leu Pro
 1 5 10 15
 Glu Pro Pro Gln Glu Gln Met Lys Glu Tyr His Val Arg Lys Asp Asn
 20 25 30
 Thr Val Gln Tyr Arg Gly Asn Tyr Ser Leu Pro Cys Gly Thr Tyr
 35 40 45
 Arg Ser Gly Gln Thr Arg Val Trp Leu Gln Glu Thr Glu Gly Tyr Val
 50 55 60
 Glu Leu Tyr Ser Lys Glu Thr Gly Lys Ile Val Ala Arg His Pro Leu
 65 70 75 80
 Cys Thr Arg Lys Gly Lys Thr Ile Tyr Asp Glu Arg His Arg Arg Pro
 85 90 95
 Lys Ser Ile Gly Ala Gln Lys Leu Ala Glu Arg Ile Leu Val Tyr Val

```

          100          105          110
Ser Gly Asn Arg Glu Val Ala Leu Trp Met Glu Asn Leu Lys Arg Lys
          115          120          125
Lys Glu Arg Tyr Tyr Lys Asp Asn Leu Glu Val Val Leu His Met Met
          130          135          140
Pro Gly Tyr Asp Lys Asp Ile Leu Ile Glu Ala Val His Ile Cys Leu
145          150          155          160
Asp Lys Gly Ile Tyr Asn Gly Asp Ser Val Lys Ser Leu Cys Glu His
          165          170          175
Val His Arg Arg Arg Asn Lys Glu Thr Glu Thr Asp Arg Thr Asp Ser
          180          185          190
Cys Pro Pro Arg Gln Thr Gly Leu Ile Gln Ser Tyr Asn Glu Ile Phe
          195          200          205
His Gly Tyr Asp Lys Thr
          210

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<210> 9596

<211> 123

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (122), (123)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9596

```

Asn Pro Val Cys Thr Thr Asn Ala Val Asn Glu Lys Ile Ser Tyr Thr
1          5          10          15
Ile Asn Met Asp Thr Gln Lys Lys His Asn Leu Ser Gly Thr Ile Ile
          20          25          30
Leu Val Ser Cys Phe Leu Leu Leu Ala Gly Ala Cys Asp Asn Ser Asp
          35          40          45
Arg Ile Glu Thr Glu Thr Gln Ala Asn Gly Val Leu Asn Phe Asn
          50          55          60
Ala Ser Thr Ile Asp Ala Thr Thr Thr Glu Thr Arg Ser Phe Val Pro
65          70          75          80
Ile Glu Gly Phe Ala Lys Asn Glu Tyr Ile Phe Gly Met Ser Val Thr
          85          90          95
Lys Asp Asn Ala Ser Arg Gly Glu Ile Phe Glu Gly Cys Ser Met Val
          100          105          110
Val Ser Gly Gly Arg Ser Arg Gly Gln Xaa Xaa
          115          120

```

<210> 9597

<211> 72

<212> PRT

<213> B.fragilis

<400> 9597

```

Tyr Val Pro Phe Phe Phe His Lys Pro Tyr Gly Asp Ile Gly Ser Ser
1          5          10          15
Asp Gly Gly Lys Ala Thr Lys Asn Leu Arg Asn Asp Gln Gly Ile Ala
          20          25          30
Ser Val Cys Lys Gln Gly Pro Leu Leu Tyr His Lys Asp Gly Ile Arg
          35          40          45
Ile Pro Tyr Lys Gly Asp Phe Lys Asn Asn Pro His Thr Leu Leu Leu
          50          55          60
Gln Gln Glu Met Ile Arg Glu Asn

```

65

70

<210> 9598

<211> 752

<212> PRT

<213> B.fragilis

<400> 9598

Tyr Pro His Pro Met Thr Ile Glu Glu Ile Lys Asn Gln Val Leu Gln
 1 5 10 15
 Gly Thr Ala Ile Ser Arg Glu Gln Ala Gly Trp Leu Ala Leu Tyr Pro
 20 25 30
 Arg Lys Glu Glu Leu Tyr Asp Ala Ala His Glu Ile Thr Thr Ala Cys
 35 40 45
 Ala Ser Gln Glu Phe Asp Met Cys Ser Ile Ile Asn Ala Arg Ser Gly
 50 55 60
 Arg Cys Pro Glu Asn Cys Lys Trp Cys Ala Gln Ser Ser His Tyr Lys
 65 70 75 80
 Thr Lys Ala Asp Val Tyr Asp Leu Val Ser Ala Glu Glu Cys Leu Arg
 85 90 95
 Gln Ala Lys Tyr Asn Glu Ala Gln Gly Val Asn Arg Phe Ser Leu Val
 100 105 110
 Thr Ser Gly Arg Lys Pro Ser Pro Lys Asn Met Lys Glu Leu Cys Val
 115 120 125
 Ala Val Arg Arg Met Arg Arg His Ser Ser Ile Arg Leu Cys Ala Ser
 130 135 140
 Leu Gly Leu Leu Asp Glu Glu Glu Leu Gln Ala Leu Tyr Asp Ala Gly
 145 150 155 160
 Val Thr Arg Tyr His Cys Asn Leu Glu Thr Ala Pro Ser His Phe Asp
 165 170 175
 Ser Leu Cys Thr Thr His Thr Gln Glu Gln Lys Leu Lys Thr Leu Tyr
 180 185 190
 Ala Ala Arg Arg Val Gly Met Asp Leu Cys Cys Gly Gly Ile Ile Gly
 195 200 205
 Met Gly Glu Thr Val Glu Gln Arg Ile Glu Phe Ala Phe Thr Leu Arg
 210 215 220
 Asp Leu Asn Ile Gln Ser Ile Pro Ile Asn Leu Leu Gln Pro Ile Pro
 225 230 235 240
 Gly Thr Pro Leu Glu His Gln Ser Pro Leu Ser Glu Glu Glu Ile Leu
 245 250 255
 Thr Thr Val Ala Leu Phe Arg Phe Ile Asn Pro Ala Ala Tyr Leu Arg
 260 265 270
 Phe Ala Gly Gly Arg Ser Gln Leu Thr Pro Glu Ala Val Arg Lys Ser
 275 280 285
 Leu Tyr Ile Gly Ile Asn Ser Ala Ile Val Gly Asp Leu Leu Thr Thr
 290 295 300
 Leu Gly Ser Lys Val Ser Asp Asp Lys Glu Met Ile Leu Ser Glu Gly
 305 310 315 320
 Tyr His Phe Ala Asp Ser Gln Phe Asp Arg Glu His Leu Trp His Pro
 325 330 335
 Tyr Thr Ser Thr Ser Asn Pro Leu Pro Val Tyr Lys Val Lys Arg Ala
 340 345 350
 Asp Gly Ala Thr Ile Thr Leu Glu Ser Gly Gln Thr Leu Ile Glu Gly
 355 360 365
 Met Ser Ser Trp Trp Cys Ala Val His Gly Tyr Asn His Pro Ile Leu
 370 375 380
 Asn Gln Ala Val Gln Asp Gln Leu Ser Arg Met Ser His Val Met Phe
 385 390 395 400
 Gly Gly Leu Thr His Asp Pro Ala Ile Glu Leu Gly Lys Leu Leu Leu

			405					410				415			
Pro	Leu	Val	Pro	Pro	Ser	Met	Gln	Lys	Ile	Phe	Tyr	Ala	Asp	Ser	Gly
			420					425					430		
Ser	Val	Ala	Val	Glu	Val	Ala	Leu	Lys	Met	Ala	Val	Gln	Tyr	Trp	Tyr
		435					440					445			
Ala	Ala	Gly	Lys	Pro	Glu	Lys	Asn	Asn	Phe	Val	Thr	Ile	Arg	Asn	Gly
	450					455					460				
Tyr	His	Gly	Asp	Thr	Trp	Asn	Ala	Met	Ser	Val	Cys	Asp	Pro	Val	Thr
465					470					475					480
Gly	Met	His	Ser	Ile	Phe	Gly	Ser	Ala	Leu	Pro	Ile	Arg	His	Phe	Leu
			485						490					495	
Pro	Ala	Pro	Ser	Ser	Arg	Phe	Gly	Asp	Glu	Trp	Asn	Pro	Glu	Asp	Ile
		500						505					510		
Arg	Pro	Leu	Glu	His	Leu	Leu	Glu	Lys	His	Thr	Asp	Glu	Leu	Ala	Ala
	515						520					525			
Phe	Ile	Leu	Glu	Pro	Ile	Val	Gln	Gly	Ala	Gly	Gly	Met	Arg	Phe	Tyr
	530					535					540				
His	Pro	Glu	Tyr	Leu	Arg	Glu	Ala	Ala	Arg	Leu	Cys	His	Arg	Tyr	Gly
545					550					555					560
Val	Leu	Leu	Ile	Phe	Asp	Glu	Ile	Ala	Thr	Gly	Phe	Gly	Arg	Thr	Gly
			565						570					575	
Lys	Leu	Phe	Ala	Trp	Glu	His	Ala	Gly	Val	Glu	Pro	Asp	Ile	Met	Cys
			580					585					590		
Ile	Gly	Lys	Ala	Leu	Thr	Gly	Gly	Tyr	Met	Thr	Leu	Ser	Ala	Val	Leu
	595					600						605			
Thr	Thr	Asn	Glu	Val	Ala	Asp	Cys	Ile	Ser	Asn	His	Ala	Pro	Gly	Ala
	610					615					620				
Phe	Met	His	Gly	Pro	Thr	Phe	Met	Gly	Asn	Pro	Leu	Ala	Cys	Ala	Val
625					630					635					640
Ala	Cys	Ala	Ser	Val	Arg	Leu	Leu	Leu	Thr	Ser	Gly	Trp	Gln	Glu	Asn
			645						650				655		
Val	Lys	Arg	Ile	Glu	Ala	Gln	Leu	Asn	Arg	Glu	Leu	Ala	Pro	Ala	Arg
		660						665					670		
Glu	Leu	Pro	Gln	Val	Ala	Asp	Val	Arg	Val	Leu	Gly	Ala	Ile	Gly	Val
	675					680					685				
Ile	Glu	Met	Lys	Glu	Pro	Val	Asn	Met	Ala	Tyr	Leu	Gln	Arg	Arg	Phe
	690					695				700					
Val	Glu	Glu	Gly	Ile	Trp	Leu	Arg	Pro	Phe	Gly	Lys	Leu	Ile	Tyr	Val
705					710					715					720
Met	Pro	Pro	Phe	Ile	Ile	Thr	Pro	Glu	Gln	Leu	Thr	Lys	Leu	Thr	Glu
			725						730				735		
Gly	Met	Ile	Arg	Ile	Ile	Ser	Asn	Gly	Leu	Pro	Gly	Ser	Gln	Thr	Lys
		740						745					750		

<210> 9599

<211> 489

<212> PRT

<213> B.fragilis

<400> 9599

Lys	Thr	Lys	Pro	Thr	Val	Thr	Met	Lys	Arg	Lys	Ile	Ile	Tyr	Phe	Leu
1			5					10					15		
Leu	Ala	Leu	Ala	Val	Val	Met	Pro	Ala	Ser	Ala	Gln	Lys	Phe	Phe	Lys
		20					25					30			
Asp	Ala	Ile	Ser	Leu	Ser	Asp	Val	Ser	Leu	Trp	Gln	Gln	Gly	Asn	Ser
	35					40					45				
Leu	Tyr	Val	Asp	Met	Lys	Ile	Asp	Met	Lys	Asn	Leu	Thr	Val	Ser	Pro
	50					55				60					
Glu	Arg	Met	Leu	Thr	Leu	Thr	Pro	Leu	Leu	Thr	Asp	Gly	Gln	His	Asn

65					70					75					80
Val	Ala	Leu	Glu	Glu	Ile	Ile	Ile	Asn	Gly	Lys	Arg	Arg	Gln	Lys	Ala
				85					90				95		
Tyr	Leu	Arg	Gly	Leu	Ala	Ile	Ser	Arg	Glu	Leu	Pro	Ala	Gly	Ile	Val
			100					105					110		
Ile	Pro	Tyr	Asn	Lys	Arg	Glu	Val	Leu	Asn	Tyr	Ala	Gln	Val	Ile	Pro
		115					120					125			
Tyr	Glu	Pro	Trp	Met	Ala	Asn	Ala	Ser	Leu	Asn	Leu	Val	Glu	Asn	Leu
	130					135					140				
Cys	Gly	Cys	Gly	Asn	Asn	Glu	Glu	Met	Leu	Ala	Gln	Glu	Leu	Ile	Thr
145				150					155					160	
Asn	Asp	Val	Ser	Thr	Glu	Ala	Lys	Arg	Leu	Ser	Ala	Met	Ile	Pro	Val
			165						170				175		
Val	Ala	Tyr	Ile	Gln	Pro	Thr	Val	Glu	Val	Val	Lys	Asn	Arg	Ser	Glu
			180					185					190		
Gln	Tyr	Glu	Ala	His	Leu	Asp	Phe	Pro	Val	Ser	Lys	Ala	Val	Ile	Gln
		195					200					205			
Pro	Glu	Phe	Met	Asn	Asn	His	Lys	Glu	Leu	Met	Asn	Ile	His	Ala	Met
	210					215					220				
Phe	Asp	Lys	Ile	Gln	Asn	Asp	Lys	Asn	Leu	Thr	Val	Thr	Gly	Ile	Ser
225				230						235				240	
Ile	Glu	Gly	Phe	Ala	Ser	Pro	Glu	Gly	Pro	Leu	Lys	Phe	Asn	Glu	Gln
			245						250				255		
Leu	Ser	Gln	Lys	Arg	Ala	Glu	Ala	Leu	Lys	Asn	Tyr	Leu	Thr	Thr	Asn
		260						265					270		
Glu	Lys	Val	Pro	Gly	Lys	Leu	Tyr	Lys	Val	Thr	Phe	Gly	Gly	Glu	Asn
		275					280					285			
Trp	Asp	Gly	Leu	Val	Gln	Ala	Leu	Glu	Lys	Ser	Ser	Met	Lys	Asp	Lys
	290				295					300					
Asp	Lys	Phe	Ile	Gly	Ile	Ile	Lys	Asn	Thr	Thr	Asp	Asp	Ala	Arg	Arg
305					310					315				320	
Lys	Gln	Glu	Ile	Met	Arg	Val	Asp	Gly	Gly	Ala	Pro	Tyr	Arg	Thr	Met
			325						330					335	
Leu	Lys	Glu	Ile	Tyr	Pro	Gly	Leu	Arg	Lys	Val	Asn	Cys	Lys	Ile	Asp
		340						345					350		
Tyr	Thr	Val	Ala	Asn	Phe	Asp	Val	Glu	Gln	Gly	Arg	Val	Val	Ile	Lys
	355						360					365			
Val	Asn	Pro	Lys	Tyr	Leu	Ser	Leu	Asn	Glu	Met	Tyr	Gln	Val	Ala	Asn
	370					375					380				
Ser	Tyr	Pro	Lys	Gly	Ser	Asn	Asp	Phe	Val	Asn	Val	Phe	Asp	Ile	Ala
385				390						395				400	
Val	Arg	Met	Tyr	Pro	Asn	Asp	Glu	Val	Ala	Asn	Leu	Asn	Ala	Ala	Ala
			405						410					415	
Val	Ser	Leu	Thr	Lys	Lys	Asp	Leu	Glu	Asn	Ala	Ile	Lys	Tyr	Met	Asp
		420						425					430		
Lys	Ala	Asn	His	Gln	Thr	Ala	Glu	Phe	Ile	Asn	Asn	Val	Gly	Val	Tyr
	435						440					445			
Asn	Phe	Leu	Asn	Gly	Asp	Val	Gln	Arg	Ala	Ile	Ala	Ala	Phe	Asn	Gln
	450				455						460				
Ala	Ala	Gln	Met	Gly	Asn	Glu	Ala	Ala	Lys	Ala	Asn	Leu	Gln	Gln	Leu
465				470						475				480	
Gln	Gln	Ile	Leu	Asn	Met	Lys	Lys	Lys							
			485												

<210> 9600

<211> 190

<212> PRT

<213> B.fragilis

<400> 9600

```

Ile Thr Val Pro Ala Ile Pro Arg Thr Leu Ser Gly Lys Cys Leu Phe
1          5          10          15
Pro Tyr Arg Pro Pro Asn Trp Lys Thr Asn Leu Gly Arg Arg Ser Lys
20        25        30
Cys Arg Leu Val Lys Asn Arg Leu Pro Lys Cys Leu Thr Arg Thr Lys
35        40        45
Ser Met Asp Tyr Ser Cys Lys Gly Gln Phe Gly Asn Gly Leu Tyr Ser
50        55        60
Lys Leu Trp Gln Val Tyr Ser Arg Arg Val Leu Arg Gln Gly Arg Lys
65        70        75        80
Pro Phe Val Tyr Glu Thr Ser Gln Gly Leu Arg Gly Ile Asp Ala Ala
85        90        95
Gln Ala Met Thr Pro Asn Tyr Val Thr Trp Gly Gly Trp Thr Leu Arg
100       105       110
Gln Asn Tyr Leu Asp His Ile Asn Asn Ser Met Lys Leu His Gln Gln
115       120       125
Gln Cys Ile Tyr Ser Leu Glu Ser Asp Ala Gln Pro Gly Val Val Ser
130       135       140
Val Ala Ile Thr Asp Ala Ile Asp Leu Gln Lys Thr Tyr Val His Tyr
145       150       155       160
Asn Cys Gly Ile Arg Tyr Gly His Asp Ser Ala Arg Thr Asp Leu Lys
165       170       175
Met Ser Lys Met Val Trp Ile Asp Phe Arg Gln Trp Asp Asn
180       185       190

```

<210> 9601

<211> 140

<212> PRT

<213> B.fragilis

<400> 9601

```

Leu Ile Tyr Thr Leu Trp Thr Phe Trp His Ala Leu Cys Phe Leu Phe
1          5          10          15
Ser Ile Lys Val Val Leu Ile Ile His Thr Lys Lys Ile Thr Ile Met
20        25        30
Lys Lys Val Leu Val Ala Leu Ala Met Ile Met Gly Leu Gly Thr Ser
35        40        45
Val Ala Phe Ala Ser Val Ser Gly Asp Thr Leu Ala Val Glu Gln Thr
50        55        60
Leu Gln Thr Pro Gln Asp Glu Phe Thr Gln Ile Ala Ala Lys Glu Leu
65        70        75        80
Pro Ala Ala Val Ile Asn Ala Leu Ala Lys Asp Tyr Glu Gly Ala Ser
85        90        95
Ile Lys Glu Ala Phe Val Ser Glu Arg Glu Thr Gly Lys Val Tyr Lys
100       105       110
Val Ile Val Thr Val Ile Lys Glu Asp Gln Ser Thr Glu Asp Val Thr
115       120       125
Val Leu Leu Asn Glu Lys Gly Glu Ile Val Lys Glu
130       135       140

```

<210> 9602

<211> 454

<212> PRT

<213> B.fragilis

<400> 9602

```

Lys Lys Tyr Thr Ile Met Arg Tyr Asp Ile Ala Ile Ile Gly Gly Gly
1          5          10          15

```

Pro Ala Gly Tyr Thr Ala Ala Glu Arg Ala Gly Ala Asn Gly Leu Arg
 20 25 30
 Ala Val Leu Phe Glu Lys Lys Ala Met Gly Gly Val Cys Leu Asn Glu
 35 40 45
 Gly Cys Ile Pro Thr Lys Ala Leu Leu Tyr Ser Ala Lys Val Leu Asp
 50 55 60
 Gly Ile Lys Ser Ala Pro Lys Tyr Gly Val Ser Val Glu Gly Ala Pro
 65 70 75 80
 Ala Phe Asp Met Glu Lys Ile Ile Gly Arg Lys Asn Lys Thr Val Gln
 85 90 95
 Lys Leu Thr Gly Gly Val Arg Met Thr Val Asn Ser Tyr Gly Val Thr
 100 105 110
 Ile Val Asp Lys Glu Ala Val Ile Glu Gly Glu Gly Glu Glu Gly Phe
 115 120 125
 His Ile Arg Cys Asp Gly Glu Val Tyr Glu Ala Thr Tyr Leu Leu Val
 130 135 140
 Cys Thr Gly Ser Asp Thr Val Ile Pro Pro Ile Lys Gly Leu Ser Asp
 145 150 155 160
 Val Asp Tyr Trp Thr Ser Arg Glu Ala Leu Asp Ser Thr Val Leu Pro
 165 170 175
 Ser Ser Leu Ala Ile Ile Gly Gly Gly Val Ile Gly Met Glu Phe Ala
 180 185 190
 Ser Phe Phe Asn Ser Met Gly Val Arg Val Lys Val Ile Glu Met Met
 195 200 205
 Pro Glu Ile Leu Gly Ala Met Asp Lys Glu Thr Ser Ala Met Leu Arg
 210 215 220
 Ala Asp Tyr Thr Lys Lys Gly Val Asn Phe Tyr Leu Asn Thr Lys Val
 225 230 235 240
 Thr Glu Val Ser Asp Lys Gly Val Thr Val Glu Lys Asp Gly Lys Ser
 245 250 255
 Ser Phe Ile Asp Ala Asp Arg Ile Leu Val Ser Val Gly Arg Lys Ala
 260 265 270
 Asn Ile Thr Gln Val Gly Leu Asp Lys Leu Asn Ile Glu Leu His Arg
 275 280 285
 Asn Gly Val Val Val Asp Glu His Met Leu Thr Ser His Pro Arg Val
 290 295 300
 Tyr Ala Cys Gly Asp Ile Thr Gly Phe Ser Leu Leu Ala His Thr Ala
 305 310 315 320
 Ile Arg Glu Ala Glu Val Ala Ile Asn His Ile Leu Gly Ile Asp Asp
 325 330 335
 Arg Met Asp Tyr Asp Cys Val Pro Gly Val Val Tyr Thr Asn Pro Glu
 340 345 350
 Leu Ala Gly Val Gly Lys Thr Glu Glu Glu Leu Ile Ala Lys Gly Ile
 355 360 365
 Tyr Tyr Arg Ile Gln Lys Leu Pro Met Val Tyr Ser Gly Arg Phe Val
 370 375 380
 Ala Glu Asn Glu Leu Gly Asn Gly Leu Cys Lys Leu Ile Ile Asp His
 385 390 395 400
 Asn Asp Arg Ile Val Gly Cys His Met Leu Gly Asn Pro Ala Ser Glu
 405 410 415
 Ile Ile Val Val Ala Gly Ile Ala Ile Gln Arg Gly Tyr Thr Val Asp
 420 425 430
 Glu Phe Arg Lys Ser Val Phe Pro His Pro Thr Val Gly Glu Ile Tyr
 435 440 445
 His Glu Thr Leu Phe Ala
 450

<210> 9603

<211> 140

<212> PRT

<213> B.fragilis

<400> 9603

```

Pro Asp Ile Thr Ile Arg Leu Met Lys Lys Glu Arg Tyr Ile Ser His
1      5      10      15
Ser Phe Ile Arg Phe Arg Gln Trp Ser Arg Lys Ala Tyr Ala Ile Phe
20      25      30
Ala Thr Leu Gly Leu Cys Val Thr Ile Gly Gln Leu Arg Lys Asn Ile
35      40      45
Thr Glu Cys Ala Leu Cys Lys Gln Gln Thr Pro His Thr Thr Gly Leu
50      55      60
Asp Pro Gln Arg Glu Thr Glu Asp Ser Val Pro Glu Glu Asp Trp Glu
65      70      75      80
Asn Leu Thr Leu Ser Pro Glu Pro Leu Leu Leu Leu Thr Gln Leu
85      90      95
Gln Ser Ser Lys Tyr Ser Tyr Ala Gly Ala Ala Gln Ser Thr Val Val
100     105     110
Thr Ser Ala Ser His Ile Thr Pro Lys Glu Val Ala Ser His Pro Asp
115     120     125
Gly Thr Gly Asn Leu Phe Phe Asn Ile Pro Thr Leu
130     135     140

```

<210> 9604

<211> 60

<212> PRT

<213> B.fragilis

<400> 9604

```

Pro Gly Arg Thr Gly Ser Glu Asn Ala Leu Gly Arg Arg Asn Pro Asp
1      5      10      15
Ala Thr Thr Gln Arg Leu Lys Phe Thr Thr Lys Gly Thr Glu Gly Val
20      25      30
Ile Val His His Cys Val His Gly Leu Ala Arg Tyr Ile Phe Asn Leu
35      40      45
Leu Ile Ala Tyr Asp Ile Tyr Leu Tyr Asn Leu Trp
50      55      60

```

<210> 9605

<211> 129

<212> PRT

<213> B.fragilis

<400> 9605

```

Thr Phe Gly Thr Asp Ala Val Pro Asp Thr Ser Ala Ala Phe Gly Ala
1      5      10      15
Asp Ala Val Ser Thr Glu Pro Ala Val Ser Asp Ala Ser Pro Glu Pro
20      25      30
Ser Pro Ser Ile Ser Thr Met Ala Thr Thr Val Pro Thr Gly Thr Val
35      40      45
Ser Pro Ser Leu Asn Asn Ile Ser Thr Thr Phe Pro Ala Thr Gly Glu
50      55      60
Gly Ile Ser Ala Leu Thr Leu Ala Val Phe Thr Ser Lys Ser Thr Ser
65      70      75      80
Ser Ser Leu Thr Thr Ser Pro Thr Cys Thr Asp His Asp Lys Met Val
85      90      95
Pro Ser Val Ile Leu Ser Pro Asn Leu Gly Ile Phe Ile Ser Asn Leu
100     105     110
Ala Ile Tyr Thr Ile Ile Tyr Ser Phe Thr Cys Thr Ser Arg Thr Arg

```

115 120 125
 Leu

 <210> 9606
 <211> 1043
 <212> PRT
 <213> B.fragilis

 <400> 9606
 Gly Met Lys Thr Asn Leu Arg Leu Leu Phe Thr Leu Leu Phe Val Val
 1 5 10 15
 Ser Val Val Ala Leu Arg Ala Gly Thr Met Asn Asp Ile Arg Val Ser
 20 25 30
 Gly Thr Val Val Ser Glu Gly Asp Pro Leu Pro Gly Val Ser Val Leu
 35 40 45
 Val Lys Gly Thr Gly Val Gly Thr Ile Thr Gly Ile Asp Gly Lys Tyr
 50 55 60
 Ser Ile Asn Val Pro Ser Asp Gly Thr Leu Val Phe Ser Phe Ile Gly
 65 70 75 80
 Leu Lys Ser Val Glu His Lys Val Gly Gly Arg Ser Val Ile Asn Val
 85 90 95
 Glu Leu Val Pro Asp Ser Lys Gln Leu Glu Glu Val Met Val Val Ala
 100 105 110
 Tyr Ala Thr Ala Lys Lys Tyr Ser Phe Thr Gly Ala Ala Ser Thr Val
 115 120 125
 Lys Gly Asp Glu Ile Ala Lys Leu Gln Thr Ser Ser Val Ser Arg Ala
 130 135 140
 Leu Glu Gly Thr Val Ala Gly Leu Gln Ala Ser Ala Ala Ser Gly Gln
 145 150 155 160
 Pro Gly Thr Asp Ala Thr Ile Arg Ile Arg Gly Ile Gly Ser Ile Asn
 165 170 175
 Ala Ser Ser Ala Pro Leu Tyr Val Val Asp Gly Val Pro Tyr Asp Gly
 180 185 190
 Ser Val Asn Ser Ile Asn Pro Glu Asp Ile Ala Ser Met Thr Val Leu
 195 200 205
 Lys Asp Ala Ala Ser Ala Ala Leu Tyr Gly Ser Arg Gly Ala Asn Gly
 210 215 220
 Val Ile Ile Ile Thr Thr Lys Gln Gly Gln Ser Asp Ser Lys Thr Thr
 225 230 235 240
 Val Asn Val Lys Ala Ser Phe Gly Gly Ser Asn Arg Ala Val Arg Asp
 245 250 255
 Tyr Asp Arg Ile Gly Thr Asp Gln Tyr Phe Glu Leu Tyr Trp Glu Ala
 260 265 270
 Leu Arg Asn Gln Tyr Ala Leu Asp Thr Lys Asn Tyr Thr Pro Gln Thr
 275 280 285
 Ala Ala Ile Lys Ala Ser Lys Asp Leu Val Gly Lys Leu Met Gly Ala
 290 295 300
 Gly Pro Asn Pro Tyr Gly Ser Lys Tyr Pro Gln Pro Val Gly Thr Asp
 305 310 315 320
 Gly Lys Leu Ala Asp Gly Ala Val Pro Leu Trp Asn Phe Asp Trp Gln
 325 330 335
 Asp Ala Met Glu Gln Gln Ala Leu Arg Thr Glu Leu Gly Leu Asn Val
 340 345 350
 Ser Gly Gly Gly Lys Thr Asn Gln Tyr Tyr Phe Ser Ala Gly Tyr Leu
 355 360 365
 Asn Asp Lys Gly Ile Ala Leu Glu Ser Gly Tyr Glu Arg Phe Asn Leu
 370 375 380
 Arg Ser Asn Val Thr Ser Gln Met Thr Lys Trp Leu Arg Gly Gly Val


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Thr Thr Thr Asn Asp Tyr Ala Gln Ala Asp Tyr Tyr Tyr Thr Gly Lys
865      870      875      880
Ser Ser Leu Pro Lys Val Tyr Gly Gly Phe Asn Thr Ala Phe Ser Tyr
      885      890      895
Lys Gly Phe Glu Leu Ser Thr Ile Phe Ala Tyr Ser Ile Gly Asn Tyr
      900      905      910
Ile Val Asp Arg Asp Val Thr Met Leu Trp His Asn Gly Ser Ser Thr
      915      920      925
Gly Arg Ala Trp Ser Thr Glu Ile Leu Asn Arg Trp Thr Pro Glu Asn
      930      935      940
Arg Tyr Thr Asp Val Pro Ala Leu Lys Thr Val Ser Asn Ser Trp Asn
945      950      955      960
Ala Asn Ser Thr Arg Asn Leu Phe Asn Asn Ser Phe Leu Arg Met Lys
      965      970      975
Asn Ile Thr Leu Ser Tyr Asn Phe Pro Gln Pro Met Ile Lys Lys Ile
      980      985      990
Ser Leu Asn Ser Leu Gln Leu Phe Val Gln Ala Asp Asn Leu Leu Thr
      995      1000      1005
Val Ser Lys Asn Gln Gly Leu Asp Pro Glu Gln Asp Ile Ser Gly Leu
      1010      1015      1020
Thr Tyr Tyr Arg Tyr Pro Ala Met Arg Ser Ile Ser Gly Gly Ile Asn
1025      1030      1035      1040
Val Ser Phe

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<210> 9607
<211> 200
<212> PRT
<213> B.fragilis

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<400> 9607
Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1      5      10      15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20      25      30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
      35      40      45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
      50      55      60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65      70      75      80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
      85      90      95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
      100      105      110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
      115      120      125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
      130      135      140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145      150      155      160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
      165      170      175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
      180      185      190
Pro Phe His Gln Ala Asp Thr His
      195      200

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<210> 9608

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<211> 74
 <212> PRT
 <213> B.fragilis

<400> 9608

Arg	Ile	His	Phe	Ser	Asn	Met	Lys	Lys	Leu	Leu	Cys	Pro	Gln	Cys	Lys
1				5					10					15	
Ile	Ala	Gly	Met	Tyr	Val	Lys	Asn	Asp	Gln	Gly	Glu	Arg	Leu	Leu	Val
			20					25					30		
Tyr	Ile	Ala	Gln	Asp	Gly	Thr	Val	Val	Pro	Lys	Tyr	Pro	Glu	Ile	Pro
		35					40					45			
Ile	Glu	Gly	Phe	Asp	Phe	Thr	Glu	Val	Tyr	Cys	Leu	Gly	Cys	Ser	Trp
	50					55					60				
His	Gly	Ser	Pro	Lys	Gln	Leu	Thr	Arg	Phe						
65					70										

<210> 9609
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 9609

Lys	Arg	Asn	Leu	Lys	Phe	Asp	Pro	Val	Ile	Pro	Gln	Ser	Ser	Thr	Gly
1				5					10					15	
Leu	Thr	Val	Met	Ser	Phe	Val	Cys	Tyr	Ser	Met	Ala	Gly	Leu	Cys	Val
			20					25					30		
Leu	Lys	Tyr	Glu	Leu	Tyr	Cys	Cys	Pro	Ser	Val	Phe	Leu	Leu	Met	Val
		35					40					45			
Tyr	Glu	Gly	Glu	Ser	Val	Leu	Phe	Cys	Phe	Pro	Ala	Asp	Ser	Arg	Asn
	50					55					60				
Ile	Ile	Asp	Ile	Glu	Ser	Ala	His	Lys							
65					70										

<210> 9610
 <211> 522
 <212> PRT
 <213> B.fragilis

<400> 9610

Ser	Asp	Arg	Tyr	Asn	Ser	Thr	Ile	Tyr	Asn	Ser	Val	Gln	Tyr	Leu	Asp
1				5					10					15	
Ala	Thr	Val	Tyr	Arg	Tyr	Trp	Thr	Leu	Asp	Asp	Cys	Phe	Pro	Leu	Glu
		20						25					30		
Tyr	Phe	Leu	Ile	Leu	Leu	Arg	His	Lys	Phe	Ser	Ile	Arg	Lys	Arg	Leu
		35					40					45			
Asn	Ile	Gly	His	Ser	Leu	Ala	Gly	Ser	Tyr	Lys	Asn	Lys	Tyr	Leu	Tyr
	50					55					60				
His	Glu	Leu	Lys	Lys	Gly	Ser	Glu	Ser	Lys	Gly	Asp	Ala	Met	Asn	Thr
65				70						75				80	
Gly	Thr	Ile	Leu	Ile	Val	Asp	Asp	Asn	Lys	Gly	Val	Leu	Ala	Ser	Leu
			85					90					95		
Glu	Leu	Leu	Leu	Glu	Asn	Tyr	Phe	Ser	Lys	Ile	Leu	Thr	Ala	Ser	Asn
			100					105					110		
Pro	Asn	Gln	Ile	Thr	Ala	Leu	Leu	Thr	Thr	Arg	Arg	Ile	Asp	Val	Val
		115					120					125			
Ile	Leu	Asp	Met	Asn	Phe	Ser	Ala	Gly	Ile	Asn	Asn	Gly	Asn	Glu	Gly
	130					135					140				
Leu	Tyr	Trp	Leu	Gly	His	Ile	Arg	Gln	Met	Ala	Pro	Thr	Leu	Pro	Val
145					150					155					160

Val Met Leu Thr Ala Tyr Gly Asp Val Glu Leu Ala Val Lys Ala Leu
 165 170 175
 Lys Asn Gly Ala Ala Asp Phe Leu Leu Lys Pro Trp Asp Asn Gln Thr
 180 185 190
 Leu Ile Asp Lys Val Thr Glu Ala Tyr His Ser Arg Lys Ala Pro Glu
 195 200 205
 Arg Thr Ala Lys Val Asp Arg Ala Glu Gly Phe Glu Met Leu Val Gly
 210 215 220
 Arg Ser Pro Ala Met Leu Gln Leu Met Lys Val Val Ser Lys Val Ala
 225 230 235 240
 Arg Thr Asp Ala Asn Ile Leu Ile Thr Gly Glu Asn Gly Thr Gly Lys
 245 250 255
 Glu Ile Leu Ala Arg Glu Ile His Arg Leu Ser Pro Arg Gly Ala Arg
 260 265 270
 Pro Met Leu Asn Val Asp Met Gly Ala Ile Ser Glu Ser Leu Phe Glu
 275 280 285
 Ser Glu Leu Phe Gly His Glu Arg Gly Ala Phe Thr Asp Ala His Glu
 290 295 300
 Ser Arg Pro Gly Lys Phe Glu Ala Ala Asn Gly Ser Ser Leu Phe Met
 305 310 315 320
 Asp Glu Leu Gly Asn Leu Pro Leu Pro Leu Gln Thr Lys Leu Leu Thr
 325 330 335
 Val Leu Gln Ser Arg Asn Val Thr Arg Leu Gly Ser Asn Lys Val Ile
 340 345 350
 Pro Val Asp Ile Arg Leu Ile Ser Ala Thr Asn Lys Asp Ile Pro Glu
 355 360 365
 Met Val Lys Gln Gly Met Phe Arg Glu Asp Leu Phe Tyr Arg Ile Asn
 370 375 380
 Thr Ile His Leu Glu Leu Pro Pro Leu Arg Glu Arg Gly Asp Asp Ile
 385 390 395 400
 Leu Leu Phe Ile Asp Cys Phe Leu Arg Lys Phe Thr Ser Lys Tyr Gln
 405 410 415
 Arg Gln Glu Ile Arg Ile His Glu Gln Thr Val Glu Lys Leu Arg Ser
 420 425 430
 Tyr His Trp Pro Gly Asn Ile Arg Glu Leu Gln His Thr Ile Glu Lys
 435 440 445
 Ala Val Ile Leu Cys Glu Gly Ser Val Ile Arg Pro Lys Asp Ile Leu
 450 455 460
 Val Lys Gln Thr Trp Gln Pro Gln Ala Thr Ala Thr Val Pro Asn Leu
 465 470 475 480
 Glu Glu Val Glu Arg Ala Ile Glu Thr Ala Ile Leu Gln Asn Asn
 485 490 495
 Gly Asn Leu Thr Ala Ala Ala Glu Gln Leu Gly Val Ser Arg Gln Thr
 500 505 510
 Leu Tyr Asn Lys Leu Lys Arg Phe Lys Leu
 515 520

<210> 9611

<211> 459

<212> PRT

<213> B.fragilis

<400> 9611

Ile Ile Val Tyr Met Ala Arg Phe Glu Ile Lys Met Pro Lys Leu Gly
 1 5 10 15
 Glu Ser Ile Thr Glu Gly Thr Ile Leu Ser Trp Ser Val Gln Val Gly
 20 25 30
 Asp Val Val Asn Glu Asp Asp Val Leu Phe Glu Val Asn Thr Ala Lys
 35 40 45

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Val Ser Ala Glu Ile Pro Ser Pro Val Ala Gly Lys Val Val Glu Ile
50          55          60
Leu Phe Lys Glu Gly Asp Thr Val Pro Val Gly Thr Val Val Ala Ile
65          70          75          80
Val Asp Met Asp Gly Glu Gly Ser Gly Glu Ala Ser Glu Thr Ala Gly
85          90          95
Ser Val Glu Thr Ala Ser Ala Pro Lys Ala Ala Glu Val Ser Gly Thr
100         105         110
Ala Ser Val Pro Lys Val Gln Ala Glu Val Thr Ala Pro Lys Val Glu
115         120         125
Arg Trp Tyr Ser Pro Ala Val Leu Gln Leu Ala Arg Glu Ala Lys Ile
130         135         140
Ser Gln Glu Glu Leu Asp Ser Ile Pro Gly Thr Gly Tyr Glu Gly Arg
145         150         155         160
Leu Ser Lys Lys Asp Ile Arg Thr Tyr Ile Glu Met Lys Lys Gly Ala
165         170         175
Pro Ala Ala Asp Val Ser Thr Thr Val Val Ser Thr Val Ser Ala Asn
180         185         190
Asn Ser Gly Ser Ser Pro Val Pro Ser Ala Glu Val Gln Lys Lys Ala
195         200         205
Ala Ala Thr Ala Pro Gln Ala Gln His Gly Gln Ser Ala Ser Ala Val
210         215         220
Ser Ser Asp Ala Ser Val Glu Val Lys Glu Met Asp Arg Val Arg Arg
225         230         235         240
Ile Ile Ala Asp His Met Val Met Ser Lys Lys Val Ser Pro His Val
245         250         255
Thr Asn Val Val Glu Val Asp Val Thr Arg Leu Val Arg Trp Arg Glu
260         265         270
Lys Thr Lys Asp Asp Phe Phe Arg Arg Glu Gly Val Lys Leu Thr Tyr
275         280         285
Met Pro Ala Ile Ala Glu Ala Thr Ala Gln Ala Leu Ala Ala Tyr Pro
290         295         300
Gln Val Asn Val Ser Val Asp Gly Tyr Asn Ile Leu Tyr Lys Lys His
305         310         315         320
Ile Asn Val Gly Ile Ala Val Ser Gln Asp Asp Gly Asn Leu Ile Val
325         330         335
Pro Val Val His Asp Ala Asp Arg Leu Asn Leu Asn Gly Leu Ala Val
340         345         350
Ala Ile Asp Ser Leu Ala Lys Lys Ala Arg Val Asn Lys Leu Met Pro
355         360         365
Asp Asp Ile Asp Gly Gly Thr Phe Thr Ile Thr Asn Phe Gly Thr Phe
370         375         380
Lys Met Leu Phe Gly Thr Pro Ile Ile Asn Gln Pro Gln Val Ala Ile
385         390         395         400
Leu Gly Val Gly Val Ile Glu Lys Lys Pro Ala Val Val Glu Thr Pro
405         410         415
Glu Gly Asp Val Ile Ala Ile Arg His Lys Met Tyr Leu Ser Leu Ser
420         425         430
Tyr Asp His Arg Val Val Asp Gly Ser Leu Gly Gly Asn Phe Leu His
435         440         445
Phe Ile Ala Asp Tyr Leu Glu Asn Trp Lys Glu
450         455

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<210> 9612

<211> 68

<212> PRT

<213> B.fragilis

<400> 9612

His Gly Pro Gln Gln Gln Phe Gly Asn Tyr Gly Leu Ser Phe Leu Cys
 1 5 10 15
 Asn Met Ser Phe Tyr Ser Glu Leu Phe Ala Gly Thr Pro Leu Ala Phe
 20 25 30
 Asp Arg Arg Gln Gln Asp Ile Leu Val Ser Leu Leu Leu Lys Gly Tyr
 35 40 45
 Gln Trp Ile Val Trp Arg Gly Asn Trp Asp Val Thr Gly Leu Asn Arg
 50 55 60
 Lys Leu Phe Pro
 65

<210> 9613

<211> 289

<212> PRT

<213> B.fragilis

<400> 9613

Ile Val Leu Leu Gln Ile Lys Thr Pro Met Lys Tyr Phe Glu Phe Thr
 1 5 10 15
 Phe Asp Thr His Pro Cys Thr Glu Thr Val Asn Asp Val Leu Ala Ala
 20 25 30
 Val Leu Gly Glu Ala Gly Phe Glu Ser Phe Val Glu Arg Glu Gly Gly
 35 40 45
 Leu Thr Ala Tyr Ile Gln Gln Ser Leu Tyr Asn Glu Glu Thr Leu Lys
 50 55 60
 Thr Glu Leu Ala Asn Phe Pro Val Pro Asp Thr Glu Ile Ser Tyr Thr
 65 70 75 80
 Phe Ala Glu Ala Glu Asp Lys Asp Trp Asn Glu Glu Trp Glu Lys Asn
 85 90 95
 Phe Phe Gln Pro Ile Val Ile Gly Asp Arg Cys Val Ile His Ser Thr
 100 105 110
 Phe His Gln Asp Val Pro Lys Ala Glu Tyr Asp Ile Leu Ile Asn Pro
 115 120 125
 Gln Met Ala Phe Gly Thr Gly His His Glu Thr Thr Ser Leu Ile Ile
 130 135 140
 Gly Glu Leu Leu Asp Ser Glu Leu Thr Gly Lys Ser Leu Leu Asp Met
 145 150 155 160
 Gly Cys Gly Thr Ser Ile Leu Ala Ile Leu Ala Arg Met Arg Gly Ala
 165 170 175
 Lys Pro Cys Thr Ala Ile Asp Ile Asp Glu Trp Cys Val Arg Asn Ser
 180 185 190
 Ile Glu Asn Ile Glu Leu Asn Gly Val Thr Asp Ile Ala Val Ser Gln
 195 200 205
 Gly Asp Ala Ser Ala Leu Gln Gly Lys Gly Pro Phe Asp Val Val Ile
 210 215 220
 Ala Asn Ile Asn Arg Asn Ile Leu Leu Asn Asp Met Lys Gln Tyr Val
 225 230 235 240
 Ala Cys Met His Pro Gly Ser Glu Leu Phe Met Ser Gly Phe Tyr Ile
 245 250 255
 Asp Asp Ile Pro Ala Ile Arg Arg Glu Ala Glu Lys His Gly Leu Thr
 260 265 270
 Phe Val His His Gln Glu Lys Asn Arg Trp Ala Ala Val Lys Phe Val
 275 280 285
 Leu

<210> 9614

<211> 83

<212> PRT

<213> B.fragilis

<400> 9614

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9615

<211> 405

<212> PRT

<213> B.fragilis

<400> 9615

Ile Lys Leu Lys Asn Ile Thr Asn Met Asn Lys Asn Gln Glu Thr Glu
 1 5 10 15
 Arg Gly Glu Leu Thr Arg Phe Leu Asp Glu Leu Gln Leu Leu Lys Lys
 20 25 30
 Lys Asp Asn Phe Arg Thr Leu Pro Thr Leu Val His Gln Gly Lys Glu
 35 40 45
 Val Ile Ile Gly Gly Gln Arg Met Leu Asn Leu Ser Ser Asn Asp Tyr
 50 55 60
 Leu Gly Leu Ala Asn Asp Ser Gly Leu Leu Lys Ala Phe Trp Gln Thr
 65 70 75 80
 Val Lys Pro Glu Glu Ile Lys Phe Ser Ser Ser Ser Ser Arg Leu Leu
 85 90 95
 Thr Gly Asn Phe Ala Ala Tyr Asp Glu Leu Glu Ala Thr Leu Ser Ser
 100 105 110
 Leu Phe Gly Thr Glu Ala Ala Leu Val Phe Asn Cys Gly Tyr His Ala
 115 120 125
 Asn Thr Gly Ile Leu Pro Ala Val Cys Asp Thr Lys Thr Leu Ile Leu
 130 135 140
 Ala Asp Lys Leu Ile His Ala Ser Leu Ile Asp Gly Ile Arg Leu Ser
 145 150 155 160
 Asp Ala Lys Cys Ile Arg Tyr Arg His Asn Glu Tyr Ser Gln Leu Glu
 165 170 175
 Arg Leu Val Glu Thr Tyr His Lys Glu Tyr Glu Gln Ile Ile Ile Val
 180 185 190
 Thr Glu Ser Ile Phe Ser Met Asp Gly Asp Glu Ala Asp Leu Pro Arg
 195 200 205
 Leu Val Lys Leu Lys Arg Lys Tyr Pro Asn Val Leu Leu Tyr Leu Asp
 210 215 220
 Glu Ala His Ala Val Gly Val Arg Gly Thr Gly Gly Leu Gly Cys Ala
 225 230 235 240
 Glu Ala Tyr Gly Cys Ile Ser Asp Ile Asp Phe Leu Val Gly Thr Phe
 245 250 255
 Gly Lys Ala Leu Ala Ser Ser Gly Ala Tyr Ile Val Cys Arg Gln Val
 260 265 270
 Ile Arg Asp Tyr Leu Ile Asn Lys Met Arg Pro Phe Ile Phe Thr Thr
 275 280 285
 Ala Leu Pro Pro Val Thr Leu Gln Trp Thr Ser Phe Val Leu Arg His

290		295		300
Leu Ala Glu Tyr Gln	Glu Lys Arg Glu His	Leu Ala Ala Ile Ser Ser		
305	310	315		320
Asn Leu Arg Thr Gly	Leu Gln Glu Lys Gly Tyr	Phe Ser Ala Ser Ala		
	325	330		335
Ser Gln Ile Val Pro	Met Ile Ala Gly Glu Ser	Ser Ser Ala Val Arg		
	340	345		350
Met Ala Glu Glu Leu	Gln Arg Lys Gly Phe Tyr	Ala Leu Pro Val Arg		
	355	360		365
Pro Pro Thr Val Pro	Glu Gly Thr Ser Arg Ile	Arg Phe Ser Leu Thr		
	370	375		380
Ala Asp Val Thr Glu	Lys Glu Val Lys Arg Val	Ile Ala Thr Ile Arg		
385	390	395		400
Pro Val Ser Ser Lys				
	405			

<210> 9616

<211> 563

<212> PRT

<213> B.fragilis

<400> 9616

Ser Pro Glu Lys Gly	Cys Cys Asn His Met	Leu Arg Ser Gly	Leu Ile
1	5	10	15
Met His Lys Ser His	Ile Thr Asp Ile Val	Lys Tyr Lys Ile	Thr Asp
	20	25	30
Asp Met Arg Thr Ile	Arg Phe Asn Asn Asn	Arg His Ile Ser	Ser Ser
	35	40	45
Pro Leu Leu Arg Thr	Glu Gly Gly Arg Glu	Val Ser Val Ser	Asn Thr
	50	55	60
Ser Gly Asp Lys Ile	Pro Lys Gly Lys Phe	Ser Phe Leu Leu	Leu Phe
65	70	75	80
Phe Leu Leu Phe Leu	Gly Ser Cys Ser Ser	Asp Phe Leu Asp	Asn Lys
	85	90	95
Pro Thr Asp Ala Val	Asp Ser Gly Leu Val	Pro Val Pro Ser	Asn Ala
	100	105	110
Glu Arg Ile Phe Asn	Gly Ala Trp Tyr Asn	Leu Phe Glu Tyr	Gly Thr
	115	120	125
Thr Tyr Ala Asn Ile	Gly Tyr Arg Ala Leu	Met Cys Leu Asp	Asp Met
	130	135	140
Met Ala Asp Asp Val	Val Ser Arg Pro Met	Tyr Gly Phe Asn	Ser Ser
	145	150	155
Tyr Gln Phe Asn Asp	Val Val Met Pro Ser	Asp Gly Arg Thr	Thr Phe
	165	170	175
Ala Trp Tyr Leu Met	Tyr Lys Thr Ile Asp	Asn Cys Asn Thr	Ala Ile
	180	185	190
Ser Ile Gln Ala Thr	Gly Asp Asp Asp Thr	Pro Glu Phe Arg	His Ala
	195	200	205
Gln Gly Gln Ala Leu	Ala Val Arg Ala Phe	Cys Tyr Leu His	Leu Ala
	210	215	220
Gln His Tyr Gln Phe	Thr Tyr Leu Lys Asp	Lys Asn Ala Leu	Cys Val
	225	230	235
Pro Leu Tyr Thr Glu	Pro Thr Asn Pro Asn	Thr Lys Pro Lys	Gly Lys
	245	250	255
Ala Thr Leu Glu Glu	Ile Tyr Thr Gln Ile	Ile Asn Asp Leu	Asn Arg
	260	265	270
Ala Lys Gly Leu Leu	Asp Gly Tyr Val Arg	Pro Asn Asp Lys	Ser Lys
	275	280	285
Tyr Lys Pro Asn Thr	Asp Val Val Asn Gly	Leu Leu Ala Arg	Thr Tyr

290	295	300
Leu Leu Thr Gly Gln Trp Asp Glu Ala Ala Lys Ala Ala Leu Glu Ala		
305	310	315
Ala Lys Gly Tyr Thr Leu Met Thr Asp Ala Lys Asn Tyr Met Gly Phe		320
	325	330
Asn Asp Ile Ser Asn Thr Glu Trp Ile Trp Gly His Pro Gln Ser Val		335
	340	345
Ser Gln Ser Asp Ala Ser Tyr Asn Phe Tyr Tyr Leu Asp Val Val Glu		350
	355	360
Pro Asp Ser Tyr Asn Ser Phe Met Ala Asp Pro His Phe Lys Asp Thr		365
	370	375
Phe Thr Glu Gly Asp Ile Arg Leu Glu Leu Phe Gln Trp Met Arg Glu		380
385	390	395
Gly Tyr Leu Gly Tyr Arg Lys Phe Arg Ile Arg Ser Asp Gln Thr Gly		400
	405	410
Asp Ile Val Ile Met Arg Ser Ala Glu Met Tyr Leu Ile Ala Ala Glu		415
	420	425
Ala Leu Ala Arg Lys Gly Gln Leu Gly Glu Ala Val Lys Pro Leu Asn		430
	435	440
Thr Leu Arg Asn Ala Arg Gly Leu Ala Asp Tyr Asp Leu Thr Gly Lys		445
	450	455
Asn Gln Glu Gln Val Ile Asp Glu Ile Leu Met Glu Arg Arg Arg Glu		460
465	470	475
Phe Trp Gly Glu Gly Phe Gly Ile Thr Asp Val Leu Arg Thr Gln Arg		480
	485	490
Pro Val Val Arg Val Ala Leu Thr Glu Asp Glu Ala Ala Lys Glu Tyr		495
	500	505
Asp Cys Trp Gln Gln Asn Gly Thr Tyr Lys Lys Tyr His Pro Glu Gly		510
	515	520
His Trp Phe Thr Ser Phe Pro Asp Gly Thr Lys Phe Val Pro Asn Ser		525
	530	535
Ile Tyr Tyr Leu Tyr Ser Ile Pro Glu Lys Glu Thr Asn Ala Asn Pro		540
545	550	555
Asn Leu Lys		560

<210> 9617

<211> 555

<212> PRT

<213> B.fragilis

<400> 9617

Thr Tyr Met Asn Met Lys Thr Leu Phe Ile Phe Leu Phe Val Leu Leu		
1	5	10
Ala Phe Tyr Ser Cys Asp Thr Asp Glu Pro Ile Ser Ala Glu Asp Leu		15
	20	25
Ser Ala Ala Thr Gly Thr Asn Thr Asp Glu Val Asp Val Ala Ser Arg		30
	35	40
Ser Gly Ser Tyr Leu Ile Trp Leu Asn Gly Met Ser Ala Glu Thr Lys		45
	50	55
Lys Val Ala Asp Gln Leu Gln Thr Val Asn His Tyr Asp Lys Met Val		60
65	70	75
Ala Phe Asn Asp Leu Pro Gly Thr Asp Lys Val Glu Thr Leu Glu Thr		80
	85	90
Met Ala Lys Asp Ser Leu Asn Asp Leu Thr Ile Val Gly Ser Val Ala		95
	100	105
Asp Phe Ile Ala Gly Thr Tyr Ser Pro Glu Met Ile Gln Asp Ile Arg		110
	115	120
His Asn Arg Gln Gly Val Ile Leu Ile Ala Lys Asp Gly Lys Ala Gln		125

130	135	140
Asp Leu Lys Ala Gln Met	Leu Lys Leu Phe Gly Leu Tyr Val Asp Lys	
145	150	155
Gly Tyr Tyr Lys Val Ser Phe Pro Arg Glu Gln Arg Tyr Ala Tyr Tyr		160
	165	170
Asp Ala Asn Asp Pro Asp Ala Leu Lys Lys Leu Cys Gly Thr Gly Gly		175
	180	185
Leu Asn Pro His Thr Arg Ser Met Leu Gly Ser Pro Gly Pro Thr Asp		190
	195	200
Asp Pro Ser Ala Pro Glu Val Thr Glu Arg Ala Leu His Ala Met Lys		205
	210	215
Lys Ile Tyr Ile Ser Asn Arg Tyr Tyr Val Tyr Thr Ser Asp Tyr Lys		220
225	230	235
Tyr His Met Thr Gly Tyr Glu Thr Leu Leu Pro Tyr Thr Ala Asp Ile		240
	245	250
Lys Glu Tyr Leu Pro Arg Asp Asp Lys Lys Tyr Asp Gly Met Val Asp		255
	260	265
Arg Glu Trp Thr Ile Asp Ala Tyr Asn Leu Arg Ile Tyr Ala Pro Thr		270
	275	280
Asn Gly Asp Asn Met Leu Ala Val Tyr Ser Ser Gly Gly Asn Gly Phe		285
	290	295
Ser Asn Arg Leu Asp His Ser Leu Val Ser Leu Asn Asn Ala Pro Met		300
305	310	315
Tyr Glu Leu Trp Ala Leu Ile Trp Gly Leu Arg Asn Asn Ala Tyr Thr		320
	325	330
Lys Ile Asn Ile Arg Asp Asp Gln Ser Ser Gln Leu Asn Leu Lys Leu		335
	340	345
Ile Asp Phe Ala Pro Gly Leu Pro Glu Thr Glu Ser Thr Ile Glu His		350
	355	360
Ala Tyr Glu Lys Ser Val Gly Phe Asp Leu Gly Ala Thr Pro Val Leu		365
	370	375
Lys Gly Glu Tyr Arg Trp Gly Lys Ser Ile Thr Tyr Gln Leu Ala Glu		380
385	390	395
Met Thr Arg Glu Val Thr Arg Thr Ile Thr Asp Ala Glu Met Ser Tyr		400
	405	410
Cys Trp Lys Trp Tyr Pro Glu Thr Leu Phe Arg Gly Ser Lys Ala Met		415
	420	425
Asn Ala Glu Gly Met Ile Asp Ala Val Thr Met Ile Ser Pro Ala Trp		430
	435	440
Tyr Asp Ile Leu Tyr Asp His Val Ala Gly Thr Pro Gly Thr Asp Asn		445
	450	455
Pro Phe Cys Asp Tyr Asp Asn Asp Leu Gln Phe Asn Gln Asn Leu Leu		460
465	470	475
Asn Tyr Glu Gln Gln Cys Ala Ile Thr Ala Arg Thr Thr Gly Ala Ser		480
	485	490
Ala Gly Val Val Ala Ile Glu Ile Thr Asp Gly Met Val Leu Gln Arg		495
	500	505
Gly Gly Ala Trp Phe Thr Ser Trp Gly Ala Ala Val Ile His Ser Leu		510
	515	520
Pro Ser Ser Ala Gly Thr Ala Tyr Asn Thr Thr Val Asp Val His Lys		525
	530	535
Thr Thr Thr Val Trp Ile Asp Tyr Asn Asn Trp		540
545	550	555

<210> 9618

<211> 152

<212> PRT

<213> B.fragilis

<400> 9618

Cys Ile Met Asn Asn Ser Ile Leu Ile Asn Asn Val Gln Ile Phe Asp
 1 5 10 15
 Gly Ser Ser Glu Gln Thr Gly Arg Gly Asn Val Leu Val Val Asn Ser
 20 25 30
 Arg Ile Lys Thr Val Ser Glu Ser Pro Ile Pro Thr Asp Gly Ile Pro
 35 40 45
 Asn Val Thr Ile Leu Asp Gly Lys Gly Lys Phe Leu Met Pro Gly Leu
 50 55 60
 Ile Asp Ala His Trp His Ala Tyr Met Ser Cys Asn Thr Met Met Asp
 65 70 75 80
 Leu Leu Thr Ala Asp Thr Ala Tyr Thr Gln Phe Lys Ala Gly Gln Glu
 85 90 95
 Ala Arg Ala Thr Leu Leu Arg Gly Phe Thr Thr Ile Arg Asp Ala Gly
 100 105 110
 Gly Pro Val Phe Gly Leu Lys Arg Ala Ile Asp Glu Gly Ile Leu Ser
 115 120 125
 Gly Pro Arg Ile Tyr Pro Ser Gly Ser Leu Ile Ser Gln Thr Gly Gly
 130 135 140
 Ala Trp Arg Phe Pro Gly Gly Ile
 145 150

<210> 9619

<211> 441

<212> PRT

<213> B.fragilis

<400> 9619

Ile Asn Met Lys His Phe Ile Ser Phe Cys Thr Phe Leu Leu Phe Ser
 1 5 10 15
 Thr Leu Leu Phe Ala Gln Ala Glu Arg Ser Leu Asp Glu Cys Ile Arg
 20 25 30
 Ile Ala Trp Lys Gln Asn Pro Ser Leu Arg Asn Ser Gly Ile Asp Ile
 35 40 45
 Lys Glu Ala Arg Met Asp Tyr Ile Ser Ser Val Ala Ser Phe Leu Pro
 50 55 60
 Arg Val Ser Val Ser Ala Glu Ala Gly Arg Asn Phe Gly Arg Ser Ile
 65 70 75 80
 Asp Pro Asn Thr Asn Gly Tyr Thr Asn Asp Thr Phe Asp Glu Gly Thr
 85 90 95
 Val Gly Leu Asp Met Thr Leu Ser Leu Phe Glu Gly Phe Thr Arg Ile
 100 105 110
 Asn Arg Val Arg Phe Glu Lys Met Asn Arg Asn Arg Ser Glu Trp Ala
 115 120 125
 Leu Lys Glu Arg Arg Asn Glu Leu Ala Cys Gln Val Thr Asp Ala Tyr
 130 135 140
 Tyr Lys Leu Leu Leu Glu Glu Arg Met Leu Asp Leu Ala Leu Glu Gln
 145 150 155 160
 Ser Arg Leu Ser Glu Arg Tyr Leu Lys Gln Thr Glu Ala Phe Val Glu
 165 170 175
 Leu Gly Leu Lys Ser Val Ser Asp Leu Gln Glu Val Lys Ala Arg Arg
 180 185 190
 Glu Gly Asp Ile Tyr Arg Tyr Gln Ala Arg Gln Asn Gly Cys Arg Leu
 195 200 205
 Ala Leu Leu Arg Leu Lys Gln Leu Leu Asn Leu His Ala Glu Asp Thr
 210 215 220
 Leu Ala Val Gln Asp Thr Ile Asn Tyr Glu Leu Leu Ser Ala Tyr Pro
 225 230 235 240
 Leu Pro Gln Thr Glu Glu Leu Tyr Thr Gln Ser Leu Val Ala Met Pro

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<210> 9620
<211> 199
<212> PRT
<213> B.fragilis
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[illegible]

<210> 9621
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9621
 Ser Val Val Asn Tyr Asp Thr Leu Met His Ser Val Pro Asn Ala Thr
 1 5 10 15
 Tyr Phe Ile Pro Glu Ser Tyr Ser Tyr Arg Asn Asp Arg Ala Gly Leu
 20 25 30
 Pro Thr Ile Ile Phe Thr Val Trp Gln Ala Thr Val Thr Asn Glu Ile
 35 40 45
 Asn Ser Ile Asn Thr Thr Gly Thr Ala Lys Asn His Ile Phe Arg Ser
 50 55 60
 Val Arg Lys Ala
 65

<210> 9622
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 9622
 Arg Glu Val Glu Phe Glu Ile Glu Lys Ala Phe Ser Pro Phe Ser Cys
 1 5 10 15
 Lys Glu Gly Arg Lys Arg Leu Pro Phe Asn Lys Ile Ile Met Ile Lys
 20 25 30
 Thr Glu Lys Leu Ser Met Leu Phe Thr Thr Glu Glu Val Gln Thr Lys
 35 40 45
 Ala Leu Asn Glu Val Thr Met Gln Val Glu Gln Gly Glu Phe Val Ala
 50 55 60
 Ile Met Gly Pro Ser Gly Cys Gly Lys Ser Thr Val Leu Asn Ile Leu
 65 70 75 80
 Gly Thr Leu Asp Ser Pro Thr Ser Gly Ser Tyr Phe Phe Glu Gly Lys
 85 90 95
 Gln Val Asp Lys Met Ser Glu Asn Gln Leu Thr Ala Leu Arg Lys Gly
 100 105 110
 Asn Leu Gly Phe Ile Phe Gln Lys Leu Asn Leu Ile Asp Glu Leu Thr
 115 120 125
 Val Tyr Asp Asn Val Glu Leu Pro Leu Val Tyr Leu Gly Ile Lys Pro
 130 135 140
 Ala Val Arg Lys Glu Lys Val Lys Arg Val Leu Glu Lys Val Asn Leu
 145 150 155 160
 Leu His Arg Ala Ser His Phe Pro Gln Gln Leu Ser Gly Gly Gln Gln
 165 170 175
 Gln Arg Val Ala Ile Ala Arg Ala Val Val Thr Asp Cys Lys Leu Leu
 180 185 190
 Leu Ala Asp Glu Pro Thr Gly Asn Leu Asp Ser Val Asn Gly Val Glu
 195 200 205
 Val Met Glu Leu Leu Arg Glu Leu Asn Arg Gln Gly Thr Thr Ile Ile
 210 215 220
 Ile Val Thr His Ser Gln Arg Asp Ala Thr Tyr Ala His Arg Ile Ile
 225 230 235 240
 Arg Leu Leu Asp Gly Lys Ile Val Ala Glu Asp Ile Asn Arg Pro Leu
 245 250 255
 Thr Glu Thr Ser Gly Pro Asn Thr Glu Ser Val
 260 265

<210> 9623

<211> 74
 <212> PRT
 <213> B.fragilis

<400> 9623

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Glu Ser Arg Leu Val Ala Lys Asn Ile Asn Gln Ser Arg Ala Ser Phe
1          5          10          15
Lys Tyr Pro Phe Ser Arg Ile Ser Lys Lys Ala Ser Arg Phe His Ser
          20          25          30
Lys His Asn Thr Leu Ser Ile Ile Thr Leu Leu Leu Ser Lys Val Ser
          35          40          45
Leu Ser Gln Pro Gly Tyr Ala Gly Arg Asp Lys Asn Leu Thr Ile Phe
          50          55          60
Thr Lys Asp Thr Lys Lys Asn Lys Leu Leu
65          70

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<210> 9624

<211> 515

<212> PRT

<213> B.fragilis

<400> 9624

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Pro Met Lys Glu Leu Ile Asn Arg Leu Glu Glu Leu Asn Arg Gln Ala
1          5          10          15
Glu Lys Gly Gly Gly Asp Ala Arg Ile Glu Lys Gln His Ser Val Gly
          20          25          30
Lys Leu Thr Ala Arg Glu Arg Ile Asp Leu Leu Leu Glu Lys Gly Ser
          35          40          45
Phe Ile Glu Leu Asp Lys Leu Val Thr His Arg Cys Thr Asp Phe Gly
          50          55          60
Met Glu Lys Gln Lys Ile Ser Gly Asp Gly Val Val Thr Gly Tyr Gly
65          70          75          80
Met Ile Gly Lys Arg Leu Val Tyr Val Phe Ala Gln Asp Phe Thr Val
          85          90          95
Phe Gly Gly Ala Leu Ser Glu Thr Tyr Ala Arg Lys Ile Cys Lys Val
          100          105          110
Met Asp Met Ala Met Gln Met Gly Ala Pro Ile Ile Gly Leu Asn Asp
          115          120          125
Ser Gly Gly Ala Arg Ile Gln Glu Gly Val Arg Ser Leu Ala Gly Tyr
          130          135          140
Ala Glu Ile Phe Leu Arg Asn Ser Leu Ala Ser Gly Val Ile Pro Gln
          145          150          155          160
Ile Ser Ala Ile Met Gly Pro Cys Ala Gly Gly Ala Val Tyr Ser Pro
          165          170          175
Ala Leu Thr Asp Phe Ile Leu Met Val Lys Asn Ser Gly Tyr Met Phe
          180          185          190
Ile Thr Gly Pro Asp Val Val Lys Ser Val Thr Gln Glu Glu Val Ser
          195          200          205
Lys Glu Asp Leu Gly Gly Ala Asp Val His Thr Met Lys Ser Gly Val
          210          215          220
Ala His Leu Ser Ala Glu Asn Asp Ile Glu Cys Ile Asn Tyr Ile Arg
          225          230          235          240
Glu Leu Ile Ser Tyr Leu Pro Gly Asn Asn Met Glu Glu Pro Pro Phe
          245          250          255
Val Ala Thr Thr Asp Ser Pro Thr Arg Leu Thr Pro Glu Leu Ser Asp
          260          265          270
Leu Val Pro Thr Asn Pro Asn Gln Pro Tyr Asp Met Lys Glu Met Ile
          275          280          285
Arg Ala Val Ala Asp Asp Asn Ser Phe Phe Glu Leu Gln Glu Glu Phe

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290 295 300
 Ala Arg Asn Ile Val Ile Gly Tyr Ile Arg Leu Asn Gly Lys Thr Ile
 305 310 315 320
 Gly Val Val Ala Asn Gln Pro Leu Ala Leu Ala Gly Thr Leu Asp Ile
 325 330 335
 Asn Ala Ser Val Lys Ala Ala Arg Phe Val Arg Phe Cys Asp Ala Phe
 340 345 350
 Asn Ile Pro Leu Leu Thr Leu Val Asp Val Pro Gly Phe Leu Pro Gly
 355 360 365
 Val Asp Gln Glu Tyr Gly Gly Ile Ile Arg Asn Gly Ala Lys Leu Leu
 370 375 380
 Tyr Ala Tyr Cys Glu Ala Thr Val Pro Lys Val Thr Val Ile Ala Arg
 385 390 395 400
 Lys Ala Tyr Gly Gly Ala Tyr Asp Val Met Ser Ser Lys His Ile Arg
 405 410 415
 Gly Asp Val Asn Leu Ala Tyr Pro Thr Ala Glu Ile Ala Val Met Gly
 420 425 430
 Pro Asp Gly Ala Val Asn Ile Leu Phe Arg Lys Glu Ile Asp Lys Ala
 435 440 445
 Ala Asp Thr Glu Ala Arg Arg Lys Glu Leu Gln Asp Asp Tyr Arg Ser
 450 455 460
 Lys Phe Ala Asn Pro Tyr Arg Ala Ala Glu Leu Gly Tyr Val Asp Glu
 465 470 475 480
 Val Ile Asp Pro Ala Ile Thr Arg Met Arg Leu Ile Arg Ser Phe Glu
 485 490 495
 Met Leu Ala Asn Lys Arg Gln Ser Asn Pro Pro Lys Lys His Ser Asn
 500 505 510
 Leu Pro Leu
 515

<210> 9625

<211> 229

<212> PRT

<213> B.fragilis

<400> 9625

Gln Lys Arg Asp Lys Lys Asn Asp Leu Arg Val Ser Asn Lys Arg Ser
 1 5 10 15
 Met Lys Lys Asn Val Tyr Phe Ile Ser Gly Ile Asp Thr Asp Ala Gly
 20 25 30
 Lys Ser Tyr Ala Thr Gly Phe Leu Ala Arg Glu Leu Asn Arg Lys Gly
 35 40 45
 Gln Arg Thr Ile Thr Gln Lys Phe Ile Gln Thr Gly Asn Thr Gly His
 50 55 60
 Ser Glu Asp Ile Asp Leu His Arg Arg Ile Met Gly Ile Ala Pro Thr
 65 70 75 80
 Asp Asp Asp Arg Glu Gly Leu Thr Met Pro Glu Ile Phe Ser Tyr Pro
 85 90 95
 Cys Ser Pro His Leu Ala Ser Arg Ile Asp Gly Arg Pro Ile Asp Phe
 100 105 110
 Asp Lys Ile Glu Arg Ala Thr Glu Glu Leu Ser Arg Arg Tyr Asp Val
 115 120 125
 Val Leu Leu Glu Gly Ala Gly Gly Leu Met Val Pro Leu Thr Asp Glu
 130 135 140
 Leu Leu Thr Ile Asp Tyr Ile Ala Gln Lys Glu Tyr Pro Leu Leu Phe
 145 150 155 160
 Val Thr Ser Gly Lys Leu Gly Ser Ile Asn His Thr Leu Leu Ser Leu
 165 170 175
 Glu Ala Ile Lys Asn Arg Gly Ile Lys Leu Asp Thr Val Leu Tyr Asn

180 185 190
 Leu Tyr Pro Thr Val Glu Asp Arg Thr Ile Gln Glu Asp Thr Gln Leu
 195 200 205
 Phe Ile Gln Arg Tyr Leu Lys Lys Asp Phe Pro Glu Thr Lys Phe Cys
 210 215 220
 Met Val Pro Glu Leu
 225

<210> 9626
 <211> 509
 <212> PRT
 <213> B.fragilis

<400> 9626
 Ser Arg Gly Glu His Arg Met Ile Lys Lys Ile Leu Val Ala Asn Arg
 1 5 10 15
 Gly Glu Ile Ala Met Arg Ile Phe Arg Thr Cys Arg Val Met Asn Ile
 20 25 30
 Ala Thr Val Ala Ile Tyr Thr Trp Val Asp Arg Gly Ala Leu His Val
 35 40 45
 Arg Tyr Ala Glu Glu Ala Tyr Cys Ile Ser Asp Ser Pro Glu Asp Thr
 50 55 60
 Ser Tyr Leu Lys Pro Glu Lys Ile Leu Gln Ile Ala Lys Lys Thr Gly
 65 70 75 80
 Ala Ala Ile His Pro Gly Tyr Gly Phe Leu Ser Glu Asn Ala Asp Phe
 85 90 95
 Ala Arg Arg Cys Glu Glu Glu Gly Val Ile Phe Ile Gly Pro Ser Ala
 100 105 110
 Asp Ile Ile Ala Arg Met Gly Ile Lys Thr Glu Ala Arg Arg Ile Met
 115 120 125
 Arg Glu Ala Gly Leu Pro Ile Val Pro Gly Thr Glu Asp Pro Val Lys
 130 135 140
 Gly Ile Ala Glu Ala Lys Lys Val Ala Ala Glu Val Gly Tyr Pro Ile
 145 150 155 160
 Met Leu Lys Ala Leu Ala Gly Gly Gly Gly Lys Gly Met Arg Leu Val
 165 170 175
 Arg Ser Glu Glu Glu Met Glu Thr Ala Leu Arg Leu Ser Gln Ser Glu
 180 185 190
 Ala Gly Thr Ser Phe Gly Asn Asp Ala Val Tyr Ile Glu Lys Tyr Ile
 195 200 205
 Glu Asn Pro His His Ile Glu Val Gln Ile Leu Gly Asp Lys Tyr Gly
 210 215 220
 Asn Val Ile His Leu Tyr Glu Arg Glu Cys Ser Ile Gln Arg Arg Asn
 225 230 235 240
 Gln Lys Val Ile Glu Glu Ser Pro Ser Pro Phe Val Lys Pro Glu Thr
 245 250 255
 Arg Ala Lys Met Leu Lys Val Ala Val Glu Ala Cys Lys Arg Ile Asn
 260 265 270
 Tyr Tyr Ser Ala Gly Thr Leu Glu Phe Met Met Asp Lys Asp Gln Asn
 275 280 285
 Phe Tyr Phe Leu Glu Met Asn Thr Arg Leu Gln Val Glu His Pro Val
 290 295 300
 Thr Glu Glu Cys Thr Gly Val Asp Leu Val Arg Asp Met Ile Leu Val
 305 310 315 320
 Ala Ala Gly Asn Arg Leu Pro Tyr Arg Gln Glu Asp Val Glu Phe Arg
 325 330 335
 Gly Ala Ala Ile Glu Cys Arg Ile Tyr Ala Glu Asp Pro Glu Asn Asn
 340 345 350
 Phe Met Pro Ser Pro Gly Val Ile Thr Val Arg Glu Ala Pro Glu Gly

355 360 365
 Arg Asn Val Arg Leu Asp Ser Ala Ala Tyr Ala Gly Phe Glu Val Ser
 370 375 380
 Leu His Tyr Asp Pro Met Ile Ala Lys Leu Cys Cys Trp Gly Arg Asn
 385 390 395 400
 Arg Asp Ser Ala Ile Ser Asn Met Ala Arg Ala Leu Arg Glu Tyr Lys
 405 410 415
 Ile Leu Gly Ile Lys Thr Thr Ile Pro Phe His Gln Arg Val Leu Lys
 420 425 430
 Asn Ala Ala Phe Leu Lys Gly Glu Tyr Asp Thr Thr Phe Ile Asp Thr
 435 440 445
 Arg Phe Asp Lys Glu Asp Leu Lys Arg Arg Gln Asn Thr Asp Pro Thr
 450 455 460
 Val Ala Val Ile Ala Ala Ala Leu Lys His Tyr Glu Glu Glu Lys Glu
 465 470 475 480
 Ala Ala Ser Arg Ala Thr Thr Leu Pro Val Val Gly Asp Ser Leu Trp
 485 490 495
 Lys Tyr Tyr Gly Lys Leu Gln Met Thr Ala Asn Asn Tyr
 500 505

<210> 9627

<211> 417

<212> PRT

<213> B.fragilis

<400> 9627

Leu Ser Met Asp Thr Met Ile Glu Arg Lys Pro Gly Met Lys Arg Lys
 1 5 10 15
 His Tyr Tyr Ala Val Ala Gly Ala Val Val Leu Val Gly Leu Val Phe
 20 25 30
 Tyr Phe Ile Phe Arg Asp Thr Ser Ser Ser Met Asn Val Glu Lys Asp
 35 40 45
 Arg Leu Thr Ile Ala Thr Val Thr Arg Gly Glu Phe Ser Asp Tyr Ile
 50 55 60
 Arg Val Ile Gly Gln Val Met Pro Asn Arg Ile Ile Tyr Met Asp Ala
 65 70 75 80
 Ile Glu Gly Gly Arg Val Glu Glu Arg Leu Lys Glu Glu Gly Ala Ile
 85 90 95
 Val Lys Ala Gly Asp Val Ile Leu Arg Leu Ser Asn Pro Leu Leu Asn
 100 105 110
 Ile Gly Ile Met Gln Ser Glu Ala Asp Leu Ala Tyr Gln Glu Asn Glu
 115 120 125
 Leu Arg Asn Thr Arg Ile Ser Met Glu Gln Glu His Leu Arg Leu Lys
 130 135 140
 Gln Glu Arg Ile Gly Leu Asn Lys Glu Leu Ala Val Lys Gln Arg Arg
 145 150 155 160
 Tyr Glu Gln Tyr Ser Arg Leu Ile Lys Glu Gln Leu Ile Ala Gln Glu
 165 170 175
 Glu Phe Arg Leu Ala Ala Glu Glu Tyr Glu Ala Ala Arg Ala Gln Leu
 180 185 190
 Glu Val Ile Asp Glu Arg Ile Arg Gln Asp Asn Phe Phe Arg Glu Ser
 195 200 205
 Gln Ile Ser Ser Leu Asp Glu Asn Ile Arg Asn Met Lys Arg Ser Leu
 210 215 220
 Ala Leu Val Arg Glu Arg Val Glu Asn Leu Lys Val Lys Ala Pro Ile
 225 230 235 240
 Asp Gly Gln Val Gly Asn Leu Asp Ala Gln Ile Gly Gln Ser Ile Ala
 245 250 255
 Ala Gly Glu His Ile Gly Gln Ile Ile Thr Pro Asp Leu Lys Val Gln

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      260      265      270
Ala Leu Ile Asp Glu Tyr Tyr Val Glu Arg Val Val Pro Gly Leu Pro
      275      280      285
Ala Asp Phe Thr Arg Asp Gly Gly Asn Tyr Lys Leu Glu Val Thr Lys
      290      295      300
Pro Tyr Pro Glu Val Lys Glu Gly Gln Phe Arg Thr Asp Leu Gln Phe
305      310      315      320
Thr Ala Gly Arg Pro Glu Asn Ile Arg Ala Gly Gln Thr Tyr His Ile
      325      330      335
Asn Leu Gln Leu Gly Asp Pro Ala Gln Ala Ile Leu Val Pro Arg Gly
      340      345      350
Gly Phe Phe Gln Ile Thr Gly Gly Arg Trp Met Tyr Val Leu Asp Glu
      355      360      365
Ser Gly Lys Phe Ala Thr Arg Arg Pro Ile Arg Ile Gly Arg Gln Asn
      370      375      380
Pro Gln Tyr Tyr Glu Val Thr Glu Gly Leu Lys Pro Gly Asp Arg Val
385      390      395      400
Ile Ile Ser Gly Tyr Glu Leu Phe Gly Asp Asn Glu Arg Leu Asn Leu
      405      410      415
Lys

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<210> 9628
<211> 118
<212> PRT
<213> B.fragilis

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<400> 9628
Ala Ser Ile Arg Phe Thr Phe Ser Cys Gln Pro Glu Val Arg Ser Asn
1      5      10      15
Arg Thr Asp Ala Gln Ala Thr Ala His Ala Asn Gly Phe Pro Ile Asn
      20      25      30
Val Gly Pro Cys Met Asn Ala Pro Gly Ala Trp Leu Glu Met Gln Ser
      35      40      45
Ala Thr Ser Leu Val Val Ser Thr Ala Asp Lys Val Met Tyr Pro Pro
      50      55      60
Val Asn Ala Leu Pro Met His Met Met Ser Gly Ser Thr Pro Ala Cys
      65      70      75      80
Ser Gln Ala Lys Ser Phe Pro Val Arg Pro Asn Pro Val Ala Ile Ser
      85      90      95
Ser Lys Ile Asn Ser Thr Pro Tyr Arg Trp Gln Arg Arg Ala Ala Ser
      100      105      110
Leu Lys Tyr Ser Gly Trp
      115

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<210> 9629
<211> 242
<212> PRT
<213> B.fragilis

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<400> 9629
Asn Leu Ser Arg Asp Ile Val Cys Leu Met Arg Phe Ile Asn Ser Ser
1      5      10      15
Phe Thr Asp Ala Gly Phe Asn Leu Ala Ala Glu Glu Tyr Leu Leu Lys
      20      25      30
Gln Gly Thr Glu Asp Val Phe Met Leu Trp Gln Ser Ala Pro Ser Val
      35      40      45
Ile Ile Gly Lys His Gln Arg Val Glu Thr Glu Val Asn Arg Met Met
      50      55      60

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Ala Glu Gln Asn Lys Ile Pro Val Phe Arg Arg Phe Ser Gly Gly Gly
65 70 75 80
Ala Val Tyr His Asp Leu Gly Asn Ile Asn Leu Thr Phe Ile Glu Thr
85 90 95
Thr Cys Leu Ala Arg Phe Glu Thr Tyr Leu Glu Arg Thr Val Glu Met
100 105 110
Leu Thr Ala Ala Gly Val Ala Val Arg Gly Asp Glu Arg Leu Gly Ile
115 120 125
Tyr Val Asp Gly Arg Lys Val Ser Gly Ser Ala Gln Cys Val His Arg
130 135 140
Asn Arg Ala Met Tyr His Cys Thr Leu Leu Tyr Asp Thr Asn Leu Val
145 150 155 160
Leu Leu Asn Lys Leu Leu Glu Val Glu Gly Leu Glu Glu Lys Val Ala
165 170 175
Val His Pro Ala Val Arg Ser Val Arg Ser Glu Val Thr Asn Leu Lys
180 185 190
Glu Tyr Met His Pro Ala Leu Ser Thr Asp Lys Phe Arg Glu Trp Val
195 200 205
Phe Arg Tyr Phe Ala Gly Pro Ser Val Ala Glu Ala Phe Ser Lys Glu
210 215 220
Glu Leu Ala Ile Ile Glu Gly Leu Arg Glu Asn Lys Tyr Asn Thr Ile
225 230 235 240
Cys Asn

<210> 9630

<211> 68

<212> PRT

<213> B.fragilis

<400> 9630

Val Ala Ser Arg Cys Glu Trp Val Thr Met Ile Met Val Val Pro Cys
1 5 10 15
Arg Phe Asn Ser Arg Asn Asn Ser Ile Thr Ser Thr Pro Phe Thr Glu
20 25 30
Ser Arg Phe Pro Val Gly Ser Ser Ala Ser Asn Asn Leu Gln Ser Val
35 40 45
Thr Thr Ala Arg Ala Met Ala Thr Arg Cys Cys Cys Pro Pro Glu Ser
50 55 60
Cys Cys Gly Lys
65

<210> 9631

<211> 174

<212> PRT

<213> B.fragilis

<400> 9631

Leu Lys Lys Arg Ser Ile Met Lys Lys Ile Gly Ile Phe Tyr Ala Ala
1 5 10 15
Lys Ala Asp Lys Thr Ser Trp Val Ala Glu Lys Ile Gln Lys Glu Phe
20 25 30
Gly Thr Ser Ala Glu Ser Val Ala Ile Glu Asn Ala Trp Gln Asn Asp
35 40 45
Phe Glu Ala Tyr Asp Asn Phe Ile Val Gly Ala Ser Thr Trp Phe Asp
50 55 60
Gly Glu Leu Pro Thr Tyr Trp Asp Glu Leu Leu Pro Glu Leu Arg Thr
65 70 75 80
Leu Gln Leu Lys Gly Lys Lys Val Ala Ile Phe Gly Leu Gly Asp Gln

	85		90		95
Val Lys Tyr	Pro Glu Asn Phe Ala Asp Gly	Val Gly Leu Leu Ala Glu			
	100		105		110
Val Phe Glu	Asn Asp Gly Ala Thr Leu Val Gly Phe Thr Ser Ile Asp				
	115		120		125
Gly Tyr Ser Phe Glu Arg Ser Gln Ala Leu Lys Gly Asp Lys Trp Cys					
	130		135		140
Gly Leu Val Ile Asp Ile Glu Asn Gln Ser Glu Met Thr Asp Lys Arg					
145	150		155		160
Ile Lys Asp Trp Cys Arg Gln Val Lys Lys Glu Phe Glu Val					
	165		170		

<210> 9632

<211> 810

<212> PRT

<213> B.fragilis

<400> 9632

His Arg Glu Arg Met Ile Gly Asn Tyr Trp Asn Ser Ala Tyr Arg Asn					
1	5		10		15
Leu Met Lys Arg Lys Gly Phe Ser Phe Ile Asn Val Phe Gly Leu Ala					
	20		25		30
Val Gly Met Ala Ser Ala Leu Leu Ile Leu Thr Tyr Val Thr Phe Glu					
	35		40		45
Phe Ser Phe Asp Lys Met His Gln Lys Tyr Glu Arg Ile Phe Arg Val					
	50		55		60
Glu Ser Thr Phe Tyr Glu Gly Glu Val Gln Thr Asp Tyr Trp Ala Ser					
65	70		75		80
Ser Ser Phe Gly Tyr Gly Ser Ala Met Lys Glu Asn Leu Ala Gly Ile					
	85		90		95
Glu Asp Tyr Thr Arg Val Val Ser Leu Tyr Gln Pro Glu Gln Ile Val					
	100		105		110
Lys Tyr Gly Glu Leu Thr Leu Arg Glu Asn Gln Ile Ala Tyr Ala Asp					
	115		120		125
Pro Gly Phe Phe Arg Leu Phe Asp Phe Glu Leu Val Lys Gly Asp Lys					
	130		135		140
Ala Thr Cys Leu Ser Met Pro Arg Gln Val Val Ile Thr Glu Arg Ile					
145	150		155		160
Ala Arg Lys Tyr Phe Gln Asp Glu Asp Pro Ile Gly Lys Ile Leu Ile					
	165		170		175
Phe Thr Gly Pro Tyr Asp Lys Val Ile Cys Glu Val Thr Gly Val Met					
	180		185		190
Lys Glu Met Pro Ser Asn Ser His Ile His Tyr Asn Phe Leu Ile Ser					
	195		200		205
Tyr Lys Ser Leu Gly Gln Tyr Leu His Asp Tyr Trp Tyr Lys His Glu					
	210		215		220
Val Tyr Thr Tyr Val Leu Leu Asp Ser Pro Glu Arg Lys Glu Glu Ile					
225	230		235		240
Glu Lys Ala Phe Pro Ala Met Ser Glu Lys Tyr Lys Thr Asp Glu Ala					
	245		250		255
Leu Lys Asn Lys Ile Trp Gly Val Ser Leu Thr Pro Leu Ala Asp Ile					
	260		265		270
His Leu Lys Pro Gln Val Gly Tyr Glu Ala Glu Ile Lys Gly Asn Arg					
	275		280		285
Thr Ala Met Ile Ala Leu Ile Phe Ala Ala Ile Ala Ile Leu Ala Ile					
	290		295		300
Ala Trp Ile Asn Tyr Ile Asn Leu Thr Val Ala Arg Ser Met Glu Arg					
305	310		315		320
Ala Lys Glu Val Gly Val Arg Arg Val Ile Gly Ala Phe Arg Lys Gln					

Gly Lys Pro Ala Arg Ser Leu Arg Tyr Glu
805 810

<210> 9633
<211> 513
<212> PRT
<213> B.fragilis

<400> 9633
Met Phe Leu Arg Arg Ile Arg Leu Pro Leu Val Gly Lys His Leu Lys
1 5 10 15
Thr Ala Tyr Gln Ala His Thr Gly Tyr Gly Arg Ile Asp His Leu Val
20 25 30
His Val Ala Gln Leu Gly Ser Pro Val Gly Val Gly Lys Leu Ala Ala
35 40 45
Ile Val Ile Leu Gln Leu Phe Thr Pro Gly Phe Ser Val Gly Ser Phe
50 55 60
Val Asn Leu Phe Ala Glu Lys Asn Val His Arg Ser Ile Gly Ala His
65 70 75 80
His Gly Tyr Phe Gly Ser Gly Ile Ser Gln Ile His Ile Ser Pro Asp
85 90 95
Val Leu Gly Thr His Tyr Ile Ile Ser Ser Ala Ile Ser Phe Thr Gly
100 105 110
Asn His Arg Asn Leu Arg His Arg Ser Phe Thr Ile Gly Ile Lys Gln
115 120 125
Leu Gly Thr Val Ala Asp Asp Ala Ala Ile Leu Leu Ile Tyr Pro Arg
130 135 140
Lys Glu Ser Arg Tyr Ile Tyr Gln Cys Glu Gln Trp Asn Ile Glu Arg
145 150 155 160
Ile Ala Glu Thr Asp Lys Thr Gly Cys Phe Asn Arg Gly Ile Asp Ile
165 170 175
Glu Arg Ser Gly Gln Cys Gln Arg Leu Ile Gly His His Pro Tyr Arg
180 185 190
Leu Pro Val Gln Ala Asn Ile Thr Asp Asn Asp Val Thr Gly Lys Leu
195 200 205
Phe Leu Gln Phe Lys Glu Thr Val Ile Val Arg His Cys Thr Asp His
210 215 220
Leu Phe His Ile Ile Arg Leu Ile Arg Ile Gly Arg His Gln Ile Arg
225 230 235 240
Gln Phe Gly Arg Lys Pro Arg Arg Arg Ile Gly Ser Ser Asn Lys Arg
245 250 255
Arg Leu Phe His Ile Ile Ser Gly Gln Ile Arg Asn Gln Phe Thr Asn
260 265 270
Val Ile Asp Ala Phe Asn Ile Ile Phe Gly Arg Glu Val Cys His Pro
275 280 285
Arg Leu His Gly Met Asp Ile Arg Pro Ser Gln Ile Phe Phe Ala Asp
290 295 300
Phe Phe Leu Cys His Ala Leu His His Ile Gly Thr Gly Asp Lys His
305 310 315 320
Ile Thr Gly Ile Phe His His Gln Asp Lys Ile Gly Gln Cys Arg Arg
325 330 335
Ile Asp Arg Pro Thr Arg Thr Arg Thr His Asp Gly Thr Asp Leu Arg
340 345 350
Asp Asp Thr Gly Ser Gln Arg Ile Thr Gln Lys Tyr Leu Arg Ile Thr
355 360 365
Gly Gln Arg Thr Asp Ser Leu Leu Asn Thr Gly Ser Ser Arg Ile Val
370 375 380
Gln Pro Asp Asp Gly Cys Ser His Leu His Ser His Ile His His Phe
385 390 395 400

Thr Asn Leu Pro Gly Ile Arg Phe Gly Gln Cys Thr Ala Lys Asn Gly
 405 410 415
 Glu Val Leu Ser Lys Asn Ile His Lys Pro Phe Ala Asp His Thr Ile
 420 425 430
 Ser Gly Tyr Asn Ser Ile Thr Gly Tyr Phe Leu Phe Leu His Thr Glu
 435 440 445
 Ile Arg Thr Thr Met Gly His Gln Phe Ile Glu Phe Asn Lys Arg Ser
 450 455 460
 Phe Leu Gln Lys Gln Val Asp Thr Phe Thr Cys Arg Gln Phe Ser Asp
 465 470 475 480
 Arg Met Leu Phe Leu Asp Thr Gly Val Ser Thr Thr Phe Phe Gly Leu
 485 490 495
 Pro Val Gln Leu Phe Gln Ala Ile Asp Lys Leu Phe His Arg Leu Leu
 500 505 510
 Phe

<210> 9634

<211> 144

<212> PRT

<213> B.fragilis

<400> 9634

Arg Lys Trp Leu Val Thr Gly Lys Val Tyr Asp Val Asp Tyr Asn Val
 1 5 10 15
 Gly Gly Asp Ser Ile Tyr Ser Ile Ile Ile Asn His His Ser His Gly
 20 25 30
 Val Gln Ile Ser Pro Thr Ser His Ser Ser Tyr Thr Ile Met Asn Lys
 35 40 45
 Gly Glu Leu Tyr Gln Ile Glu Leu Lys Gly Glu Leu Glu Lys Ile His
 50 55 60
 Asn Ala Arg Ser Gly Ala Asp Ala Val Gly Arg Gln Val Val Val Ala
 65 70 75 80
 Pro Met Pro Gly Val Ile Leu Lys Thr Tyr Val Arg Lys Gly Asp Glu
 85 90 95
 Val Lys Lys Gly Asp Pro Leu Cys Val Leu Val Ala Met Lys Met Glu
 100 105 110
 Asn Glu Ile Arg Ser Val Ala Asp Gly Val Val Lys Glu Ile Phe Val
 115 120 125
 Glu Glu Asn Thr Lys Val Gly Leu Asn Asp Arg Ile Met Val Val Glu
 130 135 140

<210> 9635

<211> 433

<212> PRT

<213> B.fragilis

<400> 9635

Asp Glu Asp Gly Gln Ser Gly Glu Thr Thr Asp His Asp Thr Lys His
 1 5 10 15
 Leu Val Leu Thr Ile Leu Met Ile Glu Glu Leu Ile Glu Lys Glu Glu
 20 25 30
 Val Ile Ala Gly Ile Leu Glu Ile Ala Met Pro Asp Leu Leu His Leu
 35 40 45
 Arg Asn Gln Phe Leu Arg Val Ala Gly Leu His His Asn Gly Asp Val
 50 55 60
 Ala Leu Arg Gln Pro Thr Asp Leu Ile Phe Val Asp Gln His Asn Arg
 65 70 75 80
 Gly Ile Ile Leu Val Glu Cys Leu Leu Met Val Val Leu His His Ser

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      85              90              95
Asp Asn Leu His Arg Gly Ile Gly Thr Phe His Leu Tyr Leu Phe Ala
      100              105              110
Glu Ser Leu Phe Val Arg Gly Asn Ser Gln Val Thr Asp Ser Arg Leu
      115              120              125
Val Asp His Gln Leu Ile His Ile Val Ser Ile Ile Phe Gly Glu Ser
      130              135              140
Ala Pro Cys His Gln Leu Gln Ser Ile Ser Ile Asn Ile Ile Arg Val
      145              150              155              160
Ala Tyr Gln His Phe Ile Lys Ala Ile Leu Leu Gln Ser Ile Thr Leu
      165              170              175
Ser Pro Val Arg Gln Glu Gly Ser His Leu Phe Ala Arg His Gly Thr
      180              185              190
Arg Glu Gly Asn Phe Val Tyr Gln Arg Gln Ala Gly Asn Gly Leu Leu
      195              200              205
His Gly Phe Glu Phe Arg Val His Ala Phe Gly Pro Ser Gly Lys Phe
      210              215              220
Asp Asn Gln Ser Leu Val Arg Leu His Ser Gln Arg Leu Ile Ala His
      225              230              235              240
Glu Val Gln Leu Arg Lys His Asn Gln Cys Ala Ala Glu Gln Asn His
      245              250              255
Arg Cys Arg Val Leu Asn Asp Tyr Gln Tyr Phe Ala Ser Ala Phe Ala
      260              265              270
Arg Leu Ala Val Gln Glu Leu Ser Leu Gln Gln Arg Asn Arg Phe Pro
      275              280              285
Val Glu Lys Arg Gln Cys Arg Ile Val Thr Gly Glu Glu Asn Ser Pro
      290              295              300
Tyr Lys Tyr Asp Gln Lys Gln Lys Pro Pro Val Ser Arg Gln Pro Asn
      305              310              315              320
Gly Glu Ser Tyr Arg Thr Ala Tyr Gln Leu Ile Glu Val Trp Gln Asp
      325              330              335
Gln Leu Asp Gln Ser His Cys Gln Tyr Gln Cys Asn Gln Val His Asp
      340              345              350
Gln Gly Leu Lys Gln Glu Leu Arg Tyr Lys Leu Leu Ala Glu Ser Ser
      355              360              365
Tyr Tyr Pro Ala His Ser Tyr Leu Leu Gly Thr Phe His Arg Ala Gly
      370              375              380
His Ser Gln Val Asp Ile Ile Asp Pro Gly Asn Ser Gln Asn Gly Asn
      385              390              395              400
Cys Ser Lys Asp Gln Gly Asp His Gly Arg Thr Val Ser Leu Asp Phe
      405              410              415
Gly Leu Val Thr Asn Leu Arg Phe Lys Met Asn Ile Gly Lys Arg Cys
      420              425              430
Gln

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<210> 9636

<211> 502

<212> PRT

<213> B.fragilis

<400> 9636

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Gln Gln Tyr Gly Leu Tyr His Gln Ser Asn Lys Leu Met Lys Leu Lys
1      5      10      15
Arg Leu Tyr Pro Pro Gln Lys Ser Val Asn Ser Leu His Ser Glu Thr
20      25      30
Gly Thr Gly Cys Glu Val Ala Gly Cys Pro Pro Leu Arg Lys Glu Ala
35      40      45
Leu Leu Phe Phe Ala Gly Trp Gly Met Asp Glu Thr Pro Phe Met His

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50	55	60
Asn Leu Pro Pro Asn Lys Asp Leu Ile Ile Cys Tyr Asp Tyr Arg Ser		
65	70	75
Leu Asp Phe Asp Ser Thr Leu Leu Ser Thr Tyr Asp Gly Ile Tyr Val		80
	85	90
Val Ala Trp Ser Met Gly Val Trp Ala Ala Ser Gln Val Leu Pro Asp		95
	100	105
Ser Asn Leu Pro Leu Lys Gln Ser Ile Ala Ile Asn Gly Thr Pro Phe		110
	115	120
Pro Ile Asp Asp Met Arg Gly Ile Pro Pro Ala Ile Phe Glu Gly Thr		125
	130	135
Leu Asn Asn Leu Asn Glu Ala Thr Leu Gln Lys Phe Arg Arg Arg Met		140
	145	150
Cys Gly Ser Gly Ser Ala Phe Gln Ala Phe Leu Glu Ile Ala Pro Gln		155
	165	170
Arg Pro Val Glu Glu Leu Lys Glu Glu Leu Val Ala Ile Gly Arg Gln		175
	180	185
Tyr Ser Glu Leu Pro Pro Ser Thr Phe Val Trp Asn Lys Ala Ile Ile		190
	195	200
Gly Glu Ser Asp His Ile Phe Pro Pro Lys Asn Gln Glu Gln Ala Trp		205
	210	215
Gln Lys Tyr Cys Asn Glu Ile Gln Arg Tyr Asp Gly Ala His Tyr Asp		220
	225	230
Glu Lys Ile Leu Lys Glu Asn Leu Ala Pro Ala Ala Ser Ser Lys Leu		235
	245	250
Leu Ile Ala Gln Arg Phe Thr Lys Ala Ile Gly Thr Tyr Pro His Glu		255
	260	265
Ala Arg Val Gln Gln Gln Ile Ala Arg Lys Met Cys Ser Leu Leu Gln		270
	275	280
Gln His Leu Pro Ala His Ser Leu Arg Arg Val Val Glu Phe Gly Cys		285
	290	295
Gly Thr Gly Thr Tyr Ser Arg Leu Leu Leu Arg Ser Phe Arg Pro Glu		300
	305	310
His Leu Leu Leu Asn Asp Leu Cys Glu Glu Met Arg His Ser Cys Arg		315
	325	330
Asp Ile Leu Asn Glu Arg Val Ser Phe Leu Pro Gly Asp Ala Glu Ala		335
	340	345
Leu Asp Phe Pro His Gly Thr Glu Leu Ile Thr Ser Cys Ser Val Leu		350
	355	360
Gln Trp Phe Glu His Pro Asp Ala Phe Phe Arg Lys Cys Glu Asn Ile		365
	370	375
Leu Asn Ala Gln Gly Tyr Ile Ala Phe Ser Thr Phe Gly Lys Glu Asn		380
	385	390
Met Lys Glu Ile Arg Gln Leu Thr Gly Gln Gly Leu Ala Tyr Arg Ser		395
	405	410
Arg Glu Glu Leu Thr Thr Ser Leu Ser Ala Leu Tyr Asp Ile Val His		415
	420	425
Thr Glu Glu Glu Val Ile Ser Leu Asn Phe Asn Asn Pro Met Glu Val		430
	435	440
Leu Tyr His Leu Lys Gln Thr Gly Val Thr Gly Thr Cys Asn Gln Ser		445
	450	455
Trp Thr Arg Ser Lys Leu Asn Leu Phe Cys Gln Glu Tyr Glu Arg Leu		460
	465	470
Phe Ser Pro Gly Lys Gly Ser Val Ser Leu Thr Tyr His Pro Ile Tyr		475
	485	490
Ile Ile Ala Lys Lys Arg		495
	500	

<211> 376
 <212> PRT
 <213> B.fragilis

<400> 9637

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Arg Thr Leu Ile His Pro Gly Lys Pro Ser Gly Thr Asn Tyr Phe Gln
1      5      10      15
Ser Arg Ser Ala Leu Gly Ala Lys His Phe Asn Trp Cys Asn Val Ile
20      25      30
Asn Arg Glu Glu Ser Leu Phe Ser Phe Leu Phe Ile Met Lys Glu Lys
35      40      45
Tyr Trp Lys Tyr Ser Leu Ile Ile Ile Ile Ile Gly Leu Gly Ile Ile
50      55      60
Leu Phe Arg Gln Ile Thr Pro Phe Leu Gly Gly Leu Leu Gly Ala Leu
65      70      75      80
Thr Ile Tyr Ile Leu Val Arg Lys Gln Met Ile Tyr Leu Gly Ala Arg
85      90      95
Met Lys Arg Ser Phe Ala Ala Leu Leu Ile Thr Gly Glu Ala Ile Leu
100     105     110
Cys Phe Leu Val Pro Ile Ser Leu Ile Val Trp Met Leu Val Asn Lys
115     120     125
Leu Gln Asp Ile Asn Leu Asp Pro Gln Ala Ile Ile Thr Pro Val Glu
130     135     140
Glu Leu Ala Gly Ile Ile Lys Ala Lys Thr Gly Tyr Asp Val Leu Gly
145     150     155     160
Ser Asp Thr Leu Ser Phe Ile Val Ser Leu Leu Pro Lys Ile Gly Gln
165     170     175
Ala Val Met Gly Gly Ile Ser Ser Phe Ala Val Asn Leu Phe Val Leu
180     185     190
Val Phe Val Leu Tyr Phe Met Leu Ile Gly Gly Thr Lys Met Glu Ala
195     200     205
Tyr Ile Asp Asp Ile Leu Pro Phe Asn Glu Lys Asn Thr Arg Glu Val
210     215     220
Thr His Glu Ile Asn Met Ile Val Arg Ser Asn Ala Ile Gly Ile Pro
225     230     235     240
Leu Leu Ala Val Ile Gln Gly Gly Val Ala Leu Ile Gly Tyr Phe Ile
245     250     255
Phe Gly Ala Pro Asn Ala Trp Leu Ile Gly Val Leu Thr Cys Phe Ser
260     265     270
Thr Ile Ile Pro Met Val Gly Thr Ala Leu Val Trp Phe Pro Val Ala
275     280     285
Ala Tyr Leu Ala Leu Thr Gly Glu Trp Ala Asn Ala Ile Gly Leu Ala
290     295     300
Ala Tyr Gly Gly Ile Val Val Ser Gln Cys Asp Asn Leu Ile Arg Phe
305     310     315     320
Ile Leu Gln Lys Lys Met Ala Asp Thr His Pro Leu Ile Thr Ile Phe
325     330     335
Gly Val Val Ile Gly Leu Ser Leu Phe Gly Phe Met Gly Val Ile Phe
340     345     350
Gly Pro Leu Val Leu Ser Leu Phe Leu Leu Phe Val Asp Met Phe Lys
355     360     365
Lys Glu Tyr Leu Asp Asn Lys Lys
370     375

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<210> 9638
 <211> 402
 <212> PRT
 <213> B.fragilis

<400> 9638

Leu Lys Ile Met Pro Thr Ile Ser Ile Arg Gly Thr Glu Met Pro Ala
 1 5 10 15
 Ser Pro Ile Arg Lys Leu Ala Pro Leu Ala Asp Ala Ala Lys Gln Arg
 20 25 30
 Gly Ile His Val Phe His Leu Asn Ile Gly Gln Pro Asp Leu Pro Thr
 35 40 45
 Pro Gln Ala Ala Ile Asp Ala Ile Arg Asn Ile Asp Arg Lys Val Leu
 50 55 60
 Glu Tyr Ser Pro Ser Ala Gly Tyr Arg Ser Tyr Arg Glu Lys Leu Val
 65 70 75 80
 Gly Tyr Tyr Glu Lys Phe Asn Ile Asn Leu Thr Ala Asp Asp Ile Ile
 85 90 95
 Ile Thr Thr Gly Gly Ser Glu Ala Val Leu Phe Ser Phe Met Ser Cys
 100 105 110
 Leu Asn Pro Gly Asp Glu Ile Ile Val Pro Glu Pro Ala Tyr Ala Asn
 115 120 125
 Tyr Met Ala Phe Ala Ile Ser Ala Gly Ala Lys Ile Arg Thr Ile Ala
 130 135 140
 Thr Thr Ile Glu Glu Gly Phe Ser Leu Pro Lys Val Glu Lys Phe Glu
 145 150 155 160
 Glu Leu Ile Asn Glu Arg Thr Lys Gly Ile Leu Ile Cys Asn Pro Asn
 165 170 175
 Asn Pro Thr Gly Tyr Leu Tyr Thr Arg Arg Glu Met Asn Gln Ile Arg
 180 185 190
 Asp Leu Val Lys Lys Tyr Asp Leu Phe Leu Phe Ser Asp Glu Val Tyr
 195 200 205
 Arg Glu Phe Ile Tyr Thr Gly Ser Pro Tyr Ile Ser Ala Cys His Leu
 210 215 220
 Glu Gly Ile Glu Asn Asn Val Val Leu Ile Asp Ser Val Ser Lys Arg
 225 230 235 240
 Tyr Ser Glu Cys Gly Ile Arg Ile Gly Ala Leu Ile Thr Lys Asn Lys
 245 250 255
 Glu Val Arg Asp Ala Val Met Lys Phe Cys Gln Ala Arg Leu Ser Pro
 260 265 270
 Pro Leu Ile Gly Gln Ile Ala Ala Glu Ala Ser Leu Asp Ala Pro Glu
 275 280 285
 Glu Tyr Ser Arg Glu Thr Tyr Asp Glu Tyr Val Glu Arg Arg Lys Cys
 290 295 300
 Leu Ile Asp Gly Leu Asn Arg Ile Pro Gly Val Tyr Ser Pro Ile Pro
 305 310 315 320
 Met Gly Ala Phe Tyr Thr Val Ala Lys Leu Pro Val Asp Asp Ser Asp
 325 330 335
 Lys Phe Cys Ala Trp Cys Leu Ser Glu Phe Glu Tyr Glu Gly Gln Thr
 340 345 350
 Val Phe Met Ala Pro Ala Ser Gly Phe Tyr Thr Thr Pro Gly Ser Gly
 355 360 365
 Lys Asn Glu Val Arg Ile Ala Tyr Val Leu Lys Lys Glu Asp Leu Thr
 370 375 380
 Arg Ala Leu Phe Val Leu Gln Lys Ala Leu Glu Ala Tyr Pro Gly Arg
 385 390 395 400
 Thr Glu

<210> 9639

<211> 695

<212> PRT

<213> B.fragilis

<400> 9639

Thr	Val	Ile	Ile	Cys	Val	Ile	Cys	Gly	Glu	Asn	Pro	Lys	Pro	Thr	Leu
1			5						10					15	
Asn	Met	Lys	Lys	Tyr	Asp	Ile	Lys	Thr	Thr	Asp	Glu	Gln	Thr	Leu	Arg
		20						25					30		
Lys	Trp	Tyr	His	Leu	Met	Thr	Leu	Gly	Arg	Ala	Leu	Asp	Glu	Lys	Ala
	35						40					45			
Pro	Ala	Tyr	Leu	Leu	Gln	Ser	Leu	Gly	Trp	Ser	Tyr	His	Ala	Pro	Tyr
	50					55				60					
Ala	Gly	His	Asp	Gly	Ile	Gln	Leu	Ala	Ile	Gly	Gln	Val	Phe	Thr	Leu
65					70					75					80
Gly	Glu	Asp	Tyr	Leu	Phe	Pro	Tyr	Tyr	Arg	Asp	Met	Leu	Thr	Val	Leu
				85					90					95	
Ser	Ala	Gly	Met	Thr	Pro	Glu	Glu	Leu	Ile	Leu	Asn	Gly	Ile	Ser	Lys
			100					105					110		
Ala	Thr	Asp	Pro	Gly	Ser	Ala	Gly	Arg	His	Met	Ser	Asn	His	Phe	Ala
		115					120					125			
Lys	Pro	Glu	Trp	His	Ile	Glu	Asn	Ile	Ser	Ser	Ala	Thr	Gly	Thr	His
	130					135					140				
Asp	Leu	His	Ala	Ala	Gly	Val	Gly	Arg	Ala	Met	Val	Tyr	Tyr	Gly	His
145					150					155					160
Lys	Gly	Val	Ala	Ile	Thr	Ser	His	Gly	Glu	Ser	Ala	Thr	Ser	Glu	Gly
				165					170					175	
Phe	Val	Tyr	Glu	Ala	Ile	Asn	Gly	Ala	Ser	Asn	Glu	Arg	Leu	Pro	Val
			180					185					190		
Ile	Phe	Val	Phe	Gln	Asp	Asn	Gly	Tyr	Gly	Ile	Ser	Val	Pro	Lys	Lys
	195						200					205			
Asp	Gln	Thr	Ala	Asn	Arg	Lys	Val	Ala	Asp	Asn	Phe	Ser	Gly	Phe	Lys
	210					215				220					
Asn	Leu	Arg	Ile	Ile	His	Cys	Asn	Gly	Lys	Asp	Val	Phe	Asp	Ser	Met
225					230					235					240
Asn	Ala	Met	Thr	Glu	Ala	Arg	Glu	Phe	Ala	Ile	Ala	Asn	Arg	Thr	Pro
				245					250					255	
Val	Ile	Val	His	Ala	Asn	Cys	Val	Arg	Ile	Gly	Ser	His	Ser	Asn	Ser
			260					265					270		
Asp	Lys	His	Thr	Leu	Tyr	Arg	Asp	Glu	Asn	Glu	Leu	Ala	Tyr	Val	Lys
	275						280					285			
Glu	Ala	Asp	Pro	Leu	Met	Lys	Phe	Arg	Arg	Met	Leu	Leu	Arg	Tyr	Lys
	290					295				300					
Arg	Leu	Thr	Glu	Glu	Asp	Leu	Gln	Gln	Ile	Glu	Ala	Ala	Ala	Lys	Lys
305					310					315					320
Glu	Leu	Ala	Ala	Ala	Asn	Arg	Lys	Ala	Leu	Ala	Ala	Pro	Asp	Pro	Ile
				325					330					335	
Pro	Glu	Ser	Ile	Tyr	Asp	Phe	Val	Leu	Pro	Glu	Pro	Tyr	Ile	Pro	Gln
			340					345					350		
Lys	Tyr	Lys	Asp	Gly	Leu	Pro	Gly	Pro	Val	Glu	Gly	Glu	Lys	Ser	Phe
	355						360					365			
Met	Val	Asn	Ala	Ile	Asn	Glu	Thr	Leu	Lys	Glu	Glu	Phe	Arg	Arg	Asn
	370					375					380				
Pro	Asp	Thr	Phe	Ile	Trp	Gly	Gln	Asp	Val	Ala	Asn	Lys	Asp	Lys	Gly
385					390					395					400
Gly	Val	Phe	Asn	Val	Thr	Lys	Gly	Met	Gln	Gln	Glu	Phe	Gly	Asp	Ala
			405						410					415	
Arg	Val	Phe	Ser	Ala	Pro	Ile	Ala	Glu	Asp	Tyr	Ile	Val	Gly	Thr	Ala
			420					425					430		
Asn	Gly	Met	Cys	Arg	Phe	Asp	Pro	Lys	Ile	His	Val	Val	Ile	Glu	Gly
	435						440					445			
Ala	Glu	Phe	Ala	Asp	Tyr	Phe	Trp	Pro	Ala	Val	Glu	Gln	Tyr	Val	Glu
	450					455					460				

Cys Thr His Glu Tyr Trp Arg Ser Asn Gly Lys Phe Thr Pro Asn Ile
 465 470 475 480
 Thr Leu Arg Leu Ala Ser Gly Gly Tyr Ile Gly Gly Gly Leu Tyr His
 485 490 495
 Ser Gln Asn Leu Glu Gly Ala Leu Thr Thr Leu Pro Gly Ala Arg Ile
 500 505 510
 Val Cys Pro Ser Phe Ala Asp Asp Ala Ala Gly Leu Leu Arg Thr Ser
 515 520 525
 Met Arg Ser Lys Gly Phe Thr Leu Tyr Leu Glu Pro Lys Ala Leu Tyr
 530 535 540
 Asn Ser Val Glu Ala Ala Ala Val Val Pro Glu Glu Phe Glu Val Pro
 545 550 555 560
 Phe Gly Lys Ala Arg Ile Arg Arg Glu Gly Thr Asp Leu Thr Ile Ile
 565 570 575
 Thr Tyr Gly Asn Thr Thr His Phe Cys Leu Asp Val Ala Glu Arg Leu
 580 585 590
 Ala Arg Glu Gly Val Gly Ser Val Glu Val Ile Asp Leu Arg Ser Leu
 595 600 605
 Ile Pro Leu Asp Lys Glu Ala Ile Phe Ala Ser Val Arg Lys Thr Gly
 610 615 620
 Lys Val Met Val Val His Glu Asp Lys Val Phe Ser Gly Phe Gly Ala
 625 630 635 640
 Glu Ile Ala Ala Gln Ile Ala Gly Glu Met Phe Arg Tyr Leu Asp Ala
 645 650 655
 Pro Val Gln Arg Val Gly Ser Thr Phe Thr Pro Val Gly Phe Asn Pro
 660 665 670
 Ile Leu Glu Arg Ala Ile Leu Pro Asn Asp Glu Lys Ile Tyr Lys Ala
 675 680 685
 Ala Lys Glu Leu Leu Glu Phe
 690 695

<210> 9640

<211> 438

<212> PRT

<213> B.fragilis

<400> 9640

Tyr Leu Tyr Met Ser Phe Thr His Pro His Asn Gln Ser Asn Ser Val
 1 5 10 15
 Ser Ser Ser Gly Ala Lys Gly Lys Leu Arg Leu Ser Tyr Phe Leu Ala
 20 25 30
 Arg Arg Ile Tyr Arg Asp Thr Asp Gly Gly Lys Gln Val Ser Arg Pro
 35 40 45
 Ala Val Val Ile Ala Met Ile Gly Ile Ala Ile Gly Leu Ala Val Met
 50 55 60
 Ile Ile Ala Val Ser Val Val Ile Gly Phe Lys Ser Glu Val Arg Asn
 65 70 75 80
 Lys Val Ile Gly Phe Gly Ser His Ile Gln Ile Ser Asn Phe Asp Ala
 85 90 95
 Val Gly Ser Tyr Glu Thr His Pro Val Val Val Asn Asp Ser Met Met
 100 105 110
 Val Ala Leu Ser Ala Leu Pro Glu Val Lys His Val Gln Arg Tyr Ser
 115 120 125
 Thr Lys Pro Gly Met Ile Lys Thr Asp Asp Ala Phe Gln Gly Met Val
 130 135 140
 Leu Lys Gly Val Gly Pro Glu Phe Asp Pro Thr Phe Phe Arg Asp His
 145 150 155 160
 Leu Ile Glu Gly Glu Ile Pro Ala Phe Ser Asp Thr Ala Ser Thr Asn
 165 170 175

Gln Val Val Ile Ser Lys Ala Ile Ala Asp Arg Leu Lys Leu Lys Leu
 180 185 190
 Gly Asp Lys Ile Tyr Thr Tyr Phe Ile Gln Lys Asp Val Arg Ala Arg
 195 200 205
 Arg Leu Thr Val Lys Gly Ile Tyr Gln Thr Asn Phe Ser Glu Tyr Asp
 210 215 220
 Asn Leu Phe Leu Leu Thr Asp Leu Tyr Leu Val Asn Arg Leu Asn Asn
 225 230 235 240
 Trp Ala Pro Gly Gln Val Ser Gly Ala Glu Leu Gln Val Arg Asp Tyr
 245 250 255
 Asp Lys Leu Glu Asp Ile Thr Tyr Arg Ile Ala Thr Asp Thr Asp Asn
 260 265 270
 Lys Gln Asp Ile Tyr Gly Gly Thr Tyr Tyr Val Gln Ser Ile Glu Gln
 275 280 285
 Met Asn Pro Gln Ile Phe Ala Trp Leu Asp Leu Leu Asp Leu Asn Val
 290 295 300
 Trp Val Ile Leu Ile Leu Met Val Gly Val Ala Gly Phe Thr Met Ile
 305 310 315 320
 Ser Gly Leu Leu Ile Ile Ile Leu Glu Arg Thr Gln Met Ile Gly Ile
 325 330 335
 Leu Lys Ala Leu Gly Ala Asn Asp Phe Thr Ile Arg Lys Val Phe Leu
 340 345 350
 Trp Phe Ser Val Phe Leu Ile Gly Lys Gly Met Leu Trp Gly Asn Ala
 355 360 365
 Ile Gly Ile Val Phe Cys Ile Leu Gln Ser Gln Phe Gly Leu Phe Lys
 370 375 380
 Leu Asp Pro Glu Thr Tyr Tyr Val Ser Met Val Pro Val Ser Met Asn
 385 390 395 400
 Ile Trp Leu Phe Leu Leu Ile Asn Ala Gly Thr Leu Leu Thr Ser Val
 405 410 415
 Leu Met Leu Val Gly Pro Ser Tyr Leu Ile Thr Lys Ile Asn Pro Ala
 420 425 430
 Asp Ser Met Arg Tyr Glu
 435

<210> 9641

<211> 415

<212> PRT

<213> B.fragilis

<400> 9641

Asn Asp Asn Ile Met Thr Ile Asn Leu Ile Thr Phe Ala Ser Ile Leu
 1 5 10 15
 His Lys Gln Val Thr Ile Arg Ser Ser His Glu Ala Val Leu Ser Glu
 20 25 30
 Leu Glu Lys Tyr Phe Thr Val Lys Phe Val Asp Tyr Arg Asp Ile His
 35 40 45
 Gln Leu Thr Lys Asp Asp Phe Ser Ile Ile Phe Ile Ala Thr Gly Gly
 50 55 60
 Val Glu Arg Leu Val Met Gln Cys Phe Glu Ser Leu Pro Arg Pro Ala
 65 70 75 80
 Ile Ile Leu Ala Asp Gly Met Gln Asn Ser Leu Ala Ala Ala Leu Glu
 85 90 95
 Ile Ser Ser Trp Leu Arg Gly Arg Gly Met Lys Ser Glu Ile Leu His
 100 105 110
 Gly Asp Phe Met Ser Ile Val Gln Arg Ile Gln Val Leu Tyr Thr Asn
 115 120 125
 Phe Lys Ala Gln Arg Ser Leu Val Gly Leu Arg Ile Gly Val Ile Gly
 130 135 140


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Thr Pro Ser Ser Trp Leu Ile Ala Ser Asn Val Asp Tyr Leu Leu Ala
145          150          155          160
Lys Arg Arg Trp Gly Ile Glu Tyr Leu Asp Ile Pro Leu Glu Arg Ile
          165          170          175
Tyr Asp Val Tyr Asp Arg Ile Lys Asp Asn Glu Val Gly Ala Ser Cys
          180          185          190
Ala Ala Val Ala Ser Gln Ala Leu Ala Cys Arg Glu Gly Thr Pro Glu
          195          200          205
Asp Met Ile Lys Ala Met Arg Leu Tyr Arg Ala Ile Lys Arg Ile Cys
210          215          220
Lys Glu Glu Lys Leu Ser Ala Val Thr Val Ser Cys Phe Lys Leu Ile
225          230          235          240
Glu Arg Thr Gly Thr Thr Gly Cys Leu Ala Leu Ala Met Leu Asn Asp
          245          250          255
Glu Gly Ile Ile Ala Gly Cys Glu Gly Asp Leu Gln Ser Val Phe Thr
          260          265          270
Leu Leu Val Ala Lys Ala Leu Thr Gly Lys Val Gly Phe Met Ala Asn
          275          280          285
Pro Ser Met Ile Asn Ala Arg Asn Asn Glu Ile Ile Leu Ala His Cys
290          295          300
Thr Ile Gly Met Lys Gln Thr Glu Arg Tyr Ile Ile Arg Asn His Phe
305          310          315          320
Glu Thr Glu Ser Gly Ile Gly Ile Gln Gly Leu Leu Pro Glu Gly Asp
          325          330          335
Val Thr Ile Val Lys Cys Gly Gly Glu Cys Leu Asp Glu Tyr Tyr Leu
          340          345          350
Ser Thr Gly Thr Leu Thr Glu Asn Thr Asn Tyr Ile Asn Met Cys Arg
          355          360          365
Thr Gln Val Arg Val Lys Met Asn Thr Pro Ala Asp Tyr Phe Leu Lys
          370          375          380
Asn Pro Leu Gly Asn His His Ile Leu Leu Gln Gly Asn Tyr Glu Asn
385          390          395          400
Ser Leu Asn Glu Phe Leu Met Ala Asn Ser Cys Lys Arg Thr Glu
          405          410          415

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<210> 9642

<211> 503

<212> PRT

<213> B.fragilis

<400> 9642

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Lys Gln Thr Ile Met Thr Leu Ile Leu Ala Ile Val Pro Val Leu Leu
1          5          10          15
Leu Ile Val Leu Met Ala Phe Phe Lys Met Pro Gly Asp Lys Ser Ser
          20          25          30
Val Ile Ser Leu Ile Val Thr Ile Leu Ile Ala Leu Phe Gly Phe His
          35          40          45
Tyr Ala Val Asp Asn Leu Val Phe Ser Phe Val Tyr Gly Ala Leu Lys
          50          55          60
Ala Val Ser Pro Ile Leu Ile Ile Ile Leu Met Ala Ile Phe Ser Tyr
          65          70          75          80
Asn Val Leu Leu Lys Thr Glu Lys Met Glu Ile Ile Lys Gln Gln Phe
          85          90          95
Ser Ser Ile Ser Thr Asp Lys Ser Ile Gln Val Leu Leu Leu Thr Trp
          100          105          110
Gly Phe Gly Gly Leu Leu Glu Ala Met Ala Gly Phe Gly Thr Ala Val
          115          120          125
Ala Ile Pro Ala Ala Ile Leu Ile Ser Leu Gly Phe Lys Pro Ile Phe
          130          135          140

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Ser Ala Thr Val Ser Leu Ile Ala Asn Ser Val Ala Thr Ala Phe Gly
 145 150 155 160
 Ala Ile Gly Thr Pro Val Leu Val Leu Ala Lys Glu Thr Asn Leu Asp
 165 170 175
 Val Gln Val Leu Ser Thr Asn Val Val Leu Gln Leu Ser Val Leu Met
 180 185 190
 Phe Leu Ile Pro Leu Val Leu Leu Phe Leu Thr Asp Pro Lys Ile Lys
 195 200 205
 Ser Leu Pro Lys Asn Leu Phe Leu Ala Leu Leu Val Gly Ala Val Ser
 210 215 220
 Leu Gly Ser Gln Tyr Val Ala Ala Arg Tyr Met Gly Ala Glu Ser Pro
 225 230 235 240
 Ala Ile Ile Gly Ser Ile Leu Ser Ile Val Val Ile Val Ile Tyr Gly
 245 250 255
 Lys Leu Thr Ala Pro Lys Lys Glu Lys Ala Gln Gln Asn Ala Leu Lys
 260 265 270
 Gly Lys Asp Ile Leu Asn Ala Trp Ser Ile Tyr Leu Leu Ile Leu Leu
 275 280 285
 Leu Ile Ile Leu Thr Ser Pro Leu Phe Pro Gly Leu Arg Ser Thr Leu
 290 295 300
 Glu Asn Asn Trp Val Thr Arg Ile Ser Leu Pro Ile Asn Asp Ser Thr
 305 310 315 320
 Val Asn Tyr Thr Ile Ala Trp Leu Thr His Ala Gly Val Leu Leu Phe
 325 330 335
 Val Gly Thr Phe Val Gly Gly Leu Ile Gln Gly Ala Lys Val Lys Glu
 340 345 350
 Leu Phe Val Val Leu Trp Asn Thr Val Lys Gln Leu Lys Lys Thr Phe
 355 360 365
 Val Thr Val Ile Cys Leu Val Gly Leu Ser Thr Ile Met Asp Thr Ala
 370 375 380
 Gly Met Ile Ser Val Ile Ala Thr Ala Leu Ala Thr Ala Thr Gly Ser
 385 390 395 400
 Leu Tyr Pro Leu Phe Ala Pro Val Ile Gly Cys Leu Gly Thr Phe Ile
 405 410 415
 Thr Gly Ser Asp Thr Ser Ser Asn Ile Leu Phe Gly Lys Leu Gln Ala
 420 425 430
 Ser Val Ala Gly His Ile Asn Val Ser Pro Asp Trp Leu Ser Ala Ala
 435 440 445
 Asn Thr Val Gly Ala Thr Gly Gly Lys Ile Ile Ser Pro Gln Ser Ile
 450 455 460
 Ala Ile Ala Thr Ser Ala Gly Asn Gln Gln Gly Lys Glu Gly Glu Ile
 465 470 475 480
 Leu Lys Ala Ala Ile Pro Tyr Ala Leu Ala Tyr Val Val Ile Thr Gly
 485 490 495
 Ile Ile Val Tyr Ile Phe Ser
 500

<210> 9643

<211> 480

<212> PRT

<213> B.fragilis

<400> 9643

Ile Val Arg Met Asn Lys Asn Thr Ile Leu Tyr Ala Ile Leu Ala Ile
 1 5 10 15
 Leu Tyr Phe Met Leu Phe Ser Cys Ser Gln Glu Glu Leu Ile Leu Pro
 20 25 30
 Asp Pro Thr Pro Leu Asp Ala Tyr Lys Arg Gln Ser Thr Gln Leu Gly
 35 40 45

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Ile Asp Arg Glu Lys Ile Asn Ile Asn Thr Glu Asp Ala Ser Ile Val
  50          55          60
Ala Glu Ile Phe Asn Arg Lys Asn His His Leu Thr Arg Asn Ser Leu
  65          70          75          80
Asn Glu Pro Thr Lys Arg Ile Lys Glu Ile Phe Thr Leu Tyr Asn Asn
          85          90          95
Gly Lys Pro Met Met Tyr Ile Ile Asn Tyr Gln Asp Gln Lys Gly Tyr
          100          105          110
Thr Ile Ile Ser Ala Thr Lys Lys Tyr Tyr Pro Val Ile Ala Tyr Ser
          115          120          125
Asp Val Gly Ser Phe Ser Leu Gln Glu Ser Tyr Asn Asp Gly Ser Ser
          130          135          140
Ile Leu Leu Asp Glu Tyr Lys Lys Ile Met Gln Tyr Asn Glu Ile Gln
  145          150          155          160
Pro Asp Ser Ile Ile Asp Lys Tyr Arg Lys Lys Trp Val Glu Phe Glu
          165          170          175
Asn Leu Lys Thr Glu Lys Leu Ser Asp Val Ser Thr Arg Ser Leu Ser
          180          185          190
Asp Tyr Ala Met Ser Ile Lys Lys Glu Glu Gln Lys Lys Ile Trp Thr
          195          200          205
Asn Lys Gly Tyr Glu Cys His Asp Leu Gly Ala Ile Arg Asn Phe Leu
          210          215          220
Ser Lys Glu Arg Ala Asp Gly Tyr Ile Arg Asp Ile Cys Asn His Thr
  225          230          235          240
Asp Gln Asn Tyr Asn Cys Glu Lys Val Asn Leu Leu Leu Ile Lys Lys
          245          250          255
Tyr Pro Ile Lys Thr Ile Gly Pro Leu Leu Lys Thr Ser Trp His Gln
          260          265          270
Arg Ser Pro Phe Asn Val Asp Ala Pro Asn Lys Leu Ala Gly Cys Val
          275          280          285
Pro Ile Ala Ile Ala Gln Ile Ala Lys Tyr Tyr Glu Trp Pro Val Thr
          290          295          300
Tyr Ser Trp Thr His Ile Pro Leu Arg Cys Asn Thr Asn Met Glu Asp
  305          310          315          320
Asp Glu Phe Phe Lys Lys Phe Ile Lys Asp Ile Arg Ser Phe Ser Lys
          325          330          335
Val Thr Tyr Lys Asp Lys Ala Thr Gly Ala Thr Met Gly Asn Ala Val
          340          345          350
Lys Ala Phe Lys Lys Leu Asn Tyr Ser Ala Thr Leu Met Asp Tyr Lys
          355          360          365
Arg Ser Glu Thr Ile Gln Glu Ile Gln Asn Asn Arg Pro Val Phe Met
          370          375          380
Gly Gly Asp Arg Lys Ala Ile Phe Phe Asp Ile Ile Thr Lys Gly His
  385          390          395          400
Ala Trp Val Cys Asp Gly Tyr Glu Val Arg Gln Thr Gln Tyr Ala Ser
          405          410          415
Leu Val Trp Gly Ser Lys Phe Asn Ile Pro Asp Met Glu Glu Pro Asp
          420          425          430
Tyr Phe Phe Thr Asn Gly Thr Tyr Asp Thr Ser Glu Phe Leu His Met
          435          440          445
Asn Trp Gly Trp Gly Glu Asn Gly Gly Asn Gly Trp Tyr Ile Phe Asp
          450          455          460
Asn Ile Tyr Asn Arg Thr His Asp Val Ser Tyr His Leu Asn Arg Pro
  465          470          475          480

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<210> 9644

<211> 281

<212> PRT

<213> B.fragilis

<400> 9644

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Thr Tyr Arg Ile Ala Thr Gln Arg Leu Asn Gly Ser Glu Thr Phe Ser
1      5      10      15
Asp Ser Phe Gly Pro Ile Asn Ile Tyr Asn Glu Lys His Thr Arg Tyr
20      25      30
Met Lys Arg Ile Ser Leu Phe Val Leu Phe Ile Cys Thr Ile Phe Ser
35      40      45
Cys Leu Ser Ala Gln Thr Asp Lys Glu Asn Glu Arg Ile Lys Gln Asn
50      55      60
Tyr Ile Arg Ser Ile Ile Gly Met Asp Glu Glu Lys Gln Pro Tyr Leu
65      70      75      80
Gln Leu Leu Ser Lys Ile Pro Pro Glu Lys Glu Val Ser Asp Gln Asn
85      90      95
Val Ile Glu Leu Gln Gln Leu Tyr Pro Ile Arg Gln Glu Glu Ile His
100     105     110
Arg Leu Ile Ser Thr Ile Arg Gly Asp Gly Ser Trp Pro Asp Ile Asn
115     120     125
Tyr Ala Asp Thr Lys Arg Ser Gly Trp Glu Pro Lys Gln His Thr Glu
130     135     140
Arg Ile Leu Lys Leu Thr Lys Tyr Tyr Ala Ser Glu Gln Glu Asn Val
145     150     155     160
Ser Ala Gln Glu Ile Ser Ala Val Val Ser Ile Ile His Gln Ala Met
165     170     175
Lys Tyr Trp Phe Val Gln Lys Pro Val Cys Lys Asn Trp Trp Tyr Asn
180     185     190
Gln Ile Gly Ile Pro Arg Thr Leu Gly Pro Ala Phe Leu Leu Phe Glu
195     200     205
Thr Glu Met Thr Glu Lys Glu Lys Gln Glu Ala Ile Arg Val Met Glu
210     215     220
Gln Ser Gln Phe Gly Met Thr Gly Gln Asn Lys Val Trp Leu Ala Gly
225     230     235     240
Asn Val Leu Ile Arg Gly Leu Leu Leu Asn Asp Ala Glu Leu Ile Lys
245     250     255
Glu Ala Arg Glu Asn Ile Cys Ser Glu Ile Val Leu Gly Gln Lys Glu
260     265     270
Gly Ile Gln Pro Asp Trp Ser Phe His
275     280

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<210> 9645

<211> 425

<212> PRT

<213> B.fragilis

<400> 9645

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Thr Gln Thr Ile Gln Thr Leu Thr Pro Met Ile Phe Ser Gln Arg Ile
1      5      10      15
Tyr Phe Ile Ile Leu Phe His Val Leu Leu Ile Leu Gly Thr Ala Gly
20      25      30
Thr Gly Leu Trp Leu Val Val Ser His Thr Gly Tyr Ile Ile Gly Gly
35      40      45
Ile Leu Leu Leu Cys Ser Leu Phe Gln Ile Gly Ala Leu Thr Arg Gln
50      55      60
Leu Asn Thr Phe Asn Arg Lys Ile Arg Leu Phe Phe Asp Ala Val Gln
65      70      75      80
Asp Lys Asp Asn Met Leu Tyr Phe Pro Glu Ala Asn Val Gly Lys Glu
85      90      95
Gln Ala Gln Leu Asn Arg Ser Leu Asn Arg Leu Asn Asp Leu Leu Ala
100     105     110

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Arg Thr Lys Gly Glu Ser His Lys Gln Glu His Phe Tyr Gln Ser Leu
115 120 125
Leu Glu Glu Val Pro Ser Gly Val Leu Ala Trp Asp Asp Ser Gly Arg
130 135 140
Ile Ile Ile Ala Asn Ser Ala Ala Phe Ser Leu Leu Lys Cys Asn Arg
145 150 155 160
Leu Tyr Thr Glu Thr Gln Leu Ala Gln Leu Leu Asn Val Thr Gly Ile
165 170 175
Arg Lys Ser Leu Ser Ile Ser Glu Lys Lys Met Ile Leu Asp Gly Glu
180 185 190
Thr Ile Thr Ile Leu Ser Ile Lys Asp Ile Gly Asp Glu Leu Ser Asp
195 200 205
Lys Glu Asn Glu Ser Trp Ser Lys Leu Thr His Val Leu Thr His Glu
210 215 220
Ile Met Asn Thr Ile Ala Pro Ile Leu Ser Leu Ser Gln Thr Leu Ser
225 230 235 240
Glu Arg Pro Asp Ile Asn Glu Lys Ser Ala Arg Gly Leu Arg Ile Ile
245 250 255
Gln Ala Gln Ser Glu Arg Leu Met Glu Phe Thr Glu Ser Phe Arg His
260 265 270
Leu Ser Tyr Leu Pro His Pro Glu Lys Arg Arg Phe Ala Leu Thr Glu
275 280 285
Met Leu Arg Asn Leu Glu Glu Leu Leu Gln Ser Asp Phe Arg Glu Arg
290 295 300
Gly Ile Arg Phe Met Leu Gln Cys Val Pro Asp Pro Ile Glu Thr Asp
305 310 315 320
Gly Asp Pro Asn Gln Leu Ser Gln Val Phe Leu Asn Leu Leu Lys Asn
325 330 335
Ala Met Gln Ala Leu Glu Gly Gln Ala Asp Gly Arg Ile Ile Leu Arg
340 345 350
Val Arg Arg Ala Asp Arg Leu Gln Val Glu Ile Glu Asp Asn Gly Pro
355 360 365
Gly Ile Pro Glu Glu Ile Arg Glu Gln Ile Phe Ile Pro Phe Phe Thr
370 375 380
Thr Lys Thr Glu Gly Ser Gly Ile Gly Leu Ser Leu Cys Lys Gln Ile
385 390 395 400
Ile Arg Gln His Asp Gly His Leu Ser Ile Arg Glu Ser Arg Pro Gly
405 410 415
Gln Thr Ile Phe Ser Leu Asp Leu Pro
420 425

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<210> 9646

<211> 434

<212> PRT

<213> B.fragilis

<400> 9646

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Lys Glu Ala Phe Ser Ser Leu Leu Cys Arg Arg Thr Glu Lys Arg Pro
1 5 10 15
Phe Leu Phe Gln Ile Gln Pro Leu Val Ile Ser Lys Gln Phe Ile Pro
20 25 30
Gly Asn Asn His Pro Val Ala Arg Phe Gln Ser Phe Gly His Phe Val
35 40 45
Val Leu Arg Ile Leu Pro Pro Asp Thr Asp Arg Thr Ala Arg Gly Lys
50 55 60
Phe Thr Thr Phe Val Lys Asn Ile His Pro Ala Ala Pro Gly Tyr Leu
65 70 75 80
Lys Glu Ser Ser Thr Arg Tyr Lys Asn Gly Leu Gly Arg Ile Ser Gln
85 90 95

```

Leu Lys Ile Asp Val Ile Arg Leu Pro Gly Thr Asp Val Phe Gly Thr
 100 105 110
 Ser Gly Ser Lys Leu Lys Val Gly Thr Glu Leu Ser Leu Phe Tyr Phe
 115 120 125
 Arg Ile Gly Phe Gly His Phe Lys Phe Ile Val Ala Ser Val Thr Gly
 130 135 140
 Glu Ile Arg Arg Lys Ser Gly Asn Tyr Pro Leu His Val Val Phe Val
 145 150 155 160
 Asp Gln Ser Leu Tyr Phe Glu Val Gly Gly Asn Asp Leu Pro Asp Met
 165 170 175
 Phe Ala Gly Ser Asn Gly Leu Ala Asp Leu Gly Ile Glu Ile Thr His
 180 185 190
 Leu Ser Ile Asp Gly Ser Phe Tyr Leu Gln Val Phe His Pro Leu Ala
 195 200 205
 Tyr Gln Gly Glu Ala Ala Leu His Val Thr Asp Ile Leu Val Glu Ala
 210 215 220
 Ala Asp Leu Ala Phe Pro Glu Lys Ile Val Leu Pro Asp Ala Phe Val
 225 230 235 240
 Asn Asp Phe Gln Leu Cys Pro Cys Arg Phe Val Leu Phe Gly Ser Gln
 245 250 255
 Ala Lys Leu Leu Leu Arg Tyr Gln Leu Leu Phe Asp Lys Ala Ala Val
 260 265 270
 Leu Leu Val Thr Pro Leu Phe His Cys Gln Phe Leu Ile Gln Ala Asp
 275 280 285
 Ala Phe Leu Phe Gln Pro Gln Met Phe Leu Leu His Ala Asp Ala Gly
 290 295 300
 Ile Ala Gln Leu Val Leu Leu Ile Gly Gln Ile Gly Phe Ala Leu His
 305 310 315 320
 Asp Ala Asp Val Gln Glu Arg Ile Ala Glu Thr Lys Asn His Ile Ala
 325 330 335
 Cys Leu Asp Asp Gly Ser Phe Leu Phe Gln Ala Leu Phe His Thr Ala
 340 345 350
 Ser Phe Tyr Arg Ile His Ile Asn Asp Ala Val Gly His His Leu Ser
 355 360 365
 Asp Asn Pro Asp Val Ile Thr Glu Leu Ser Pro Gly Asn Cys Ser Asn
 370 375 380
 Gly Gln Pro Val Phe Phe His Ile His Arg Arg Gly Ser Val Ser Glu
 385 390 395 400
 Asn Lys Val Lys Asn Lys Ser His Gln Tyr His Gly Ser Gly Asp Gly
 405 410 415
 Ile Ile Met Leu Pro Leu His Ser Gly Phe Ala Phe Asp His Cys Ile
 420 425 430
 His Arg

<210> 9647

<211> 456

<212> PRT

<213> B.fragilis

<400> 9647

Ile Glu Val Phe Ser Met Ser Phe Asn Ile Val Lys Asn Asp Lys Lys
 1 5 10 15
 Arg Val Ile Ile Val Gly Gly Gly Phe Gly Gly Leu Lys Leu Ala Asn
 20 25 30
 Lys Leu Lys Lys Ser Gly Phe Gln Val Val Leu Val Asp Lys Asn Asn
 35 40 45
 Tyr His Gln Phe Pro Pro Leu Ile Tyr Gln Val Ala Ser Ala Gly Leu
 50 55 60

Glu Pro Ser Ser Ile Ser Phe Pro Phe Arg Lys Ile Phe Gln Lys Arg
 65 70 75 80
 Lys Asp Phe Tyr Phe Arg Met Ala Glu Val Arg Ala Ile Phe Pro Glu
 85 90 95
 Lys Lys Met Ile Gln Thr Ser Ile Gly Lys Ala Glu Tyr Asp Tyr Leu
 100 105 110
 Val Leu Ala Ala Gly Thr Thr Ser Asn Phe Phe Gly Asn Glu His Ile
 115 120 125
 Glu Glu Glu Ala Met Pro Met Lys Thr Val Ser Glu Ala Met Gly Leu
 130 135 140
 Arg Asn Ala Leu Leu Ala Asn Phe Glu Arg Ser Ile Thr Cys Ser Thr
 145 150 155 160
 Glu Arg Glu Arg Gln Glu Leu Leu Asn Val Val Val Val Gly Gly Gly
 165 170 175
 Ala Thr Gly Val Glu Ile Ala Gly Val Leu Ser Glu Met Lys Lys Phe
 180 185 190
 Val Leu Pro Asn Asp Tyr Pro Asp Met Pro Ser Ser Leu Met His Ile
 195 200 205
 Tyr Leu Ile Glu Ala Gly Asp Arg Leu Leu Ala Gly Met Ser Glu Asp
 210 215 220
 Ser Ser Arg His Ala Glu Gln Phe Leu Arg Glu Met Gly Val Asn Ile
 225 230 235 240
 Leu Leu Asn Lys Arg Val Thr Asp Tyr Lys Asp His Lys Val Met Leu
 245 250 255
 Glu Asp Gly Thr Glu Ile Ala Thr Arg Thr Phe Ile Trp Val Ser Gly
 260 265 270
 Val Ala Ala Ile Thr Phe Gly Asn Ile Asp Gly Glu Leu Leu Gly Arg
 275 280 285
 Gly Arg Arg Ile Lys Val Asp Glu Phe Asn Arg Val Gln Gly Thr Asp
 290 295 300
 Thr Ile Phe Ala Ile Gly Asp Gln Cys Ile Gln Thr Thr Asp Lys Asn
 305 310 315 320
 Tyr Pro Asn Gly His Pro Gln Leu Ala Gln Val Ala Ile Gln Gln Gly
 325 330 335
 Glu Leu Leu Ala Lys Asn Leu Gln Arg Leu Gln Lys Gly Lys Pro Met
 340 345 350
 Gln Pro Phe His Tyr Arg Asn Leu Gly Ser Met Ala Thr Val Gly Arg
 355 360 365
 Asn Arg Ala Val Ala Glu Phe Ser Ser Phe Lys Thr Ala Gly Trp Leu
 370 375 380
 Ala Trp Val Met Trp Leu Val Val His Leu Arg Ser Ile Leu Gly Val
 385 390 395 400
 Arg Asn Lys Ala Asn Val Leu Leu Asn Trp Val Trp Asn Tyr Phe Thr
 405 410 415
 Tyr Asp Gln Ser Leu Arg Met Ile Val Tyr Ala Lys Lys Ala Lys Glu
 420 425 430
 Val Arg Asp Arg Glu Glu Leu Glu Ala Lys Thr His Trp Gly Glu Glu
 435 440 445
 Thr Gln Thr Gln Gln Pro Lys Gly
 450 455

<210> 9648

<211> 344

<212> PRT

<213> B.fragilis

<400> 9648

Trp Ile Cys Leu Leu Gln Thr Pro Leu Ile Arg Ser Ser Lys Pro Asp
 1 5 10 15

Lys Lys Leu Glu Leu Pro Tyr Tyr Ala Ala Ser Gln Pro Ser Gly Met
 20 25 30
 Gln Val Val Arg Ser Ser Gly Leu Asn Gly Pro Ser Thr Lys Glu Ser
 35 40 45
 Phe Pro Asp His Ala Phe Ile Pro Val Ala Leu Leu Ser Pro Arg Gln
 50 55 60
 Glu Gly His Gly Asp Phe Arg Ala Val Tyr Asp Glu Pro Arg Pro Phe
 65 70 75 80
 Asp Cys Cys Gly Leu Thr His Thr Glu Lys Met Gly Ala Ala Ile Ile
 85 90 95
 Ala Asp Gly Ile Asp Ala Val Thr Val Ala Ala Arg Asn Asn Leu Gly
 100 105 110
 Leu Gly Ala Ser Gln Ile Lys Leu Met Thr Gly Gly Gly Val Ala Ser
 115 120 125
 Trp Tyr Asp Arg Leu Glu Asp Ser Gln Phe Phe Glu Lys Glu Ile His
 130 135 140
 Ala Ala Val Lys Ala Gly Lys Asp Ala Gly Thr Tyr Val Met Val His
 145 150 155 160
 Val Tyr Val Pro Arg Ala Ile Gln Arg Ala Ile His Ala Gly Val Lys
 165 170 175
 Ser Ile Glu His Gly His Leu Ile Asp Glu Pro Thr Met Gln Leu Ile
 180 185 190
 Ala Glu Lys Glu Ile Trp Leu Ser Met Gln Pro Phe Thr Leu Gly Asp
 195 200 205
 Asn Gln Phe Pro Thr Lys Glu Gln Gln Glu Lys His Ala Leu Val Val
 210 215 220
 Gln Gly Thr Asp Gln Thr Tyr Gln Leu Ala Lys Lys Tyr Asn Val Lys
 225 230 235 240
 Leu Ala Trp Gly Thr Asp Leu Leu Phe Asn Pro Ala Asn Thr Lys Asn
 245 250 255
 Gln Asn Gln Gly Ile Leu Lys Leu Arg Gln Trp Phe Ser Asn Phe Glu
 260 265 270
 Ile Leu Lys Met Val Thr His Asp Asn Ala Glu Leu Leu Ala Leu Ser
 275 280 285
 Gly Ala Arg Asn Pro Tyr Pro Gly Lys Leu Gly Val Ile Glu Glu Asp
 290 295 300
 Ala Trp Ala Asp Leu Ile Leu Val Asp Gly Asp Val Leu Lys Asp Ile
 305 310 315 320
 Thr Leu Leu Gly Asp Pro Glu Lys Asn Phe Ile Ile Ile Met Lys Gly
 325 330 335
 Gly Glu Ile Tyr Lys Asn Arg Val
 340

<210> 9649

<211> 395

<212> PRT

<213> B.fragilis

<400> 9649

Asn Glu Pro Leu Lys Lys Ile Met Met Lys Thr Lys Met Ile Tyr Met
 1 5 10 15
 Ile Leu Leu Phe Ser Ser Ile Leu Phe Gly Gly Cys Val Arg Asp Val
 20 25 30
 Ile Asp Asp Val Pro Gly Thr Asp Glu Asp Tyr Ala Ala Asp Lys Lys
 35 40 45
 Asp Val Val Leu Ile Arg Met Gly Thr Asn Asp Ala Glu Val Lys Asp
 50 55 60
 Ile Thr Ser Arg Leu Phe Asn Asn Ile Pro Ser Ser Trp Glu Ile Gly
 65 70 75 80

Lys Lys Thr Ile Val Asp Tyr Asp Lys Met Lys Asp Pro Glu Thr Glu
 85 90 95
 Leu Asn Ala Asp Ile Lys Asn Pro Lys Ile Tyr Met Thr Val Ile Leu
 100 105 110
 Asn Ile Asp Asp Val Ile Ser Gly Lys Tyr Pro Ile Ser Leu Phe Arg
 115 120 125
 Met Leu Lys Phe Tyr Lys Arg Asp Phe Tyr Val Ile Ala Thr Gln Ser
 130 135 140
 Thr Pro Glu Gln Lys Glu Glu Met Leu Ser Leu Ile Gly Val Tyr Met
 145 150 155 160
 Glu Ala Gly Tyr Tyr Ala Ile Asn Tyr Asp Asn Val Gln His Tyr Arg
 165 170 175
 Ile Phe Pro Ser Ala Asp Pro Tyr Ala Lys Asp Asn Met Ile Gly Lys
 180 185 190
 Gly Val Ala Ser Phe Asn Gln Lys Leu Leu Thr Arg Ser Ala Asp Thr
 195 200 205
 Leu Pro Glu Gly Asn Asp Pro Asp Pro Gly Tyr Asn Ala Gln Met Ala
 210 215 220
 Asp Lys Glu Ala Leu Lys Arg Ile Glu Ile Tyr Asn Arg Ile Tyr Gly
 225 230 235 240
 Tyr Ala Gln Gly Asp Met Asn Tyr Ser Met Gln Ala Val Pro Tyr Lys
 245 250 255
 Met Lys Gln Gly Ala Ala Pro Asp Val Ile Ile Asp Asn Ser Trp Ala
 260 265 270
 Ile Asp Ala Tyr Asn Phe Gln Ile Tyr Ser Lys Asn Asn Asn Cys Ile
 275 280 285
 Leu Ser Ile Thr Asn Asn Ala Gly Asn Gly Phe Thr Ala Asn Ile Lys
 290 295 300
 Asp Tyr Thr Thr Pro Lys Gly Ala Asn Val Tyr Ala Tyr Ile Trp Asn
 305 310 315 320
 Leu Met Arg Glu Ala Ser Ser Glu Ile Thr Val His Ser Asp Gly Gly
 325 330 335
 Ile Phe Arg Glu Ile Ser Tyr Gln Pro Gln Thr Val Asn His Gly Ala
 340 345 350
 Ser Tyr Thr Glu Asn Ser Phe Trp Lys Val Ser Val Ser Val Ser Pro
 355 360 365
 Thr Lys Leu Glu Asp Lys Pro Trp Glu Ala Phe Lys Val Ser Phe Gly
 370 375 380
 Lys Glu Ser Ser Thr Glu Val Ser Tyr Lys Asp
 385 390 395

<210> 9650

<211> 390

<212> PRT

<213> B.fragilis

<400> 9650

Met Glu Ala Phe Thr Phe Asn Thr Thr Glu Leu Ile Leu Leu Ser Ala
 1 5 10 15
 Thr Gly Val Leu Leu Ile Ile Gln Leu Ile Tyr Tyr Leu Gly Leu Tyr
 20 25 30
 Asn Arg Ile His Thr His Asn Leu Ala Val Gly Lys Asp Glu Val His
 35 40 45
 Phe Gly Arg Glu Leu Pro Pro Leu Ser Val Val Ile Cys Ala Arg Asn
 50 55 60
 Glu Ser Glu Asn Leu Arg Arg Asn Leu Pro Thr Ile Leu Lys Gln Asp
 65 70 75 80
 Tyr Pro Asp Phe Glu Val Ile Val Ile Asn Asp Gly Ser Thr Asp Glu
 85 90 95

Ser Glu Asp Leu Leu Ser Ala Leu Glu Glu Glu Tyr Pro Asn Leu Tyr
 100 105 110
 His Ser Phe Thr Pro Asp Ser Ala Arg Tyr Ile Ser Arg Lys Lys Leu
 115 120 125
 Ala Leu Thr Leu Gly Ile Lys Ala Ser Lys His Asp Trp Leu Val Phe
 130 135 140
 Thr Glu Ala Asp Cys Ala Pro Val Ser Asn Gln Trp Leu Arg Arg Met
 145 150 155 160
 Ala Arg Asn Phe Thr Ser Ser Thr Asp Ile Val Leu Gly Tyr Ser Gly
 165 170 175
 Tyr Glu Arg Gly Lys Gly Trp Leu His Lys Arg Ala Ser Phe Asp Ser
 180 185 190
 Leu Phe Thr Ser Leu Arg Tyr Leu Gly Phe Ala Leu Ala Gly Lys Pro
 195 200 205
 Tyr Met Gly Ile Gly Arg Asn Leu Ala Tyr Arg Lys Glu Leu Phe Phe
 210 215 220
 Lys Val Lys Gly Phe Ser Thr His Leu Asn Met Gln Arg Gly Glu Asp
 225 230 235 240
 Asp Leu Phe Ile Asn Gln Val Ala Asn Glu Asn Asn Thr Arg Val Glu
 245 250 255
 Thr Ser Pro Asp Ala Val Ile Arg Met Gln Pro Val Glu Arg Tyr Lys
 260 265 270
 Asp Trp Lys Glu Glu Lys Val Ser Tyr Met Ala Thr Ser Arg Phe Tyr
 275 280 285
 Lys Gly Ser Gln Arg Trp Leu Leu Gly Leu Glu Thr Gly Thr Arg Leu
 290 295 300
 Leu Phe Tyr Ala Ala Cys Leu Ala Gly Ile Val Phe Gly Ile Leu Ser
 305 310 315 320
 Phe His Trp Leu Val Val Gly Leu Ser Leu Leu Leu Trp Phe Val Arg
 325 330 335
 Tyr Ser Val Gln Ala Tyr Val Ile Asn Lys Thr Ala Gly Glu Met Gly
 340 345 350
 Asp Asn Arg Ser Tyr Tyr Phe Thr Leu Pro Val Phe Asp Ile Ile Arg
 355 360 365
 Pro Leu Gln Thr Leu Lys Leu Lys Leu Tyr Arg Leu Tyr Arg Gly Lys
 370 375 380
 Gly Asp Phe Met Arg Arg
 385 390

<210> 9651

<211> 345

<212> PRT

<213> B.fragilis

<400> 9651

Ser Val Leu Phe Ser Ser Glu Arg Asn Lys Thr Phe Lys Thr Lys Arg
 1 5 10 15
 Lys Met Ala Gln Leu Asn Phe Gly Gly Val Thr Glu Asn Val Val Thr
 20 25 30
 Arg Glu Glu Phe Pro Leu Glu Lys Ala Arg Glu Val Leu Lys Asn Glu
 35 40 45
 Thr Ile Ala Val Ile Gly Tyr Gly Val Gln Gly Pro Gly Gln Ser Leu
 50 55 60
 Asn Leu Arg Asp Asn Gly Phe Asn Val Ile Val Gly Gln Arg Pro Gly
 65 70 75 80
 Lys Thr Tyr Glu Lys Ala Val Ala Asp Gly Trp Val Pro Gly Glu Thr
 85 90 95
 Leu Phe Gly Ile Glu Glu Ala Cys Glu Lys Gly Thr Ile Ile Met Cys
 100 105 110

Leu Leu Ser Asp Ala Ala Val Met Ser Val Trp Pro Thr Ile Lys Pro
 115 120 125
 Tyr Leu Thr Ala Gly Lys Ala Leu Tyr Phe Ser His Gly Phe Ala Ile
 130 135 140
 Thr Trp Ser Asp Arg Thr Gly Val Val Pro Gln Lys Asp Ile Asp Val
 145 150 155 160
 Ile Met Val Ala Pro Lys Gly Ser Gly Thr Ser Leu Arg Thr Met Phe
 165 170 175
 Leu Glu Gly Arg Gly Leu Asn Ser Ser Tyr Ala Ile Tyr Gln Asp Ala
 180 185 190
 Thr Gly Arg Ala Met Glu Arg Thr Ile Ala Leu Gly Ile Gly Val Gly
 195 200 205
 Ser Gly Tyr Leu Phe Glu Thr Thr Phe Val Arg Glu Ala Thr Ser Asp
 210 215 220
 Leu Thr Gly Glu Arg Gly Ser Leu Met Gly Ala Ile Gln Gly Leu Leu
 225 230 235 240
 Leu Ala Gln Tyr Glu Val Leu Arg Glu Asn Gly His Thr Pro Ser Glu
 245 250 255
 Ala Phe Asn Glu Thr Val Glu Glu Leu Thr Gln Ser Leu Met Pro Leu
 260 265 270
 Phe Ala Lys Asn Gly Met Asp Trp Met Tyr Ala Asn Cys Ser Thr Thr
 275 280 285
 Ala Gln Arg Gly Ala Leu Asp Trp Met Gly Pro Phe His Asp Ala Ile
 290 295 300
 Lys Pro Val Val Gln Lys Leu Tyr Asn Ser Val Lys Thr Gly Asn Glu
 305 310 315 320
 Ala Gln Ile Ser Ile Asp Ser Asn Ser Lys Pro Asp Tyr Arg Glu Lys
 325 330 335
 Leu Glu Ala Glu Leu Lys Gly Ile Ala
 340 345

<210> 9652

<211> 644

<212> PRT

<213> B.fragilis

<400> 9652

Phe Leu Ala Tyr Asn Leu Gln Pro Ile Lys Met Asn Asp Asn Lys Ile
 1 5 10 15
 Lys Ser Ser Ser Pro Leu Ser Asp Leu Gln His Gln Gln Leu Leu Leu
 20 25 30
 Arg Met Glu Tyr Glu Tyr Glu Lys Glu Glu Phe Arg Arg Gln Thr Glu
 35 40 45
 Thr Met Gly Ile Ala Arg Lys Val Lys Arg Gly Leu Cys Trp Tyr Pro
 50 55 60
 Val Gly Thr Gly Arg Ser Phe Tyr Asn Ser Leu Asn Gln Leu Val Ile
 65 70 75 80
 Glu Ile Glu Arg Lys Glu Asp Lys Asp Ile Glu His Val Phe Glu Phe
 85 90 95
 Gly Arg Pro Val Cys Phe Phe Glu Gln Gly Tyr Asp Gly Lys Ile His
 100 105 110
 Tyr Phe Asn Ser Ile Cys Thr Val Ser Tyr Ala Asp Glu Arg Met
 115 120 125
 Val Val Ala Val Pro Gly Ala Gly Ser Leu Leu Glu Ile Gln Gly Ala
 130 135 140
 Glu Arg Leu Gly Val Gln Leu Tyr Phe Asp Glu Thr Ser Tyr Arg Thr
 145 150 155 160
 Met Phe Glu Ala Leu Glu Asp Val Ile Arg Ala Lys Gly Asn Arg Leu
 165 170 175

Ala Glu Leu Arg Asp Ile Leu Leu Ser Lys Gln Pro Ser Cys Trp Arg
 180 185 190
 Glu Thr Tyr Pro Val Arg Phe Pro Trp Leu Asn Ser Thr Gln Glu Ala
 195 200 205
 Ala Val Asn Lys Val Leu Cys Ala Lys Asp Val Ala Ile Val His Gly
 210 215 220
 Pro Pro Gly Thr Gly Lys Thr Thr Thr Leu Val Glu Ala Ile Tyr Glu
 225 230 235 240
 Thr Leu His Arg Glu Asn Gln Val Leu Val Cys Ala Gln Ser Asn Thr
 245 250 255
 Ala Val Asp Trp Ile Ala Glu Lys Leu Val Asp Arg Gly Val Pro Val
 260 265 270
 Leu Arg Ile Gly Asn Pro Ser Arg Val Asn Asp Lys Met Leu Ser Phe
 275 280 285
 Thr Tyr Glu Arg Arg Phe Glu Gly His Pro Ala Tyr Thr Glu Leu Trp
 290 295 300
 Gly Ile Arg Lys Ser Ile Arg Glu Met Gly Asn Arg Met Arg Lys Ser
 305 310 315 320
 Ser Tyr Ser Glu Arg Glu Ala Ala Arg Ser Arg Ile Asn His Leu Arg
 325 330 335
 Glu Arg Ala Thr Glu Leu Glu Ile Gln Ile Asn Glu Asp Leu Phe Ser
 340 345 350
 Gly Ala Arg Val Ile Ala Ser Thr Leu Val Ser Ser Asn His Arg Ile
 355 360 365
 Leu Thr Gly Arg Arg Phe Thr Thr Leu Phe Ile Asp Glu Ala Ala Gln
 370 375 380
 Ala Leu Glu Ala Ala Cys Trp Ile Ala Ile Arg Lys Ala Asp Arg Val
 385 390 395 400
 Ile Phe Ala Gly Asp His Cys Gln Leu Pro Pro Thr Ile Lys Cys Ile
 405 410 415
 Glu Ala Gly Arg Asn Gly Leu Glu Gln Thr Leu Met Glu Lys Val Ala
 420 425 430
 Ala Asn Lys Gln Glu Thr Val Ser Leu Leu Lys Val Gln Tyr Arg Met
 435 440 445
 His Gln Ser Ile Met Gln Phe Ser Ser Glu Trp Phe Tyr Gln Gly Glu
 450 455 460
 Leu Gln Ala Ala Pro Glu Val Thr Asn Arg Gly Ile Leu Asp Leu Asp
 465 470 475 480
 Leu Pro Met Ser Trp Ile Asp Thr Ser Glu Met Glu Phe His Glu Glu
 485 490 495
 Phe Ile Gly Glu Ser Phe Gly Arg Ile Asn Lys Pro Glu Ala Asn Leu
 500 505 510
 Leu Leu Gln Glu Leu Glu Ala Tyr Ile Arg Lys Ile Gly Glu Lys Arg
 515 520 525
 Val Leu Glu Glu Arg Ile Asp Phe Gly Leu Ile Ser Pro Tyr Lys Ala
 530 535 540
 Gln Val Gln Tyr Leu Arg Gly Lys Leu Lys Gly Cys Ser Phe Phe Arg
 545 550 555 560
 Pro Phe Arg Ser Gln Ile Thr Ile His Thr Val Asp Gly Phe Gln Gly
 565 570 575
 Gln Glu Arg Asp Val Ile Phe Ile Ser Leu Val Arg Ala Asn Glu Asp
 580 585 590
 Gly Gln Ile Gly Phe Leu Asn Asp Leu Arg Arg Met Asn Val Ala Ile
 595 600 605
 Thr Arg Ala Arg Met Lys Leu Val Ile Leu Gly Asp Ala Val Thr Met
 610 615 620
 Ser Lys His Ala Phe Tyr Lys Lys Leu Ile Gly Tyr Ile Arg His Ile
 625 630 635 640
 Ser Gln Gly Leu

<210> 9653
 <211> 658
 <212> PRT
 <213> B.fragilis

<400> 9653

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Ile Lys Phe Asn Ile Tyr Leu Cys Ala Leu Ile Lys Gln Gln Thr Ile
1          5          10          15
Leu Tyr His Met Lys Asn Arg Ile Tyr Thr Met Lys Gly Met Leu Ala
          20          25          30
Thr Leu Leu Gly Ala Phe Leu Leu Gly Tyr Ala Val Thr Gly Cys Ile
          35          40          45
Asp Glu Lys Asp His Tyr Lys Pro Asp Asp Lys Thr Ser Gly Val Pro
          50          55          60
Asn Ser Phe Asp Phe Ala Thr Thr Gln Asp Val Gln Leu Asp Leu Lys
65          70          75          80
Tyr Asp Val Pro Val Lys Asp Tyr Gln Val Leu Phe Glu Leu Tyr Phe
          85          90          95
Glu Asn Pro Leu Thr Thr Asp Ala Glu Gly Gln Val Val Lys Arg Thr
          100          105          110
Asp Ile Thr Pro Lys Val Thr Arg Met Thr Asp Gly Thr Gly Lys Tyr
          115          120          125
Arg Ala Lys Glu Thr Val Pro Ala Tyr Gly Glu Glu Val Tyr Ile Tyr
          130          135          140
Thr Ser Tyr Ile Gly Val Pro Met Leu Tyr Lys Thr Lys Ile Val Gly
145          150          155          160
Asn Thr Ile Thr Ala Asp Ile Asn Trp Asp Thr Ala Ala Glu Glu Ser
          165          170          175
Val Gln Thr Arg Ala Glu Gly Glu Tyr Gln Thr Val Pro Gln Gly Phe
          180          185          190
Tyr Thr Leu Gly Ser Trp Asn Val Lys Gly Arg Pro Asn Tyr Leu Asp
          195          200          205
Ser Glu Gly Val Ile Glu Leu Thr Ser Ser Phe Tyr Gln Thr Ile Asn
          210          215          220
Gln Thr Ile Pro Glu Gly Gly Asn Cys Pro Arg Lys Tyr Arg Gln Ser
225          230          235          240
Ala Asp Ile Val Ile Asn Asp Glu Leu Gly Ala Glu Val Lys Val Arg
          245          250          255
Phe Val Gly Gly Thr Ser Ala Ala Tyr Ser Ala Phe Gly Tyr Tyr Cys
          260          265          270
Tyr Pro Glu Gly Ala Ala Lys Lys Gln Ile Glu Asn Ala Arg Lys Tyr
          275          280          285
Val Val Phe Pro Asn Thr Lys Thr Gly Val Gly Ile Lys Gly Gly Glu
          290          295          300
Cys Val Lys Leu His Tyr Ile Asp Glu Asn Gly Glu Asp Gln Gly Thr
305          310          315          320
Thr Phe Pro Lys Gly Thr Lys Ile Gly Trp Phe Ile Ser Asn Asp Ala
          325          330          335
Phe Thr Lys Lys Gly Glu Lys Thr Gly Ser Val Gly Lys Gly Leu Gly
          340          345          350
Met Phe Tyr Ser Thr Thr Ala Leu Asn Ser Asp Gly Arg Thr His Thr
          355          360          365
Ala Ala Phe Lys Ile Asn Asp Phe Ile Val Leu Ser Phe Glu Asp Trp
          370          375          380
Thr Asp Gln Asp Tyr Asn Asp Val Met Phe Asn Ile Trp Ser Asn Pro
385          390          395          400
Ile Glu Ala Ile Ala Pro Asp Val Pro Ser Val Asp Pro Ile Asp Pro

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405 410 415
 Asp Asp Ala Ser Val Ala Tyr Arg Met Thr Tyr Lys Gly Ile Leu Ala
 420 425 430
 Phe Glu Asp Asn Trp Pro Ser Lys Gly Asp Tyr Asp Leu Asn Asp Val
 435 440 445
 Ile Val Lys Tyr Ser Ser Ile Leu Glu Phe Asn Thr Lys Asn Gln Val
 450 455 460
 Leu Ser Ala Glu Asp Thr Phe Thr Ala Met Trp Ser Gly Ala Leu Phe
 465 470 475 480
 Lys Asn Gly Phe Ala Tyr Gln Leu Asn Thr Asp Arg Ser Asn Val Glu
 485 490 495
 Cys Ser Ile Leu Glu Gly Lys Ser Gly Trp Asp Lys Gln Gly Leu Asp
 500 505 510
 Lys Asp Leu Glu Gln Ala Thr Ile Ser Val Phe Ala Asn Ala Ile Glu
 515 520 525
 Glu Thr Gly Glu Asn Thr Lys Thr Ser Thr Phe Lys Ile Gln Asn Lys
 530 535 540
 Phe Lys Gln Pro Val Asp His Glu Thr Phe Gly Val Ala Pro Tyr Asn
 545 550 555 560
 Pro Phe Ile Phe Leu His Gln Asn Thr Asp Lys Asn Arg Thr Glu Val
 565 570 575
 His Leu Val Asn His Gly Pro Thr Ser Lys Glu Asn Met Asn Leu Phe
 580 585 590
 Asn Thr Gln Gln Asp Leu Ser Asp Lys Asp Lys Gly Ile Tyr Tyr Val
 595 600 605
 Ser Asp Gln Asn Tyr Pro Phe Ala Ile His Leu Ser Asp Val Glu Ser
 610 615 620
 Phe Ser Thr Thr Glu Lys Glu Ala Ile Asp Lys Ser Tyr Pro Arg Phe
 625 630 635 640
 Ala Ser Trp Ala Gln Ser Gly Gly Thr Thr Asp Lys Asp Trp Tyr Leu
 645 650 655
 Lys Lys

<210> 9654

<211> 198

<212> PRT

<213> B.fragilis

<400> 9654

Asn Val Ile Lys Met Lys Lys Ile Val Phe Leu Leu Leu Leu Cys Val
 1 5 10 15
 Ala Cys Cys Met Asn Ala Gln Glu Phe His Leu Ile Pro Lys Val Gly
 20 25 30
 Leu Asn Leu Ala Asn Thr Thr Gly Glu Val Asp Ser Lys Val Arg Pro
 35 40 45
 Gly Leu Asn Ile Gly Leu Gly Gly Asp Val Met Leu Thr Glu Arg Phe
 50 55 60
 Gly Ile Glu Thr Gly Val Tyr Tyr Ser Met Gln Gly Ser Lys Tyr Lys
 65 70 75 80
 Gly Gly Gly Val Ser Tyr Thr Asp Lys Leu Asp Tyr Ile Asn Val Pro
 85 90 95
 Val Tyr Ala Lys Glu Phe Ile Tyr Lys Gly Leu Tyr Val Phe Gly Gly
 100 105 110
 Pro Gln Phe Ser Phe Asn Val Asn Ser Glu Asn Lys Ser Ser Ser Asp
 115 120 125
 Tyr Gly Thr Thr Val Ile Gly Met Asn Val Ile Arg Lys Phe Asp Cys
 130 135 140
 Gly Val Gly Leu Gly Ala Gly Tyr Gln Phe Glu Arg Gly Leu Leu Ile

145 150 155 160
 Ser Leu Asn Tyr Asn Ile Gly Leu Ile Asn Val Asn Lys Ser Trp Ala
 165 170 175
 Ser Asp Ser Asn Pro Lys Ala Asn Asn Ser Val Val Gln Leu Asn Val
 180 185 190
 Gly Trp Arg Phe Ala Leu
 195

<210> 9655
 <211> 247
 <212> PRT
 <213> B.fragilis

<400> 9655
 Met Ser Asn Asn Lys Lys Ile Gly Ser Tyr Lys Phe Ile Ala Glu Pro
 1 5 10 15
 Phe His Val Asp Phe Asn Gly Arg Leu Thr Met Gly Val Leu Gly Asn
 20 25 30
 His Leu Leu Asn Cys Ala Gly Phe His Ala Ser Glu Arg Gly Phe Gly
 35 40 45
 Ile Ala Thr Leu Asn Glu Asp Asn Tyr Thr Trp Val Leu Ser Arg Leu
 50 55 60
 Ala Ile Asp Leu Glu Glu Met Pro Tyr Gln Tyr Glu Glu Phe Thr Val
 65 70 75 80
 Gln Thr Trp Val Glu Asn Val Tyr Arg Leu Phe Thr Asp Arg Asn Phe
 85 90 95
 Ala Ile Ile Asp Lys Asp Gly Lys Lys Ile Gly Tyr Ala Arg Ser Val
 100 105 110
 Trp Ala Met Ile Asn Leu Asn Thr Arg Lys Pro Ala Asp Leu Leu Thr
 115 120 125
 Leu His Gly Gly Ser Ile Val Asp Tyr Val Cys Asp Glu Pro Cys Pro
 130 135 140
 Ile Glu Lys Pro Ser Arg Ile Lys Val Ala Thr Asp Gln Pro Cys Ala
 145 150 155 160
 Lys Leu Thr Ala Lys Tyr Ser Asp Ile Asp Ile Asn Gly His Val Asn
 165 170 175
 Ser Ile Arg Tyr Ile Glu His Ile Leu Asp Leu Phe Pro Ile Asp Leu
 180 185 190
 Tyr Lys Ser Lys Arg Ile Gln Arg Phe Glu Met Ala Tyr Val Ala Glu
 195 200 205
 Ser Tyr Tyr Gly Asp Glu Leu Ser Phe Phe Glu Glu Glu Val Ser Glu
 210 215 220
 Asn Glu Tyr His Val Glu Ile Lys Lys Asn Gly Ser Glu Val Val Cys
 225 230 235 240
 Arg Ala Lys Val Lys Phe Val
 245

<210> 9656
 <211> 790
 <212> PRT
 <213> B.fragilis

<400> 9656
 Leu Leu Thr Lys Phe Pro Ala Lys Ile Thr Ile Leu Phe Pro Gly Trp
 1 5 10 15
 Asn Lys His Phe Asn Leu Leu Asn Leu Ser Phe Ile Leu Leu Val Ile
 20 25 30
 Ile Asn Arg Arg Thr Asp Lys Thr Glu Ile Val Met Val Tyr Asp Leu
 35 40 45

Asn Met Leu Lys Ser Phe Tyr Ala Ser Tyr Lys Gly Lys Met Glu His
 50 55 60
 Val Arg Ala Ala Leu Lys Arg Pro Leu Thr Leu Ala Glu Lys Ile Leu
 65 70 75 80
 Tyr Thr His Leu Tyr Asn Val Ala Asp Leu Lys Asn Tyr Glu Arg Gly
 85 90 95
 Glu Asp Tyr Val Asn Phe Arg Pro Asp Arg Val Ala Met Gln Asp Ala
 100 105 110
 Thr Ala Gln Met Ala Leu Leu Gln Phe Met Asn Ala Gly Lys Glu Ala
 115 120 125
 Val Ala Val Pro Ser Thr Val His Cys Asp His Leu Ile Gln Ala Tyr
 130 135 140
 Arg Gly Ala Glu Arg Asp Ile Glu Thr Ala Thr Gln Thr Asn Arg Glu
 145 150 155 160
 Val Tyr Asp Phe Leu Arg Asp Val Ser Ser Arg Tyr Gly Ile Gly Phe
 165 170 175
 Trp Lys Pro Gly Ala Gly Ile Ile His Gln Val Val Leu Glu Asn Tyr
 180 185 190
 Ala Phe Pro Gly Gly Met Met Val Gly Thr Asp Ser His Thr Pro Asn
 195 200 205
 Ala Gly Gly Leu Gly Met Val Ala Ile Gly Val Gly Gly Ala Asp Ala
 210 215 220
 Val Asp Val Met Thr Gly Met Glu Trp Glu Leu Lys Met Pro Lys Leu
 225 230 235 240
 Ile Gly Val Arg Leu Thr Gly Glu Leu Asn Gly Trp Thr Ala Pro Lys
 245 250 255
 Asp Val Ile Leu Lys Leu Ala Gly Ile Leu Thr Val Lys Gly Gly Thr
 260 265 270
 Asn Ala Ile Ile Glu Tyr Phe Gly Pro Gly Thr Ala Ser Leu Ser Ala
 275 280 285
 Thr Gly Lys Ala Thr Ile Cys Asn Met Gly Ala Glu Val Gly Ala Thr
 290 295 300
 Thr Ser Leu Phe Pro Tyr Asp Glu Arg Met Ala Val Tyr Leu Lys Ala
 305 310 315 320
 Thr Gly Arg Glu Glu Val Ala Ala Met Ala Asp Ser Val Ala Ala Asp
 325 330 335
 Leu Arg Ala Asp Asp Glu Val Met Ala Arg Pro Gly Asp Phe Tyr Asp
 340 345 350
 Arg Val Ile Glu Ile Asn Leu Ser Glu Leu Glu Pro Tyr Ile Asn Gly
 355 360 365
 Pro Phe Thr Pro Asp Ala Ala Thr Pro Ile Ser Glu Phe Ala Glu Lys
 370 375 380
 Val Val Thr Asn Gly Tyr Pro Arg Lys Met Glu Val Gly Leu Ile Gly
 385 390 395 400
 Ser Cys Thr Asn Ser Ser Tyr Gln Asp Ile Ser Arg Ala Ala Ser Val
 405 410 415
 Ala Arg Gln Val Asn Glu Lys Asn Leu Gly Val Ala Ala Pro Leu Ile
 420 425 430
 Val Asn Pro Gly Ser Glu Gln Ile Arg Ala Thr Ala Glu Arg Asp Gly
 435 440 445
 Met Met Asp Val Phe Glu Lys Met Gly Ala Thr Ile Met Ala Asn Ala
 450 455 460
 Cys Gly Pro Cys Ile Gly Gln Trp Lys Arg His Thr Asp Asp Pro Thr
 465 470 475 480
 Arg Lys Asn Ser Ile Val Thr Ser Phe Asn Arg Asn Phe Ala Lys Arg
 485 490 495
 Ala Asp Gly Asn Pro Asn Thr Phe Ala Phe Val Ala Ser Pro Glu Ile
 500 505 510
 Val Leu Ala Leu Thr Ile Ala Gly Asp Leu Cys Phe Asn Pro Leu Lys


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      515              520              525
Asp Arg Leu Val Asn His Asp Gly Glu Lys Val Lys Leu Ser Glu Pro
530              535              540
Gln Gly Asp Glu Leu Pro Ser Ala Gly Phe Val Ala Gly Asn Gln Gly
545              550              555              560
Tyr Gln Ala Pro Gly Glu Lys Asn Glu Ile Arg Val Ala Pro Asp
      565              570              575
Ser Gln Arg Leu Gln Leu Leu Thr Pro Phe Pro Ala Trp Asp Gly Asn
      580              585              590
Asp Phe Leu Asn Met Pro Leu Leu Ile Lys Ala Gln Gly Lys Cys Thr
      595              600              605
Thr Asp His Ile Ser Met Ala Gly Pro Trp Leu Arg Phe Arg Gly His
      610              615              620
Leu Glu Asn Ile Ser Asp Asn Met Leu Met Gly Ala Val Asn Ala Phe
625              630              635              640
Asn Gly Glu Thr Asn Lys Val Trp Asn Arg Leu Thr Asn Thr Tyr Glu
      645              650              655
Thr Val Ser Gly Thr Ala Lys Gln Tyr Lys Ala Asp Gly Ile Ser Ser
      660              665              670
Ile Val Val Ala Glu Glu Asn Tyr Gly Glu Gly Ser Ser Arg Glu His
      675              680              685
Ala Ala Met Glu Pro Arg Phe Leu His Val Lys Val Ile Leu Ala Lys
      690              695              700
Ser Phe Ala Arg Ile His Glu Thr Asn Leu Lys Lys Gln Gly Met Leu
705              710              715              720
Ala Val Thr Phe Ala Asp Lys Ala Asp Tyr Asp Arg Ile Arg Glu His
      725              730              735
Asp Leu Ile Ser Val Val Gly Leu Lys Glu Phe Ser Pro Gly Arg Asn
      740              745              750
Leu Glu Val Ile Leu His His Glu Asp Gly Thr Glu Glu Arg Phe Val
      755              760              765
Val Gln His Thr Tyr Asn Glu Gln Gln Ile Gly Trp Phe Arg Ala Gly
      770              775              780
Ser Ala Leu Asn Ala Lys
785              790

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<210> 9657

<211> 153

<212> PRT

<213> B.fragilis

<400> 9657

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Arg Arg Leu Asn Val Ser Ala Ser Ser Ile Lys Gly Val His Lys Tyr
1              5              10              15
Thr Ile Thr Ala Trp Thr Asp Lys Asp Thr Ile Glu Lys Val Val Lys
      20              25              30
Gln Ile Glu Lys Lys Ile Asp Val Leu Gln Ala His Tyr Phe Thr Glu
      35              40              45
Asp Glu Ile Tyr Phe His Glu Ile Ala Leu Tyr Lys Val Ser Met Pro
      50              55              60
Glu Phe Gln Ser Gln Pro Glu Ala Ser Lys Val Ile Arg Arg Tyr Asn
      65              70              75              80
Ala Arg Ile Val Glu Val Asn Pro Val Phe Ala Ile Val Glu Lys Asn
      85              90              95
Gly Ile Ser Glu Glu Ile Thr Ser Leu Tyr Glu Glu Leu Ser Ala Leu
      100              105              110
Asn Cys Val Leu Gln Phe Val Arg Ser Gly Arg Val Ala Ile Thr Thr
      115              120              125
Ser Cys Phe Glu Arg Val Asn Glu Phe Leu Ala Asp Arg Glu Thr Lys

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130 135 140
 Tyr Asn Leu Ser Lys Lys Glu Glu Lys
 145 150

<210> 9658
 <211> 303
 <212> PRT
 <213> B.fragilis

<400> 9658
 Met Ser Lys Ile Thr Lys Gln Gln Asn Gly Val Leu Ser Val Pro Asp
 1 5 10 15
 Val Pro Thr Ile Pro Phe Ile Thr Gly Asp Gly Val Gly Ala Glu Ile
 20 25 30
 Thr Pro Ala Met Gln Ala Ile Val Asp Ala Ala Val Asp Met Ser Tyr
 35 40 45
 Gly Gly Ala Arg Arg Ile Glu Trp Lys Glu Val Leu Ala Gly Glu Arg
 50 55 60
 Ala Phe Arg Ala Thr Gly Ser Trp Leu Pro Asp Glu Thr Met Glu Val
 65 70 75 80
 Phe Lys Glu Tyr Leu Ile Gly Ile Lys Gly Pro Leu Thr Thr Pro Val
 85 90 95
 Gly Gly Gly Ile Arg Ser Leu Asn Val Ala Leu Arg Gln Thr Leu Asp
 100 105 110
 Leu Tyr Val Cys Leu Arg Pro Val Arg Trp Phe Arg Gly Val Val Ser
 115 120 125
 Pro Val Lys Glu Pro Glu Lys Val Asn Met Tyr Ile Phe Arg Glu Asn
 130 135 140
 Thr Glu Asp Ile Tyr Ala Gly Ile Glu Trp Glu Ala Gly Thr Pro Glu
 145 150 155 160
 Ala Lys Lys Phe Tyr Arg Phe Leu His Glu Glu Met Gly Val Ser Lys
 165 170 175
 Val Arg Phe Pro Glu Thr Ser Ser Phe Gly Val Lys Pro Val Ser Arg
 180 185 190
 Glu Gly Thr Glu Arg Leu Val Arg Ala Ala Cys Arg Tyr Ala Leu Gln
 195 200 205
 His Glu Leu Pro Ser Val Thr Leu Val His Lys Gly Asn Ile Met Lys
 210 215 220
 Phe Thr Glu Gly Gly Phe Lys Lys Trp Gly Tyr Glu Leu Ala Glu Arg
 225 230 235 240
 Glu Phe Ala Asp Ala Leu Ala Ser Gly Lys Leu Val Ile Lys Asp Cys
 245 250 255
 Ile Ala Asp Ala Phe Leu Gln Asn Thr Leu Leu Ile Pro Glu Glu Tyr
 260 265 270
 Ser Val Ile Ala Thr Leu Asn Leu Asn Val Phe Thr Thr Gly Leu Glu
 275 280 285
 Gly Ser Ala Gly Gly Val Lys Lys Asp Pro Thr Arg Trp Cys Tyr
 290 295 300

<210> 9659
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 9659
 Leu Leu Leu Pro Leu His Thr Ile Cys Lys Glu Met Lys Asp Thr Lys
 1 5 10 15
 Gln Gln Phe Glu His Val Ile Ala Leu Cys Arg Asp Leu Phe Ser Lys
 20 25 30

Lys Leu His Asp Tyr Gly Pro Ala Trp Arg Ile Leu Arg Pro Ala Ser
 35 40 45
 Val Thr Asp Gln Ile Phe Ile Lys Ala Asn Arg Ile Arg Ser Ile Glu
 50 55 60
 Val Lys Gly Val Thr Leu Val Asp Glu Gly Ile Arg Ser Glu Phe Ile
 65 70 75 80
 Ala Ile Val Asn Tyr Gly Ile Val Gly Leu Ile Gln Leu Glu Leu Gly
 85 90 95
 Tyr Ala Glu Ser Ala Asp Ile Thr Val Glu Glu Ala Leu Ala Leu Tyr
 100 105 110
 Asp Lys His Ala Lys Glu Ala Leu Glu Leu Met Leu Ala Lys Asn His
 115 120 125
 Asp Tyr Asp Glu Ala Trp Arg Ser Met Arg Ile Ser Ser Tyr Thr Asp
 130 135 140
 Leu Ile Leu Met Lys Ile Tyr Arg Thr Lys Gln Ile Glu Ser Leu Ala
 145 150 155 160
 Gly Gln Thr Leu Val Ser Glu Gly Ile Asp Ala Asn Tyr Met Asp Met
 165 170 175
 Ile Asn Tyr Ser Val Phe Gly Leu Ile Lys Ile Glu Phe Glu Gly
 180 185 190

<210> 9660

<211> 123

<212> PRT

<213> B.fragilis

<400> 9660

Thr Leu Tyr Thr Gly Arg Gly Lys Pro Pro Ser Pro Ile Glu Arg Pro
 1 5 10 15
 Pro Arg Leu Asn Val Pro Tyr Pro Pro Thr Pro Asp Phe Ala Pro Val
 20 25 30
 Lys Glu Leu Pro Ser Leu Leu Pro Ser Thr Pro Ser Pro Glu Val Ala
 35 40 45
 Val Pro Leu Leu Pro Pro Ile Cys Glu Pro Leu Pro Lys Ala Pro Ala
 50 55 60
 Thr Arg Leu Leu Ala Ala Ser Ala Ala Ala Leu Arg Ser Arg Ser Ala
 65 70 75 80
 Phe Ser Ser Ala Ser Phe Leu Ala Ser Ala Ala Phe Ser Ser Gly Val
 85 90 95
 Phe Ser Gly Phe Phe Ala Thr Phe Gly Phe Ser Phe Leu Gly Ser Ala
 100 105 110
 Leu Gly Phe Thr Thr Thr Val Ser Ser Ser Val
 115 120

<210> 9661

<211> 299

<212> PRT

<213> B.fragilis

<400> 9661

Ile Glu Leu Thr Arg Arg Met Asn Phe Asn Cys Ile Lys Thr Val Met
 1 5 10 15
 Ile Ala Ala Ala Ala Met Ile Ser Leu Asn Ser Phe Ser Gln Asp Leu
 20 25 30
 Ile Ala Arg Gln Ala Pro Ile Asp Arg Lys Leu Lys Ser Val Asp Ser
 35 40 45
 Leu Ala Leu Gln Lys Gln Ile Arg Ala Glu Gln Ser Glu Tyr Pro Ala
 50 55 60
 Leu Ser Leu Tyr Pro Asn Trp Asn Asn Gln Tyr Val His Ala Tyr Gly

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65          70          75          80
Lys Asp Ala Ile Ile Pro Asp Ser Tyr Thr Ile Asp Leu Thr Gly Phe
      85          90          95
His Met Pro Thr Pro Ser Thr Arg Ile Thr Ser Pro Phe Gly Pro Arg
      100          105          110
Trp Arg Arg Met His Asn Gly Leu Asp Ile Lys Val Asn Ile Gly Asp
      115          120          125
Thr Ile Val Ala Ala Phe Asp Gly Lys Val Arg Ile Val Lys Tyr Glu
      130          135          140
Arg Arg Gly Tyr Gly Lys Tyr Val Val Ile Arg His Asp Asn Gly Leu
145          150          155          160
Glu Thr Val Tyr Gly His Leu Ser Lys Gln Leu Val Glu Glu Asn Gln
      165          170          175
Leu Val Lys Ala Gly Glu Pro Ile Ala Leu Gly Gly Asn Thr Gly Arg
      180          185          190
Ser Thr Gly Ser His Leu His Phe Glu Thr Arg Phe Leu Gly Ile Ala
      195          200          205
Ile Asn Pro Ala Leu Met Phe Asp Phe Pro Lys Gln Asp Ile Val Ala
      210          215          220
Asp Thr Tyr Thr Phe Arg Lys Thr Arg Gly Tyr Glu Arg Asn Arg Ala
225          230          235          240
Gly Ser His Asp Thr Asn Ile Ala Ser Asp Gly Glu Ile Arg Tyr Tyr
      245          250          255
Lys Val Lys Lys Gly Asp Ser Leu Ser Arg Ile Ala Lys Leu Arg Gly
      260          265          270
Val Ser Val Ser Thr Leu Cys Lys Leu Asn Arg Ile Thr Thr Lys Thr
      275          280          285
Thr Leu Arg Pro Gly Gln Val Leu Arg Cys Ser
      290          295

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<210> 9662

<211> 184

<212> PRT

<213> B.fragilis

<400> 9662

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Ile Met Gly Thr Val Tyr Ala Phe Phe Ala Asp Gly Phe Glu Glu Ile
1          5          10          15
Glu Ala Leu Thr Thr Ile Asp Thr Leu Arg Arg Ala Gly Leu Asp Val
      20          25          30
Glu Ile Val Ser Val Thr Pro Asp Glu Ile Val Val Gly Ala His Asp
      35          40          45
Val Ser Val Leu Cys Asp Lys Asn Phe Glu Asn Cys Asp Phe Phe Asp
      50          55          60
Ala Glu Leu Leu Phe Leu Pro Gly Gly Met Pro Gly Ala Ala Thr Leu
65          70          75          80
Asp Lys His Glu Gly Leu Arg Lys Leu Ile Leu Ser Phe Ala Glu Lys
      85          90          95
Asn Lys Pro Ile Ala Ala Ile Cys Ala Ala Pro Met Val Leu Gly Lys
      100          105          110
Leu Gly Leu Leu Lys Gly Arg Arg Val Thr Cys Tyr Pro Ser Phe Glu
      115          120          125
Gln Tyr Leu Asp Gly Ala Asp Cys Thr Asn Glu Pro Val Val Arg Asp
      130          135          140
Gly Asn Ile Ile Thr Gly Met Gly Pro Gly Ala Ala Met Glu Phe Ala
145          150          155          160
Leu Thr Ile Val Asp Thr Leu Leu Gly Lys Glu Lys Val Asn Glu Leu
      165          170          175
Val Glu Ala Met Cys Val Arg Arg

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180

<210> 9663
 <211> 166
 <212> PRT
 <213> B.fragilis

<400> 9663
 Ile Asn Glu His Phe Asn Leu Leu Lys Leu Tyr Val Met Met Glu Lys
 1 5 10 15
 Thr Leu Val Ile Leu Lys Pro Cys Thr Leu Gln Arg Gly Leu Val Gly
 20 25 30
 Glu Ile Thr Arg Arg Phe Glu Arg Lys Gly Leu Arg Leu Ala Gly Met
 35 40 45
 Lys Met Val Gln Leu Thr Asp Glu Val Leu Ser Glu His Tyr Ser His
 50 55 60
 Leu Ser Ser Lys Pro Phe Phe Gln Arg Val Lys Asp Ser Met Met Thr
 65 70 75 80
 Ala Pro Val Ile Val Cys Cys Phe Glu Gly Val Asp Ala Ile Gln Ala
 85 90 95
 Val Arg Ala Leu Ala Gly Pro Thr Asn Gly Arg Leu Ala Ala Pro Gly
 100 105 110
 Thr Ile Arg Gly Asp Tyr Ser Met Ser Phe Gln Glu Asn Ile Val His
 115 120 125
 Thr Ser Asp Ser Pro Glu Thr Ala Ala Val Glu Leu Asn Arg Phe Phe
 130 135 140
 Lys Pro Glu Glu Ile Phe Asp Tyr Lys Gln Ala Thr Phe Asp Tyr Leu
 145 150 155 160
 Tyr Ala Asn Asp Glu Tyr
 165

<210> 9664
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 9664
 Asp Asn Ser Asn Thr Glu Lys Lys Ser Gln Ile Cys Asp Ile Leu Glu
 1 5 10 15
 Thr Phe Ile Asn Met Lys Phe Ala Ile Phe Gly Asn Thr Tyr Gln Ala
 20 25 30
 Lys Lys Ser Ser His Ala Ala Thr Leu Phe Lys Leu Leu Glu Lys His
 35 40 45
 Gly Ala Glu Ile Cys Val Cys Arg Glu Phe His Arg Phe Leu Lys Ser
 50 55 60
 Asp Leu Lys Leu Asn Val Lys Ala Asp Asp Leu Phe Asp Glu Asn Asn
 65 70 75 80
 Phe Asp Ala Asp Met Val Ile Ser Ile Gly Gly Asp Gly Thr Phe Leu
 85 90 95
 Lys Ala Ala Arg Arg Val Gly Asn Lys Gly Ile Pro Ile Leu Gly Ile
 100 105 110
 Asn Thr Gly Arg Leu Gly Phe Leu Ala Asp Val Ser Pro Glu Glu Met
 115 120 125
 Glu Glu Thr Ile Glu Glu Val Tyr Gln Asn His Tyr Thr Val Glu Glu
 130 135 140
 Arg Ser Val Leu Gln Leu Leu Cys Asp Asp Lys His Leu Gln Asn Ser
 145 150 155 160
 Pro Tyr Ala Leu Asn Glu Ile Ala Ile Leu Lys Arg Asp Ser Ser Ser
 165 170 175

Met Ile Ser Ile Arg Thr Ala Ile Asn Gly Ala His Leu Thr Thr Tyr
 180 185 190
 Gln Ala Asp Gly Leu Ile Ile Ala Thr Pro Thr Gly Ser Thr Ala Tyr
 195 200 205
 Ser Leu Ser Val Gly Gly Pro Ile Ile Val Pro His Ser Lys Thr Ile
 210 215 220
 Ala Ile Thr Pro Val Ala Pro His Ser Leu Asn Val Arg Pro Ile Val
 225 230 235 240
 Ile Cys Asp Asp Trp Glu Ile Thr Leu Asp Val Glu Ser Arg Ser His
 245 250 255
 Asn Phe Leu Val Ala Ile Asp Gly Ser Ser Glu Thr Cys Lys Glu Thr
 260 265 270
 Thr Arg Leu Thr Ile Arg Arg Ala Asp Tyr Ser Ile Lys Val Val Lys
 275 280 285
 Arg Phe Asn His Ile Phe Phe Asp Thr Leu Arg Thr Lys Met Met Trp
 290 295 300
 Gly Ala Asp Ser Arg Val
 305 310

<210> 9665

<211> 257

<212> PRT

<213> B.fragilis

<400> 9665

Pro Ser Ile Asp Pro Pro Ala Asp Pro Ser Ser Pro Val Val Lys Thr
 1 5 10 15
 Asn Val Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu
 20 25 30
 Leu Glu Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly
 35 40 45
 Ser Cys Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His
 50 55 60
 Phe Tyr Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe
 65 70 75 80
 Ala Leu Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu
 85 90 95
 Leu Asn Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu
 100 105 110
 Val Ile Gln Arg Gln Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu
 115 120 125
 Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser
 130 135 140
 Thr Arg Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg
 145 150 155 160
 Ile Phe Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys
 165 170 175
 Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile
 180 185 190
 His Asn Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe
 195 200 205
 Gly Leu Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile
 210 215 220
 Ser Val Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn
 225 230 235 240
 Ile Tyr Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe
 245 250 255
 Gly

Ile Leu Val Val Lys Arg Leu Glu Lys Arg Arg Lys Arg Ala Ala Glu
 420 425 430
 Lys Ala Val Glu Asn Ser Lys Ser Ser Ser Glu Ala
 435 440

<210> 9667
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9667
 Arg Arg His Cys Thr Met Glu Trp Met Tyr Arg Leu His Gly Gln Phe
 1 5 10 15
 Gly Ala Thr Asp Thr Asp Ala Met Trp Val Ser Gly Trp Gly Gly Ser
 20 25 30
 Ala Leu His Arg Arg Leu Cys Arg Cys Leu Met Cys Cys Ile Gly Leu
 35 40 45
 Val Ser Asp Thr Ile Arg Ile Arg Pro Gly Gly Asn Thr Ile Gly Val
 50 55 60
 Ser Cys Glu Gly Val Ser Met Asp Ala Asn Gly Met Arg Ala Arg Ala
 65 70 75 80
 Gly Ile Val Thr Ala
 85

<210> 9668
 <211> 223
 <212> PRT
 <213> B.fragilis

<400> 9668
 Asp Val Lys Leu Met Cys Arg Thr Ala Leu Ile Val Ala Gly Gly Lys
 1 5 10 15
 Gly Leu Arg Met Gly Ser Glu Leu Pro Lys Gln Phe Leu Pro Ile Gly
 20 25 30
 Gly Lys Pro Val Leu Met Arg Thr Leu Glu Ala Phe His Arg Phe Asp
 35 40 45
 Glu Lys Met Gln Ile Ile Leu Val Leu Pro Arg Glu Gln Gln Asp Phe
 50 55 60
 Trp Arg Glu Leu Cys Glu Glu His Gly Phe Asp Ile Lys His Leu Ile
 65 70 75 80
 Ala Asp Gly Gly Glu Thr Arg Phe His Ser Val Lys Asn Gly Leu Ala
 85 90 95
 Leu Val Asn Gly Ile Gly Val Val Gly Ile His Asp Gly Val Arg Pro
 100 105 110
 Phe Val Ser Gln Glu Val Ile Ala Arg Cys Phe Arg Glu Ala Val Val
 115 120 125
 Arg Lys Ala Val Ile Pro Val Ile Asp Val Val Glu Thr Val Arg His
 130 135 140
 Leu Thr Glu Ser Gly Ser Glu Thr Val Ser Arg Asn Asp Tyr Lys Leu
 145 150 155 160
 Val Gln Thr Pro Gln Val Phe Asp Ala Asp Leu Leu Lys Arg Ala Tyr
 165 170 175
 Glu Gln Glu Phe Thr Pro Phe Phe Thr Asp Asp Ala Ser Val Val Glu
 180 185 190
 Ala Met Gly Val Pro Val Tyr Leu Val Glu Gly Asn Arg Glu Asn Ile
 195 200 205
 Lys Ile Thr Thr Pro Phe Asp Leu Lys Val Ala Ser Ala Leu Leu
 210 215 220

<210> 9669
 <211> 267
 <212> PRT
 <213> B.fragilis

<400> 9669

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Met Asn Asn Arg Ile Glu Asn Leu Leu Thr Leu Leu Ile Lys Asn Lys
1      5      10      15
Met Arg Lys Asn Ile Val Ala Gly Asn Trp Lys Met Asn Lys Thr Leu
      20      25      30
Gln Glu Gly Ile Ala Leu Ala Lys Glu Leu Asn Glu Ala Leu Ala Asn
      35      40      45
Glu Lys Pro Asn Cys Asp Val Ile Ile Cys Thr Pro Phe Ile His Leu
      50      55      60
Ala Ser Val Thr Pro Leu Val Asp Ala Ala Lys Ile Gly Val Gly Ala
65      70      75      80
Glu Asn Cys Ala Asp Lys Glu Ser Gly Ala Tyr Thr Gly Glu Val Ser
      85      90      95
Ala Ala Met Val Ala Ser Thr Gly Ala Lys Tyr Val Ile Leu Gly His
      100     105     110
Ser Glu Arg Arg Ala Tyr Tyr Gly Glu Thr Val Glu Ile Leu Lys Asp
      115     120     125
Lys Val Lys Leu Ala Leu Ala Asn Gly Leu Thr Pro Ile Phe Cys Ile
      130     135     140
Gly Glu Val Leu Glu Glu Arg Glu Ala Asn Lys Gln Asn Glu Val Val
145     150     155     160
Ala Ala Gln Leu Ala Ser Val Phe Asp Leu Ser Ala Glu Asp Phe Ser
      165     170     175
Lys Ile Val Leu Ala Tyr Glu Pro Val Trp Ala Ile Gly Thr Gly Lys
      180     185     190
Thr Ala Ser Pro Ala Gln Ala Gln Glu Ile His Ala Phe Ile Arg Ser
      195     200     205
Ala Val Ala Glu Lys Tyr Gly Lys Glu Ile Ala Asp Asn Thr Ser Ile
      210     215     220
Leu Tyr Gly Gly Ser Cys Lys Pro Ser Asn Ala Lys Glu Leu Phe Ala
225     230     235     240
Asn Pro Asp Val Asp Gly Gly Leu Ile Gly Gly Ala Ala Leu Lys Val
      245     250     255
Ala Asp Phe Lys Gly Ile Ile Asp Ala Phe Asn
      260     265

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<210> 9670
 <211> 707
 <212> PRT
 <213> B.fragilis

<400> 9670

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Phe Glu Ser Ser Phe Ser Leu Val Val Met Phe Asp Leu Thr Thr Arg
1      5      10      15
Asp Ile Lys Tyr Leu Ser Gly Val Gly Pro Gln Lys Ala Ala Val Leu
      20      25      30
Asn Lys Glu Leu Glu Ile Tyr Ser Leu His Asp Leu Leu Tyr Tyr Phe
      35      40      45
Pro Tyr Lys Tyr Val Asp Arg Ser Arg Ile Tyr Tyr Ile His Glu Ile
      50      55      60
Asp Gly Asn Met Pro Tyr Ile Gln Leu Lys Gly Lys Ile Leu Gly Phe
65      70      75      80
Glu Thr Phe Gly Glu Gly Arg Gln Arg Arg Leu Leu Ala His Phe Ser
      85      90      95

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Asp Gly Thr Gly Val Val Asp Leu Val Trp Phe Gln Gly Ile Lys Tyr
 100 105 110
 Val Thr Asn Lys Tyr Lys Leu His Glu Glu Tyr Ile Val Phe Gly Lys
 115 120 125
 Pro Thr Val Phe Asn Gly Arg Ile Asn Val Ala His Pro Asp Ile Asp
 130 135 140
 Ser Pro Ala Asp Leu Lys Leu Ser Ser Met Gly Leu Gln Pro Tyr Tyr
 145 150 155 160
 Asn Thr Thr Glu Lys Met Lys Arg Ser Phe Leu Asn Ser His Ala Ile
 165 170 175
 Glu Lys Met Met Ala Thr Val Ile Gly Gln Ile Gln Glu Pro Leu Ser
 180 185 190
 Glu Thr Leu Ser Pro Lys Leu Ile Ala Asp His His Leu Met Ser Leu
 195 200 205
 Thr Asp Ala Leu Arg Asn Ile His Phe Pro Ser Asn Pro Glu Leu Leu
 210 215 220
 Arg Lys Ala Gln Tyr Arg Leu Lys Phe Glu Glu Leu Phe Tyr Val Gln
 225 230 235 240
 Leu Asn Ile Leu Arg Tyr Ala Lys Asp Arg Gln Arg Lys Tyr Arg Gly
 245 250 255
 Tyr Val Phe Glu Thr Val Gly Glu Ile Phe Asn Thr Phe Tyr Ser Lys
 260 265 270
 Asn Leu Pro Phe Glu Leu Thr Gly Ala Gln Lys Arg Val Leu Arg Glu
 275 280 285
 Ile Arg Gln Asp Val Gly Cys Gly Lys Gln Met Asn Arg Leu Leu Gln
 290 295 300
 Gly Asp Val Gly Ser Gly Lys Thr Leu Val Ala Leu Met Ser Met Leu
 305 310 315 320
 Met Ala Leu Asp Asn Gly Phe Gln Ala Cys Met Met Ala Pro Thr Glu
 325 330 335
 Ile Leu Ala Asn Gln His Tyr Asp Thr Ile Arg Glu Leu Leu Phe Gly
 340 345 350
 Met Asp Val Arg Val Glu Leu Leu Thr Gly Ser Val Lys Gly Lys Lys
 355 360 365
 Arg Glu Ala Ile Leu Ala Gly Leu Leu Thr Gly Asp Val His Ile Leu
 370 375 380
 Ile Gly Thr His Ala Val Ile Glu Asp Thr Val Asn Phe Ala Ser Leu
 385 390 395 400
 Gly Leu Ala Val Ile Asp Glu Gln His Arg Phe Gly Val Ala Gln Arg
 405 410 415
 Ala Arg Leu Trp Ser Lys Ser Val Gln Pro Pro His Val Leu Val Met
 420 425 430
 Thr Ala Thr Pro Ile Pro Arg Thr Leu Ala Met Thr Leu Tyr Gly Asp
 435 440 445
 Leu Asp Val Ser Val Ile Asp Glu Leu Pro Pro Gly Arg Lys Pro Ile
 450 455 460
 Ala Thr Ile His Gln Phe Asp Asn Arg Arg Glu Ser Leu Tyr Cys Ser
 465 470 475 480
 Val Arg Lys Gln Ile Glu Glu Gly Arg Gln Val Tyr Ile Val Tyr Pro
 485 490 495
 Leu Ile Lys Glu Ser Glu Lys Ile Asp Leu Lys Asn Leu Glu Glu Gly
 500 505 510
 Tyr Leu His Ile Cys Glu Glu Phe Pro Asp Cys Lys Val Cys Lys Val
 515 520 525
 His Gly Lys Met Lys Pro Ala Glu Lys Asp Ala Gln Met Gln Leu Phe
 530 535 540
 Ile Ser Gly Asp Ala Gln Ile Met Val Ala Thr Thr Val Ile Glu Val
 545 550 555 560
 Gly Val Asn Val Pro Asn Ala Ser Val Met Ile Ile Glu Asn Ala Glu

565 570 575
 Arg Phe Gly Leu Ser Gln Leu His Gln Leu Arg Gly Arg Val Gly Arg
 580 585 590
 Gly Ala Asp Gln Ser Tyr Cys Ile Leu Val Thr Thr Tyr Lys Leu Thr
 595 600 605
 Glu Glu Thr Arg Lys Arg Leu Glu Ile Met Val Arg Thr Asn Asp Gly
 610 615 620
 Phe Glu Ile Ala Glu Ala Asp Leu Lys Leu Arg Gly Pro Gly Asp Leu
 625 630 635 640
 Glu Gly Thr Gln Gln Ser Gly Ile Ala Phe Asp Leu Lys Ile Ala Asp
 645 650 655
 Ile Ala Arg Asp Gly Gln Leu Leu Gln Tyr Val Arg Thr Ile Ala Glu
 660 665 670
 Glu Ile Thr Asp Ala Asp Pro Gly Gly Val Leu Pro Glu Asn Ala Ile
 675 680 685
 Leu Trp Gln Gln Leu Arg Ala Leu Arg Lys Thr Asn Val Asn Trp Ala
 690 695 700
 Ala Ile Ser
 705

<210> 9671

<211> 88

<212> PRT

<213> B.fragilis

<400> 9671

Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60
 Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 9672

<211> 293

<212> PRT

<213> B.fragilis

<400> 9672

Asn Gly Val Gly Tyr Thr Pro Ala Gly Asn Lys Glu Glu Met Asn Ile
 1 5 10 15
 Lys Arg Lys Ser Glu Tyr Ile Gly Ala Leu Gly Ala Leu Leu Val His
 20 25 30
 Val Ala Ile Ile Ala Leu Leu Ile Leu Val Ser Phe Ala Ile Pro His
 35 40 45
 Pro Asp Glu Glu Ala Gly Gly Val Pro Val Met Met Gly Asp Val Asp
 50 55 60
 Ala Ala Tyr Gly Asn Tyr Asp Pro Ser Thr Met Val Asp Val Glu Val
 65 70 75 80
 Leu Pro Glu Glu Val Pro Ala Pro Gln Pro Glu Pro Glu Val Glu Thr
 85 90 95
 Glu Gln Glu Met Ile Thr Gln Thr Glu Glu Glu Thr Val Val Val Lys
 100 105 110

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Pro Lys Ala Glu Pro Lys Lys Glu Lys Pro Lys Val Ala Lys Lys Pro
    115                120                125
Glu Lys Thr Pro Glu Glu Lys Ala Ala Glu Ala Lys Lys Leu Ala Glu
    130                135                140
Glu Lys Ala Glu Arg Glu Arg Lys Ala Ala Glu Ala Ala Ser Lys
    145                150                155                160
Arg Val Ala Gly Ala Phe Gly Lys Gly Ser Gln Met Gly Gly Ser Lys
    165                170                175
Gly Thr Ala Thr Ser Gly Glu Gly Val Glu Gly Ser Lys Asp Gly Asn
    180                185                190
Ser Leu Thr Gly Ala Lys Ser Gly Val Gly Gly Tyr Gly Thr Phe Asn
    195                200                205
Leu Gly Gly Arg Ser Ile Gly Glu Gly Gly Leu Pro Arg Pro Val Tyr
    210                215                220
Asn Val Gln Glu Glu Gly Arg Val Val Val Ser Ile Thr Val Asn Pro
    225                230                235                240
Ala Gly His Val Ile Ala Thr Ser Ile Asn Arg Leu Thr Asn Thr Val
    245                250                255
Asn Ser Thr Leu Arg Lys Ala Ala Glu Asp Ala Ala Lys Lys Ala Arg
    260                265                270
Phe Asn Ala Val Asp Gly Val Asn Asn Gln Thr Gly Thr Ile Thr Tyr
    275                280                285
Tyr Phe Asn Leu Lys
    290

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<210> 9673

<211> 211

<212> PRT

<213> B.fragilis

<400> 9673

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Lys Leu Arg Ile Ile Leu Arg His Arg Thr Met Thr Lys Leu Ser Val
1          5          10          15
Asn Ile Asn Lys Val Ala Thr Leu Arg Asn Ala Arg Gly Gly Asn Val
    20          25          30
Pro Asn Val Val Lys Val Ala Leu Asp Cys Glu Ser Phe Gly Ala Asp
    35          40          45
Gly Ile Thr Val His Pro Arg Pro Asp Glu Arg His Ile Arg Arg Ser
    50          55          60
Asp Val Tyr Asp Leu Arg Pro Leu Leu Arg Thr Glu Phe Asn Ile Glu
    65          70          75          80
Gly Tyr Pro Ser Pro Glu Phe Ile Asp Leu Val Leu Lys Val Lys Pro
    85          90          95
His Gln Val Thr Leu Val Pro Asp Asp Pro Ser Gln Ile Thr Ser Asn
    100         105         110
Ser Gly Trp Asp Thr Lys Val Asn Phe Asp Phe Leu Thr Glu Val Leu
    115         120         125
Asp Glu Phe Asn Gly Ala Gly Ile Arg Thr Ser Val Phe Val Ala Pro
    130         135         140
Asp Ala Glu Met Ile Glu Tyr Ala Ala Lys Ala Gly Ala Asp Arg Val
    145         150         155         160
Glu Leu Tyr Thr Glu Pro Tyr Ala Thr Ala Tyr Pro Lys Asp Pro Ala
    165         170         175
Ala Ala Ala Ala Pro Phe Val Glu Ala Ala Lys Ala Ala Arg Thr Leu
    180         185         190
Gly Ile Gly Leu Asn Ala Gly His Asp Leu Ser Leu Phe Glu Ser Glu
    195         200         205
Leu Phe Leu
    210

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<210> 9674
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 9674
 Gln Ile Gly Ile Leu Lys Asn Tyr Phe Met Ala Leu Lys Arg Arg Ala
 1 5 10 15
 Lys Ile Ser Pro Asn Phe Ser Met Ala Ser Met Thr Asp Val Ile Phe
 20 25 30
 Leu Leu Leu Ile Phe Phe Met Ile Thr Ser Thr Val Val Ser Pro Asn
 35 40 45
 Ala Ile Lys Val Leu Leu Pro Gln Gly Lys Gln Gln Thr Ser Ala Lys
 50 55 60
 Pro Leu Thr Arg Val Ile Ile Asp Lys Asp Leu Asn Tyr Tyr Ala Ala
 65 70 75 80
 Phe Gly Asn Glu Lys Glu His Ala Leu Gly Val Glu Glu Leu Thr Pro
 85 90 95
 Phe Leu Gln Ser Cys Ala Asp Lys Glu Pro Glu Met Tyr Val Ala Leu
 100 105 110
 Tyr Ala Asp Glu Thr Val Pro Tyr Arg Glu Ile Val Lys Val Leu Asn
 115 120 125
 Ile Ala Asn Glu Asn His Phe Lys Met Val Leu Ala Thr Arg Pro Pro
 130 135 140
 Glu Thr Lys Lys Lys
 145

<210> 9675
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 9675
 Asn Val Leu Met Gly Ile Asp Gln Tyr Asp His Ala Ser Trp Gly Ile
 1 5 10 15
 Thr Arg Pro Ala Phe Phe Glu Ala Ala Leu Asp Tyr Arg Arg Gly Arg
 20 25 30
 Pro Arg Arg Cys Ile Met Met Gly Arg Thr Met Lys Asn Pro His Gly
 35 40 45
 Glu Gly Asn Gly Met His Gln Cys Arg Arg Thr Tyr Glu Gly Trp Ser
 50 55 60
 Ile Leu Asn Gly Pro Ser Arg Ser Val Val His His Asp Arg Ser Met
 65 70 75 80
 Arg Arg Arg Arg Arg Asp Val Ala Ser
 85

<210> 9676
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 9676
 Lys Leu Ser Ser Leu Met Asn Ala Met Leu Leu Leu Ala Gln Val Ala
 1 5 10 15
 Thr Asn Leu Ala Asp Ser Val Ala Ser Ala Asn Pro Val Leu Thr Pro
 20 25 30
 Val Ser Ala Pro Ala Glu Met Asn Met Leu Asp Met Ala Ile Lys Gly
 35 40 45

Gly Trp Ile Met Ile Val Leu Ala Val Leu Ser Val Val Cys Phe Tyr
 50 55 60
 Ile Leu Phe Glu Arg Asn Tyr Met Ile Arg Lys Ala Gly Lys Glu Asp
 65 70 75 80
 Pro Met Phe Met Glu Lys Ile Lys Asp Tyr Ile His Ser Gly Glu Ile
 85 90 95
 Lys Ser Ala Ile Asn Tyr Cys Arg Thr Ile Asn Thr Pro Ser Ala Arg
 100 105 110
 Met Ile Glu Lys Gly Ile Ser Arg Leu Gly Arg Pro Val Asn Asp Val
 115 120 125
 Gln Val Ala Ile Glu Asn Val Gly Asn Ile Glu Val Ala Lys Leu Glu
 130 135 140
 Lys Gly Leu Thr Val Met Ala Thr Ile Ser Gly Gly Ala Pro Met Leu
 145 150 155 160
 Gly Phe Leu Gly Thr Val Thr Gly Met Val Arg Ala Phe Tyr Glu Met
 165 170 175
 Ala Asn Ala Gly Ser Gly Asn Ile Asp Ile Thr Leu Leu Ser Gly Gly
 180 185 190
 Ile Tyr Glu Ala Met Ile Thr Thr Val Gly Gly Leu Ile Val Gly Ile
 195 200 205
 Ile Ala Met Phe Ala Tyr Asn Tyr Leu Val Met Leu Val Asp Arg Val
 210 215 220
 Val Asn Lys Met Glu Ser Arg Thr Met Glu Phe Met Asp Leu Leu Asn
 225 230 235 240
 Glu Pro Ala Gln Lys
 245

<210> 9677

<211> 185

<212> PRT

<213> B.fragilis

<400> 9677

Asn Pro Phe Leu Ile Met Leu Glu Glu Ile Leu Glu Phe Asn Lys Lys
 1 5 10 15
 Phe Val Glu Asn Arg Gly Tyr Glu Lys Tyr Ile Thr Asn Lys Tyr Pro
 20 25 30
 Asp Lys Lys Ile Ala Ile Leu Ser Cys Met Asp Thr Arg Leu Thr Glu
 35 40 45
 Leu Leu Pro Ala Ala Leu Gly Ile His Asn Gly Asp Val Lys Ile Ile
 50 55 60
 Lys Asn Ala Gly Ala Val Ile Ser His Pro Phe Gly Ser Val Ile Arg
 65 70 75 80
 Ser Leu Leu Val Ala Ile Ile Glu Leu Gly Val Glu Glu Val Met Val
 85 90 95
 Ile Ala His Ser Asp Cys Gly Ala Cys His Met Asn Ser Asp Glu Met
 100 105 110
 Ile Ala His Met Lys Lys Arg Gly Ile Lys Ser Glu Thr Ile Asp Met
 115 120 125
 Ile Arg Tyr Cys Gly Val Asp Phe Asn Ser Trp Leu Gly Gly Phe Asp
 130 135 140
 Asp Pro Val Lys Ser Val Arg Gly Thr Val Arg Ser Ile Glu Asn His
 145 150 155 160
 Pro Leu Ile Pro Lys Asp Val Arg Val His Gly Phe Ile Ile Asp Ser
 165 170 175
 Leu Thr Gly Glu Leu Thr Arg Val Glu
 180 185

<210> 9678

<211> 68
 <212> PRT
 <213> B.fragilis

<400> 9678

Gly Lys Ser Ser Asp Cys Phe Pro Phe Ser Phe Leu Leu Cys Ala Ile
 1 5 10 15
 Tyr Leu Cys Lys Arg Phe His Trp Lys Ile Leu Arg Asp Gly Ala Gln
 20 25 30
 Pro Ile Arg Ser Thr Phe Arg Cys Asn Gln Val Asn Val Thr Ser Gly
 35 40 45
 Lys Gly Asp Ala Val Ile Ala Ser Ala Thr Gln His Arg Asn Phe Gly
 50 55 60
 Tyr Ala Ala Pro
 65

<210> 9679
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 9679

Ser Ser Ala Ser Gly Arg Ala Ala Val Gly Tyr Glu Phe Asn Ala Glu
 1 5 10 15
 Ala Glu Pro Val Arg Phe Leu Pro Leu Pro Val Ala Gly Lys Ser His
 20 25 30
 Ala Phe Ala Phe Arg Thr Asp His Asn Lys Ser Ile Lys Phe Ile Arg
 35 40 45
 Arg Val Pro Val Met Leu Ala Ile Ile Lys Ser Gly Ser Val Tyr Gly
 50 55 60
 Gly Asp Ser Thr Pro Asp Arg Ser Leu Arg
 65 70

<210> 9680
 <211> 364
 <212> PRT
 <213> B.fragilis

<400> 9680

Trp Ile Pro Pro Ser Phe Pro Ala His Ser Asn His Asn Lys Tyr Asn
 1 5 10 15
 Lys Val Lys Met Lys Asn Thr Phe Leu Leu Thr Phe Ala Leu Ile Leu
 20 25 30
 Leu Ala Gly Ser Pro Leu Lys Ala Gln Glu Lys Glu Glu Ala Ala Thr
 35 40 45
 Leu Asn Lys Val Val Asn Thr Leu Lys Glu Arg Ile Thr Leu Ala Gly
 50 55 60
 Tyr Ala Gln Leu Gly Tyr Thr Tyr Asp Asp Ala Ala Lys Lys Met Asn
 65 70 75 80
 Thr Phe Asp Ile Lys Arg Ile Ile Phe Met Ala His Gly Lys Ile Thr
 85 90 95
 Asp Arg Trp Thr Cys Asp Phe Met Tyr Asp Phe Tyr Asn Gly Gly Met
 100 105 110
 Leu Leu Glu Val Tyr Thr Asp Tyr Arg Ile Leu Pro Gly Leu Lys Val
 115 120 125
 Arg Ile Gly Glu Phe Lys Val Pro Tyr Thr Ile Glu Asn Glu Leu Ser
 130 135 140
 Pro Thr Thr Val Glu Leu Ile Asn Cys Tyr Ser Gln Ser Val Cys Tyr
 145 150 155 160

Leu Ala Gly Val Ser Gly Ser Asp Val Ala Cys Gly Met Thr Ser Gly
 165 170 175
 Arg Asp Ile Gly Ala Met Val His Gly Gly Leu Leu Asn Asp Leu Leu
 180 185 190
 Cys Tyr Lys Leu Ala Ile Met Asn Gly Gln Gly Leu Asn Ile Lys Asp
 195 200 205
 Lys Asn Asn Gln Lys Asp Ile Ile Gly Asn Leu Met Val Asn Pro Leu
 210 215 220
 Lys Trp Leu Ser Val Gly Gly Ser Phe Ile Lys Gly Thr Gly His Ala
 225 230 235 240
 Ile Ala Asp Ser Glu Ile Thr Gly Ile Arg Ala Gly Glu Asn Tyr Thr
 245 250 255
 Lys Asn Arg Trp Ser Ile Gly Gly Val Ile Thr Thr Thr Pro Phe Ser
 260 265 270
 Leu Arg Ser Glu Tyr Leu Ala Gly Lys Asp Gly Gly Val Lys Ser Asp
 275 280 285
 Gly Phe Tyr Ala Thr Gly Cys Tyr Arg Met Leu Arg Asn Phe Asp Leu
 290 295 300
 Val Ala Ser Tyr Asp Tyr Phe Asn Ala Asn Lys Ala Val Ser Arg Lys
 305 310 315 320
 Gln Thr Asn Tyr Ile Ala Gly Leu Gln Tyr Trp Phe Tyr Pro Lys Cys
 325 330 335
 Arg Leu Gln Ala Gln Tyr Thr Phe Cys Asp Arg Asn Lys Gly Lys Asp
 340 345 350
 Ser Asn Leu Phe Gln Ala Gln Val Gln Val Arg Phe
 355 360

<210> 9681

<211> 474

<212> PRT

<213> B.fragilis

<400> 9681

Gln Ala Gln Pro Ser Phe Ile Asn His Thr Ile Ser Ala Tyr Asn Ser
 1 5 10 15
 Val Phe Thr Phe Gly Tyr Arg Gln Phe Gly Arg Asn Arg Thr Gly Ile
 20 25 30
 Lys Cys His Asp Asn Val Val Pro Ser Ile Ser Val Ser Ala Val Phe
 35 40 45
 Gln Ala Glu Ser His Gln Ile Thr Asn Ile Tyr Arg Glu Glu Phe Gln
 50 55 60
 Val Leu Thr Tyr His Leu Gly Ile Ser His Thr Glu Ser Gly Met Gly
 65 70 75 80
 Phe Thr Asn Thr Asp Gln Thr Leu Ile Ile Gly Glu His Ile Phe Val
 85 90 95
 Ser Cys Leu Ser Val Pro Ile Asn Gly Ile Asn Arg Ile Gly Thr Leu
 100 105 110
 Lys Thr Ile Met His Pro Phe Leu Val Thr His His Leu Phe Ser Gly
 115 120 125
 Ile Asp Glu Arg Asn Thr Leu Arg Ser Gln His Cys Arg Leu Arg Gln
 130 135 140
 Phe Val Lys Ser Tyr Glu Leu Phe Gly Cys Asp Ala Gly Asp Thr Arg
 145 150 155 160
 Leu Gln Ala Ile Tyr Gln Ala His Ile Ile Val Ala Gly Tyr Val Thr
 165 170 175
 Asp His Leu Ser Arg Leu Gly Ser Pro Gly Ser Phe Thr Val Ile His
 180 185 190
 Arg Ile Ile Val Asp Leu Arg Val Thr Asp Ser Ser Tyr Asn Thr Lys
 195 200 205


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Leu Asn Ala Leu Phe Phe Pro Gly Asp Pro Gly Lys Glu Arg Ser Leu
  210                215                220
Met Ile Ile Ile Lys Arg Thr Thr Gln Arg Ile Thr His Phe Ile Gly
 225                230                235                240
Lys Gly Gly Asn Thr Arg His Phe Thr Ser Ile Asp Leu His Cys Gln
                245                250                255
Arg Ile Thr Arg Ile Leu Arg Cys Phe Arg Cys Pro Thr Phe Thr Ile
                260                265                270
Asn Asn Asp Arg Arg Ile Tyr Ser Thr Asp Arg Leu Thr Asp Phe Ile
                275                280                285
His Arg Leu Asp Val Val Asn Ala His Gln Val Glu Ala Glu Thr Ile
                290                295                300
Asp Met Val Phe Leu Asp Pro Val Lys His Gly Phe Asn His Ile Phe
 305                310                315                320
Thr His His Arg Pro Val Ala Cys Arg Leu Val Thr Thr Ser Arg Thr
                325                330                335
Ile Ser Gln Arg Thr Ile Arg Leu Leu Ala Ile Lys Ile Ser Arg Tyr
                340                345                350
Arg Thr Phe Glu Val Thr Ala Ile Gly Val Val Cys Met Ile Val Tyr
                355                360                365
His Ile Glu His Tyr Pro Tyr Thr Gly Phe Val Gln Cys Leu Tyr His
                370                375                380
Leu Leu Lys Leu Ala Asp Ala Asp Ser Arg Ile Val Arg Ile Gly Ser
 385                390                395                400
Ile Arg Thr Ile Gly Tyr Ile Val Ile Leu Arg Ile Ile Ser Pro Val
                405                410                415
Val Phe Ile Phe Ile Gln Leu Gly Phe Val Tyr Arg Ser Ile Ile Ile
                420                425                430
Arg Arg Lys Gln Met Asp Val Cys Tyr Ser Gln Leu Asp Gln Met Ile
                435                440                445
Asn Ser Gly Gln Gln Phe Gly Arg Val His Arg Thr Met Phe Cys Gln
                450                455                460
Cys Gln Lys Phe Ser Leu Met Leu Asn Pro
 465                470

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<210> 9682

<211> 461

<212> PRT

<213> B.fragilis

<400> 9682

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Thr Met Gln Phe Leu Ser Phe Ser Phe Leu Ala Leu Phe Thr Leu Cys
  1                5                10                15
Phe Phe Leu Tyr Tyr Ala Val Lys Gly Arg Ala Arg Asn Leu Ile Leu
 20                25                30
Leu Val Thr Ser Cys Ile Phe Ile Gly Trp Tyr Tyr Leu Pro Phe Leu
 35                40                45
Leu Thr Ala Val Val Val Ala Leu Phe Thr Phe Phe Trp Ala Gln Trp
 50                55                60
Met Glu Ser Arg Ala Lys Ala Gly Lys Lys Thr Lys Pro Val Tyr Ile
 65                70                75                80
Ala Gly Ile Ile Ala Leu Ile Gly Gly Trp Leu Leu Leu His Gly Thr
                85                90                95
Val Ile Asp Asp Ile Ile Phe Pro Leu Gly Met Ser Phe Tyr Thr Phe
 100                105                110
Gln Ala Ile Ser Tyr Leu Thr Asp Val Tyr Trp Gln Glu Gln Arg Ser
 115                120                125
Glu Arg Asn Trp Val Asp Phe Leu Ile Tyr Met Leu Phe Phe Met Lys
 130                135                140

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Phe Leu Ser Gly Pro Ile Glu Arg Gly Gly Asp Leu Leu Pro Gln Leu
 145 150 155 160
 Lys Asp Pro Arg Pro Phe Ile Tyr Ser Asn Ala Val Thr Gly Leu Lys
 165 170 175
 Tyr Ile Leu Leu Gly Leu Ile Lys Lys Leu Leu Ile Ala Asn Gln Ile
 180 185 190
 Ser Pro Gln Thr Asp Val Met Phe His Ser Ile His Asp Leu Ser Gly
 195 200 205
 Val Gln Leu Leu Met Thr Cys Leu Leu Tyr Pro Ile Glu Leu Tyr Ala
 210 215 220
 Asp Phe Ser Gly Tyr Thr Asp Ile Ala Ile Gly Gly Ala Tyr Met Phe
 225 230 235 240
 Gly Ile Lys Leu Ser Pro Asn Phe Asn Arg Pro Phe Ala Ala Arg Ser
 245 250 255
 Thr Ala Asp Phe Trp Arg Arg Trp His Met Ser Leu Ser Phe Trp Val
 260 265 270
 Arg Asp Tyr Leu Tyr Val Pro Leu Thr Ala Gly Thr Arg Asn Trp Gly
 275 280 285
 Gln Trp Gly Ile Tyr Phe Ser Leu Leu Ile Thr Phe Leu Ala Leu Gly
 290 295 300
 Leu Trp His Gly Ala Gly Leu Thr Phe Ala Ile Tyr Gly Leu Ile Gln
 305 310 315 320
 Gly Val Leu Ile Cys Trp Glu Met Lys Thr Ala Ala Phe Arg Tyr Asn
 325 330 335
 Leu Pro Gln Tyr Ile Gly Lys Tyr Ala Ala Asp Ser Leu Leu Ile Val
 340 345 350
 Arg Thr Tyr Leu Leu Phe Ala Leu Ser Leu Ile Phe Phe Arg Val Gln
 355 360 365
 Ser Leu Ser Asp Ala Trp Tyr Phe Leu Arg Asn Ile Ser Phe Glu Val
 370 375 380
 His Ser Ser Trp Lys Glu Met Asn Ile Gly Ile Arg Asp His Asn Cys
 385 390 395 400
 Ile Val Ala Gly Ser Ala Leu Leu Leu Val Leu Ile Tyr Glu Tyr Tyr
 405 410 415
 Ala Ser Lys Tyr Asn Leu Met Glu Thr Leu Glu Arg Gln Pro Ala Trp
 420 425 430
 Leu Arg Trp Ser Val Tyr Tyr Leu Leu Val Phe Ala Leu Leu Met Leu
 435 440 445
 Gly Lys Phe Asp Thr Glu Thr Phe Ile Tyr Leu Gln Phe
 450 455 460

<210> 9683

<211> 68

<212> PRT

<213> B.fragilis

<400> 9683

Leu Thr Thr Thr Thr Lys Asn Lys Glu Arg Asn Asn Asn Gly Val Ser
 1 5 10 15
 Thr Asp Met Ala Phe Ser Phe Val Leu Ser Phe Leu Leu Gly Tyr Ala
 20 25 30
 Arg Thr Thr Phe Arg Asn Arg Arg Glu Asn Gln Trp Ile Cys Ser Arg
 35 40 45
 Arg Leu Tyr Ser Leu Pro Arg Thr Leu Glu Arg Asn Gly Ser Asn Asp
 50 55 60
 Leu Phe His Ile
 65

<210> 9684

<211> 382
 <212> PRT
 <213> B.fragilis

<400> 9684

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Leu Val Ser Thr Ser Ser Val Trp Gln Thr Val Tyr Leu Met Phe Leu
1          5          10          15
Gln Ala Val Glu His Cys Ser Lys Gln Ser Lys Glu Lys Phe Phe Arg
          20          25          30
Val Leu Pro Leu Ser Arg Asn Lys Thr Glu Val Asn His Tyr Lys Thr
          35          40          45
Glu Lys Ala Thr Pro Leu Gly Val Ala Phe Phe Lys Ser Arg Lys Trp
          50          55          60
Gly Glu Ser Leu Leu Phe Ser Ile Leu Phe Leu Phe Phe Leu Ser Ala
65          70          75          80
Cys Thr Gly Lys Lys Glu Lys His Ser Ala Leu Pro Glu Leu Gln Thr
          85          90          95
Leu Thr Phe Gly Leu Met Pro Ser Phe Asp Gly Leu Pro Ser Leu Val
          100          105          110
Ala Val Arg Gln Gly Ile Tyr Asp Ser Leu Asp Ile Lys Ile Asp Phe
          115          120          125
Ile Thr Tyr Ala Ser Ala Thr Asp Arg Asp Ala Ala Phe Leu Ser Gly
          130          135          140
Lys Leu Asp Gly Met Leu Thr Asp Tyr Pro Gly Ala Thr Leu Leu Gln
145          150          155          160
Ala Lys Gly Ser Arg Leu Arg Leu Val Met Glu Thr Asp Gly Ser Leu
          165          170          175
Ser Met Ile Ala Ser Lys Lys Ser Asn Val Arg Asn Pro Asp Asp Leu
          180          185          190
Lys Gly Lys Asn Ile Ser Val Ser Ala Asn Thr Phe Val Glu Tyr Ala
          195          200          205
Thr Asp Glu Val Met Lys Arg Ala Cys Leu His Pro Gly Glu Val Asn
          210          215          220
Lys Pro Glu Ile Asn Asn Ile Pro Leu Arg Leu Met Met Leu Glu Asp
225          230          235          240
Gly Gln Ile Ser Ala Ser Phe Leu Pro Gly Pro Ala Ser Ala Ile Ala
          245          250          255
Leu Asn Asp Gly His Thr Ala Leu Leu Asn Thr Arg Gln Met Gly Leu
          260          265          270
Arg Cys Thr Gly Ile Val Phe Ser Glu Lys Ala Ile Thr Glu Lys Asp
          275          280          285
Glu Glu Ile Arg Arg Phe Ile Thr Gly Tyr Asn Leu Gly Val Lys Tyr
          290          295          300
Leu Gln Thr Arg Pro Gln Asn Glu Trp Thr Glu Ile Leu Val Lys Glu
305          310          315          320
Phe Gly Leu Gln Glu Lys Ala Ala Met Gln Ile Asp Leu Pro Asp Tyr
          325          330          335
Arg Pro Ala Thr Arg Pro Ser Tyr His Asp Ile Glu Lys Ile Ile Ala
          340          345          350
Trp Leu Lys Ser Lys Gly Ala Ile Pro Asp Tyr Tyr Pro Gly Glu Asn
          355          360          365
Leu Val Asp Thr Thr Phe Ile Pro Gly Thr Leu Lys Pro Gln
          370          375          380

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<210> 9685
 <211> 455
 <212> PRT
 <213> B.fragilis

<400> 9685

Phe	Leu	Gln	Thr	Leu	Asn	Cys	Ile	Asp	Met	Ala	Asp	Trp	Lys	Ser	Val
1				5				10					15		
Lys	Ser	Ile	Ser	Asp	Lys	Tyr	Gly	Ile	Ser	Val	Glu	Arg	Val	Ile	Ala
			20					25					30		
Trp	Val	Arg	Glu	Ser	Gln	Ile	Thr	Thr	Ser	Val	Val	Gly	Ser	Val	Val
		35					40					45			
Leu	Ile	Asp	Asp	Gly	Ser	Val	Cys	Glu	Leu	Val	Glu	Lys	Glu	Lys	Arg
	50					55					60				
Leu	Ala	His	Leu	Lys	Thr	Asn	Tyr	Glu	Gln	Leu	Cys	Ala	Lys	Phe	Glu
65					70					75					80
Gln	Arg	Ile	Glu	Ala	Glu	Leu	Arg	Ala	Asp	Glu	Asp	Ala	Gly	Leu	Lys
				85					90					95	
Met	Arg	Leu	Leu	Asp	Asp	Phe	Leu	Pro	Val	Leu	His	Arg	Leu	Leu	Cys
			100					105					110		
Val	Met	Ile	Asp	Lys	Leu	Asn	Thr	Glu	Asp	Arg	Lys	Leu	Phe	Asn	Ser
		115					120					125			
Ala	Phe	Thr	Ala	Ala	Pro	Leu	Tyr	Arg	Ile	Ala	Arg	Glu	Met	Gly	Phe
	130					135					140				
Glu	Ser	Val	Lys	Asp	Tyr	Leu	Ile	Ala	Tyr	Arg	Lys	Val	Thr	Arg	Arg
145					150					155					160
Leu	Pro	Glu	Ser	Ser	Asp	Glu	Leu	Ile	Lys	Arg	Leu	Gln	Thr	Asp	Leu
				165					170					175	
Glu	Arg	Ser	Arg	Asp	Ser	Phe	Lys	Glu	Met	Glu	His	Thr	Leu	Leu	Arg
			180					185					190		
Ala	Arg	Gln	Asn	His	Glu	Asp	Ala	Asn	Arg	Met	Cys	Ser	Asp	Leu	Arg
		195					200					205			
Asp	Lys	Glu	Ile	Tyr	Tyr	Ile	Glu	Arg	Cys	Glu	Arg	Leu	Lys	Glu	Lys
	210					215					220				
Asn	Arg	Glu	Asn	Glu	Lys	Arg	Val	Glu	Arg	Leu	Lys	Lys	Arg	Leu	Leu
225					230					235					240
Lys	Trp	Glu	Lys	Cys	Pro	Asn	Val	Gly	Glu	Ala	Gly	Asn	Thr	Gly	Glu
				245					250					255	
Asp	Glu	Ser	Leu	Gln	Glu	Leu	Ser	Asp	Glu	Val	Gly	Asn	Leu	His	Ile
			260					265					270		
Arg	Glu	Met	Glu	Leu	Arg	Ala	Gln	Arg	Arg	Glu	Leu	Ile	Thr	Arg	Val
		275					280					285			
Ala	Arg	Leu	Glu	Arg	Glu	Met	Tyr	Lys	Tyr	Asn	Ser	Thr	Glu	Asn	Ser
		290				295					300				
Phe	Lys	Ser	Arg	Leu	Gly	Glu	Lys	Gly	Ala	Trp	Arg	Lys	Ile	Glu	Ser
305					310					315					320
Glu	Phe	Glu	Arg	Cys	Ala	Arg	Thr	Tyr	Phe	Gly	Arg	Asp	Val	Glu	Val
				325					330					335	
Val	Ser	Arg	Lys	Glu	Ala	Gln	Glu	Ile	Arg	Gln	Leu	Gln	Ile	Lys	Ala
			340					345					350		
Leu	Val	Asp	Glu	Asn	Tyr	Ala	Gln	Ser	Gly	Ala	Trp	Lys	Glu	Met	Met
		355					360						365		
Ala	Ala	Thr	Glu	Ala	Lys	Phe	Ala	Met	Ser	Gly	Glu	Thr	Met	Pro	Asp
		370				375					380				
Ala	Gly	Lys	Leu	Glu	Asn	Glu	Glu	Val	Glu	Thr	Gly	Thr	Glu	Pro	Ala
385					390					395					400
Ala	Lys	Asp	Glu	Val	Glu	Met	Ile	Ile	Glu	Gly	Ile	Ala	Ser	Leu	Asp
				405					410					415	
Glu	Met	Gly	Ala	Ser	Leu	Asp	Arg	Tyr	Lys	Lys	Glu	Thr	Ser	Glu	Met
			420					425					430		
Ile	Glu	Lys	Tyr	Lys	Ala	Asn	Glu	Glu	Lys	Thr	Glu	Gly	Phe	Trp	Asn
		435					440					445			
Arg	Leu	Arg	Ser	Met	Phe	Cys									
	450					455									

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<210> 9686
 <211> 540
 <212> PRT
 <213> B.fragilis

<400> 9686

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Gly	Met	Met	Leu	Gly	Val	Ala	Ser	Cys	Val	Asn	Asp	Leu	Asn	Thr	Val
			20					25					30		
Pro	Leu	Asp	Lys	Asp	Glu	Leu	Val	Ser	Asp	Val	Val	Phe	Gly	Asn	Glu
		35					40					45			
Pro	Leu	Ala	Tyr	Glu	Gln	Ser	Leu	Ala	Lys	Ile	Tyr	Ala	Gly	Met	Ala
	50					55					60				
Ile	Gly	Gly	Asn	Ser	Gly	Gly	Asp	Ser	Asp	Gln	Asp	Val	Val	Gly	Ile
65					70					75					80
Asp	Gly	Gly	Ser	Gln	Ala	Ser	Phe	Leu	Arg	Val	Leu	Trp	Asn	Met	Gln
			85						90					95	
Asp	Leu	Pro	Ser	Asp	Ile	Ala	His	Cys	Ala	Trp	Asn	Asp	Pro	Gly	Ile
			100					105					110		
Pro	Glu	Phe	Asn	His	Ile	Ser	Trp	Gly	Ala	Ser	Ser	Pro	Trp	Ile	Lys
		115					120					125			
Gly	Ser	Tyr	Tyr	Arg	Leu	Phe	Tyr	Gln	Ile	Asn	Val	Ala	Asn	Ala	Tyr
	130					135					140				
Leu	Arg	Glu	Thr	Thr	Glu	Asp	Lys	Leu	Asp	Ala	Arg	Gly	Cys	Asp	Ala
145					150					155					160
Ser	Leu	Lys	Ala	Ser	Ile	Lys	Thr	Trp	Arg	Ala	Glu	Ala	Arg	Phe	Leu
			165						170					175	
Arg	Ala	Leu	Ser	Tyr	Glu	Tyr	Ala	Leu	Asp	Leu	Tyr	Arg	Asn	Val	Pro
			180						185				190		
Phe	Val	Asp	Glu	Asn	Ser	Pro	Ile	Gly	Ser	Ile	Pro	Pro	Lys	Gln	Ile
	195						200					205			
Met	Ala	Ala	Asp	Leu	Phe	Asn	Trp	Ile	Glu	Lys	Glu	Leu	Thr	Glu	Cys
	210					215					220				
Val	Glu	Asp	Met	Leu	Glu	Pro	Thr	Val	Gly	Tyr	Ser	Gln	Asp	Tyr	Gly
225					230					235					240
His	Ala	Asn	Lys	Ala	Ala	Ala	Trp	Ala	Leu	Leu	Ser	Arg	Leu	Tyr	Leu
			245						250					255	
Asn	Ala	Glu	Thr	Tyr	Val	Gly	Gln	Asn	Lys	Tyr	Thr	Glu	Cys	Ile	Thr
			260					265					270		
Tyr	Ala	Lys	Lys	Val	Ile	Glu	Thr	Gly	Tyr	Gln	Leu	Glu	Pro	Val	Tyr
	275						280					285			
Val	Asp	Met	Phe	Lys	Ala	Asp	Asn	His	Leu	Ser	Asn	Glu	Met	Ile	Phe
	290					295					300				
Pro	Val	Arg	Tyr	Glu	Gly	Asp	Gln	Thr	Met	Thr	Trp	Gly	Gly	Met	Thr
305					310					315					320
Ala	Phe	Leu	Cys	Trp	Gly	Ala	Thr	Ala	Thr	Gln	Glu	Glu	Val	Asn	Ala
			325						330					335	
Lys	Gly	Ala	Trp	Gln	Gly	Val	Arg	Ala	Lys	Ser	Ser	Leu	Tyr	Asn	Leu
		340						345					350		
Phe	Leu	Lys	Glu	Ser	Gly	Ser	Asp	Ala	Asp	Thr	Arg	Lys	Ala	Met	Leu
	355						360					365			
Arg	Thr	Asp	Leu	Thr	Thr	Ser	Leu	Glu	Ile	Ile	Asp	Glu	Asn	Thr	Phe
	370					375					380				
Gln	Asn	Ile	Gly	Ile	Pro	Val	Thr	Lys	Tyr	Phe	Asn	Val	Asn	Lys	Asp
385					390					395					400
Gly	Thr	Leu	Pro	Pro	Ser	Lys	Glu	Ala	Tyr	Val	Asp	Phe	Pro	Leu	Phe
				405					410					415	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

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Arg Leu Gly Glu Ile Tyr Leu Thr Tyr Ala Glu Ala Val Leu Arg Gly
      420      425      430
Gly Gln Gly Gly Asp Arg Ala Thr Ala Leu Arg Tyr Val Asn Asp Leu
      435      440      445
Arg Lys Arg Ala Tyr Ser Asp Lys Thr Leu Ala Pro Ile Ser Asp Ser
      450      455      460
Asp Leu Thr Leu Asn Phe Ile Ile Asp Glu Arg Gly Arg Glu Phe Phe
      465      470      475      480
Phe Glu Gly Gln Arg Arg Thr Asp Leu Val Arg Phe Gly Leu Phe Thr
      485      490      495
Thr Ala Gly Tyr Val Trp Pro Trp Lys Gly Gly Thr Ala Lys Gly Lys
      500      505      510
Ala Val Glu Asn Phe Tyr Asn Val Phe Pro Ile Pro Ser Asp Asp Ile
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Gly Ser Asn Thr Asn Leu Lys Gln Asn Glu Gly Tyr
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<210> 9687

<211> 133

<212> PRT

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<400> 9687

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Ser Glu Ile Ile Ala Met Phe Ala Glu Ile Ile Asn Leu Lys Ile Lys
      20      25      30
Asn Met Leu Ile Tyr Asn Thr Thr Phe Gln Val Asp Asp Glu Val His
      35      40      45
Asp Asn Phe Leu Ile Trp Ile Lys Glu Ser Tyr Ile Pro Glu Val Glu
      50      55      60
Lys His Gly Ala Leu Arg Ala Pro Arg Ile Cys Arg Val Leu Ser His
      65      70      75      80
Arg Asp Glu Gly Thr Ser Tyr Ser Leu Gln Trp Glu Val Asp Asp Ser
      85      90      95
Gly Val Leu His Arg Trp His Gln Asp Gln Gly Ala Arg Leu Asn Gln
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Met Glu Val Leu Glu
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<210> 9688

<211> 150

<212> PRT

<213> B.fragilis

<400> 9688

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      20      25      30
Leu Lys Arg His Asn Val Asp Met Thr Phe Glu Met Leu Gln Val Met
      35      40      45
Asn Cys Leu Trp Asn Lys Gln Gly Ile Ser Gln Gln Ser Leu Ala Glu
      50      55      60
Lys Thr Ala Lys Asp Lys Ala Cys Leu Thr Asn Leu Ile Asn Asn Leu
      65      70      75      80
Glu Lys Lys Asn Trp Val Ile Arg Lys Glu Gly Pro Ser Asp Arg Arg

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Arg	Leu	Lys	Phe 20	Arg	Asn	Ile	Phe	Leu	Asn 25	Thr	Val	Cys	Ile 30	Leu	Leu
Ala	Leu	Ala	Gly 35	Ile	Ser	Trp	Thr 40	Val	Asn	Tyr	Phe	Trp 45	Lys	Tyr	Ala
Arg	Tyr 50	Glu	Ile	Thr	Asn 55	Asp	Ala	Val	Val	Asp 60	Gln	Tyr	Ile	Ala	Pro
Leu 65	Asn	Ile	Arg	Ile	Pro 70	Gly	Tyr	Ile	Lys	Glu 75	Val	Arg	Phe	Thr	Glu
His	Gln	Tyr	Val	His 85	Ala	Gly	Asp	Thr	Leu 90	Leu	Ile	Leu	Asp 95	Asp	Arg
Glu	Tyr	Arg	Ile 100	Arg	Leu	Lys	Asp	Ala 105	Glu	Ala	Ala	Leu	Met 110	Asp	Ala
Leu	Gly	Ser 115	Lys	Glu	Val	Leu	Asn 120	Ser	Gly	Ile	Arg	Thr 125	Ser	Gly	Val
Asn 130	Val	Ala	Val	Gln	Glu	Ala 135	Asn	Ile	Ala	Glu	Thr 140	Leu	Ala	His	Leu
Ser 145	Gln	Gln	Glu	Ala 150	Glu	Leu	Asn	Arg	Tyr	Thr 155	Arg	Leu	Leu	Lys	Lys
Gln	Ala	Val	Ser 165	Gln	Gln	Asp	Tyr	Glu	Leu 170	Ala	Lys	Ala	Asn	Phe	Glu
Ala	Thr	Arg	Ala 180	Arg	Tyr	Asn	Ala 185	Leu	Leu	Arg	Gln	Lys	Glu 190	Ala	Ala
Gln	Ser	Gln	Tyr 195	Ser	Glu	Thr	Ser 200	Lys	Arg	Ser	Thr	Gly 205	Ala	Glu	Ala
Asn 210	Ile	Leu	Arg	Lys	Glu	Ala 215	Asp	Leu	Glu	Met	Ala 220	Arg	Leu	Asn	Leu
Ser 225	Tyr	Thr	Val	Val 230	Thr	Ala	Pro	Tyr	Asp	Gly 235	Tyr	Thr	Gly	Arg	Arg
Thr	Leu	Glu	Pro 245	Gly	Gln	Phe	Val	Gln	Gly 250	Gly	Gln	Thr	Leu	Ser	Tyr
Leu	Val	Arg	Gly 260	Asn	Asp	Lys	Trp	Val 265	Thr	Ala	Asn	Tyr	Lys 270	Glu	Thr
Gln	Ile	Ala	His 275	Ile	Tyr	Ile	Gly 280	Gln	Lys	Val	Arg	Ile 285	Lys	Val	Asp
Ala	Phe 290	Ser	Gly	Arg	Thr	Phe	His 295	Gly	Thr	Val	Thr 300	Ala	Ile	Ser	Glu
Ala 305	Thr	Gly	Ser	Lys 310	Tyr	Ser	Leu	Val	Pro	Thr 315	Asp	Asn	Ser	Ala	Gly
Asn	Phe	Val	Lys 325	Val	Gln	Gln	Arg	Ile	Pro 330	Val	Arg	Ile	Asp	Leu	Asn
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<211> 431
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35 40 45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
50 55 60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65 70 75 80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
85 90 95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
100 105 110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
115 120 125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
130 135 140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145 150 155 160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
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Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
180 185 190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
195 200 205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
210 215 220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225 230 235 240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
245 250 255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
260 265 270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
275 280 285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
290 295 300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305 310 315 320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
325 330 335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
340 345 350
Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn
355 360 365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
370 375 380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val

385 390 395 400
 Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
 405 410 415
 Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
 420 425 430

<210> 9691
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 9691
 Ser Tyr Leu Leu Thr Phe Thr Arg Gly Pro Tyr Gly Ser Met Lys Val
 1 5 10 15
 Ser Pro Thr Phe Ser Pro Thr Leu Lys Thr Phe His Gln Arg Leu Leu
 20 25 30
 Ala Asp Phe Gly Asp Ala Ile Thr Thr Asp Arg Thr Gly Met Gln Phe
 35 40 45
 Met Ile Gly Thr Thr Thr Val Thr Arg Tyr Asp Lys Lys Glu Ile His
 50 55 60

<210> 9692
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9692
 Gly Phe Pro Tyr Lys Ser Ile Tyr Cys Phe Trp Lys Ala Val Phe Tyr
 1 5 10 15
 Phe Asp Ala Ser Val Gly Glu Gly Phe Gly Arg Ile Ile Ser Met Ile
 20 25 30
 Ser Phe Ser Met Pro Glu Trp Cys Met Ala Tyr Pro Phe Gln Tyr Phe
 35 40 45
 Ser Ile Arg Pro Leu Gly Ala Ile Asn Ile Lys Gln Gly Met Asp Phe
 50 55 60
 Ile Pro
 65

<210> 9693
 <211> 190
 <212> PRT
 <213> B.fragilis

<400> 9693
 Leu Ala Val Tyr Ser Asn Asn Ala Lys Tyr Arg Tyr Met Glu Asn Phe
 1 5 10 15
 Ser Glu Leu Ile Lys Asn Arg Arg Ser Met Arg Lys Phe Thr Gly Glu
 20 25 30
 Glu Leu Ser Gln Glu Asp Val Val Ala Leu Leu Lys Ala Ala Leu Met
 35 40 45
 Ala Pro Thr Ser Lys Arg Ser Asn Ser Trp Gln Phe Ile Ala Val Asp
 50 55 60
 Asp Lys Lys Leu Leu Ser Glu Leu Ser His Cys Lys Glu Gln Ala Ser
 65 70 75 80
 Ala Phe Ile Ala Asp Ala Ala Leu Ala Ile Val Val Thr Ala Asp Pro
 85 90 95
 Leu Ala Ser Asp Val Trp Ile Glu Asp Ala Ser Ile Ala Ser Ile Met
 100 105 110
 Ile Gln Leu Gln Ala Glu Asp Leu Gly Leu Gly Ser Cys Trp Val Gln

115	120	125
Val Arg Glu Arg Tyr Thr	Ala Thr Gly Ile Pro Ser Asp Glu Phe Val	
130	135	140
His Gly Val Leu Asp Ile	Pro Leu Gln Leu Gln Val Leu Ser Val Ile	
145	150	155
Ala Ile Gly His Lys Gly Met Glu Arg Lys	Pro Phe Asn Glu Asp His	160
	165	170
Leu Gln Trp Glu Lys Ile His Ile Asn Lys Phe Gly Gly Lys		175
180	185	190

<210> 9694

<211> 954

<212> PRT

<213> B.fragilis

<400> 9694

Ser Met Lys Tyr Leu Thr Phe Pro Phe Leu Phe Leu Leu Leu Pro Leu	
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Ile Gly Phe Gly Cys Ser Ser Glu Glu Lys Glu Thr Asp Ser Leu Ile	10
	20
Leu Ser Ser Asp Ser Glu Ile Phe Phe Glu Gln Gly Ile Asp Phe Ala	25
	30
Ala Thr Ser Gly Thr Arg Asn Leu Ser Phe Ser Ser Gly Arg Pro Trp	35
	40
Arg Ile Ser Leu Thr Thr Asp Thr Asp Thr Arg Arg Ala Ala Asp Trp	45
	50
Cys Thr Val Ser Pro Phe Ser Gly Thr Ala Gly Asp Ala Ser Val Thr	55
	60
Ile Ser Ile Gln Glu Asn Ala Asp Tyr Asp Ser Arg Ser Val Lys Leu	65
	70
Thr Leu Val Ala Gly Gly Ile Glu Lys Ser Phe Thr Val Ser Gln Lys	75
	80
Gln Lys Asp Ala Leu Thr Leu Thr Ala Ser Arg Phe Glu Val Gly Lys	85
	90
Glu Gly Gly Thr Val Gln Val Glu Val Lys Ala Asn Ile Thr Phe Glu	95
	100
Val Glu Ile Pro Glu Val Asp Arg Ser Trp Ile Ser Gln Ala Asn Thr	105
	110
Arg Gly Leu Val Val Thr Asn Leu Ala Phe Thr Val Ala Pro Asn Glu	115
	120
Gly Val Ala Gly Arg Glu Gly Glu Ile Val Ile Arg Ser Gly Ser Leu	125
	130
Ser Glu Lys Ile Arg Ile Thr Gln Glu Gly Arg Cys Asp Asp Gly Leu	135
	140
Ser Phe Arg Pro Glu Thr Pro Asp Ala Asp Arg Gln Leu Thr Leu Tyr	145
	150
Phe Lys Ala Thr Lys Thr Ser Pro Leu Tyr Gly Tyr Ala Gly Asp Val	155
	160
Tyr Val His Thr Gly Val Val Ser Glu Gly Thr Trp Met Tyr Val Pro	165
	170
Ala Glu Trp Asn Thr Asn Val Asp Lys Cys Lys Met Val Arg Val Ala	175
	180
Asp Asn Ile Trp Ser Ile Thr Leu Ala Pro Ser Ile Arg Gln Trp Phe	185
	190
Gly Ser Asn Glu Thr Pro Val Arg Gln Leu Gly Val Val Ile Arg Ser	195
	200
Ala Asp Gly Ser Lys Lys Gly Met Asp Gly Asp Ser Phe Val Ser Val	205
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Thr Asp His Leu Tyr Lys Pro Phe Glu Pro Ala Ala Val Arg Tyr Ala	215
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			340					345				350			
Ser	Met	Pro	Gly	Gly	Leu	Gln	Glu	Gly	Ile	Asn	Leu	Ile	Asp	Ala	Ser
		355					360					365			
Thr	Val	Thr	Leu	Val	Leu	Tyr	Asp	Lys	Asp	Lys	Lys	Gly	Gly	His	Lys
		370				375					380				
Asp	Phe	Ala	His	Val	Val	Gly	Asp	Phe	Asn	Asp	Trp	Lys	Leu	Ser	Asn
385					390					395					400
Glu	Ser	Asn	Ser	Gln	Met	Asn	Arg	Asp	Asp	Ala	Ala	Gly	Cys	Trp	Trp
			405					410					415		
Ile	Thr	Leu	Thr	Gly	Leu	Gln	Pro	Thr	Arg	Glu	Tyr	Ala	Phe	Gln	Tyr
		420						425					430		
Tyr	Val	Gly	Thr	Arg	Ala	Gly	Glu	Ile	Leu	Arg	Leu	Ala	Asp	Ala	Tyr
		435				440						445			
Ser	Arg	Lys	Ile	Leu	Asp	Pro	Asp	Asn	Asp	Lys	Tyr	Ile	Pro	Ser	Ser
		450			455						460				
Thr	Tyr	Pro	Asp	Ala	Lys	Glu	Tyr	Pro	Lys	Gly	Ala	Val	Gly	Ile	Ala
465					470					475					480
Ser	Val	Phe	Lys	Ile	Gln	Arg	Asp	Ser	Tyr	Glu	Trp	Lys	Val	Lys	Asn
			485					490					495		
Phe	Arg	Ile	Leu	Asp	Lys	Asn	Asn	Leu	Met	Ile	Tyr	Glu	Leu	Leu	Leu
		500						505					510		
Arg	Asp	Phe	Thr	Ala	Thr	Gly	Asp	Leu	Asn	Gly	Ala	Met	Glu	Lys	Ile
		515				520						525			
Gly	Tyr	Leu	Lys	Ser	Leu	Gly	Phe	Asn	Ala	Val	Glu	Leu	Met	Pro	Val
		530				535					540				
Gln	Glu	Phe	Asp	Gly	Asn	Asp	Ser	Trp	Gly	Tyr	Asn	Pro	Cys	Phe	Tyr
545					550					555					560
Phe	Ala	Leu	Asp	Lys	Ala	Tyr	Gly	Thr	Asp	His	Met	Tyr	Lys	Ala	Phe
			565					570					575		
Ile	Asp	Lys	Cys	His	Glu	Ala	Gly	Met	Ala	Val	Leu	Phe	Asp	Val	Val
			580					585					590		
Tyr	Asn	His	Ala	Ser	Gly	Ser	His	Pro	Phe	Ala	Arg	Leu	Tyr	Trp	Asp
		595					600						605		
Thr	Lys	Asn	Asn	Arg	Thr	Ala	Ala	Asp	Asn	Pro	Trp	Phe	Asn	Val	Lys
		610				615						620			
Glu	Pro	His	Pro	Tyr	Gly	Val	Phe	His	Asp	Phe	Asn	His	Asp	Ser	Pro
625					630					635					640
Leu	Val	Arg	Ala	Phe	Val	Lys	Arg	Asn	Leu	Lys	Phe	Leu	Leu	Glu	Glu
			645					650					655		
Tyr	Arg	Ile	Asp	Gly	Phe	Arg	Phe	Asp	Met	Thr	Lys	Gly	Phe	Thr	Gln
			660					665					670		
Asn	Ser	Ser	Thr	Glu	Ala	Thr	Ala	Gly	Ser	Tyr	Asp	Ala	Ser	Arg	Ile
		675				680						685			
Ala	Ile	Leu	Lys	Asp	Tyr	Asn	Glu	Thr	Val	Arg	Glu	Val	Asn	Pro	Glu
		690				695						700			
Ala	Val	Val	Ile	Leu	Glu	His	Phe	Cys	Asp	Glu	Lys	Glu	Glu	Ser	Glu
705					710					715					720
Leu	Ala	Glu	Glu	Gly	Met	Gln	Leu	Trp	Arg	Asn	Leu	Asn	Asn	Ala	Tyr
			725					730					735		
Cys	Gln	Ser	Ala	Met	Gly	Tyr	Pro	Ser	Asn	Ser	Asp	Phe	Thr	Pro	Leu
			740					745					750		
Val	Thr	Phe	Gly	Thr	Thr	Met	Pro	Tyr	Gly	Gly	Trp	Val	Gly	Phe	Met
		755					760						765		
Glu	Ser	His	Asp	Glu	Glu	Arg	Thr	Ala	Phe	Lys	Gln	Ile	Ala	Tyr	Gly
		770				775						780			
Glu	Gly	Pro	Leu	Lys	Ser	Asp	Ile	Asn	Val	Arg	Met	Lys	Gln	Leu	Ala
785					790					795					800
Ala	Asn	Ala	Ser	Phe	Phe	Phe	Thr	Ala	Pro	Gly	Pro	Lys	Met	Val	Trp
			805					810						815	

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Gln Phe Gly Glu Met Gly Tyr Asp Val Ser Ile Glu Glu Gly Gly Arg
 820 825 830
 Thr Gly Arg Lys Pro Leu His Trp Glu Tyr Leu Asp Asn Glu Ala Arg
 835 840 845
 Lys Gly Leu Cys Asn Thr Tyr Ala Lys Leu Leu Lys Leu Arg Arg Glu
 850 855 860
 His Ser Glu Leu Phe Asn Pro Gly Ser Thr Phe Ser Trp Leu Val Lys
 865 870 875 880
 Thr Ala Asn Trp Thr Gly Gly Arg Phe Leu Thr Leu Ala Ala Thr Asn
 885 890 895
 Gly Lys Arg Leu Val Val Val Gly Asn Phe Thr Ala Lys Pro Ile Glu
 900 905 910
 Ala Ile Thr Ser Phe Pro Val Thr Gly Val Trp Thr Asn Tyr Leu Asp
 915 920 925
 Gly Thr Lys Leu His Val Thr Ser Ile Pro Thr Gly Leu Thr Ile Pro
 930 935 940
 Ala His Glu Cys Arg Val Tyr Ile Asn Phe
 945 950

<210> 9695

<211> 402

<212> PRT

<213> B.fragilis

<400> 9695

Pro Leu Leu Gln Lys Ile Lys Lys Gly Ile Ile Met Glu Tyr Gln Arg
 1 5 10 15
 Ile Trp Leu Leu Val Leu Phe Cys Leu Ser Ser Trp Asp Met His Ala
 20 25 30
 Gln His Phe Val Ile Glu Gly Lys Thr Asn Gly Tyr Val Pro Asp Gly
 35 40 45
 Ser Ile Leu Tyr Leu Gly Arg Trp Asn Gly Met Gly Ala Met Ile Tyr
 50 55 60
 Phe Thr Ser Asp Met Ile Arg Asn Gly Thr Phe Arg Leu Glu Gly Lys
 65 70 75 80
 Arg Glu Lys Thr Pro Asp Ile Ile Tyr Leu Tyr Gly Thr Glu Lys Ala
 85 90 95
 Ile Gly Thr Leu Asn Leu Arg Leu Trp Val Gly Asp Asp Thr Ile Arg
 100 105 110
 Val Ser Ala Asn Ser Glu Val Pro Glu Thr Trp Ile Val Glu Asn Asn
 115 120 125
 Met Pro Gln Gln Ala Glu Glu Asp Phe Tyr Arg Gln Leu Lys Gly Lys
 130 135 140
 Asp Asn Ile Ile Lys Thr Ser Arg Met Asn Ser Arg Gln Leu Trp Asp
 145 150 155 160
 Arg Ser Leu Thr Pro Asp Ser Val Arg Ile Leu Thr Asn Gln Ile Ile
 165 170 175
 Gln Asn Asp Leu Pro Gly Gln Ile Arg Ile Leu Ser His Leu His Lys
 180 185 190
 Gln Pro Lys Leu Thr Asp Thr Gly Leu Val Tyr Phe Phe Leu Ser Ser
 195 200 205
 Gly Tyr Ala His Trp Met Thr Asn Pro Lys His Leu Cys Met Gly Arg
 210 215 220
 Glu Ile Tyr Gly Gln Leu Thr Gly Lys Gln Lys Gln Thr Tyr Tyr Gly
 225 230 235 240
 Lys Phe Ala Lys Ser Tyr Phe Tyr Pro Asp Lys Thr Pro Glu Lys Gly
 245 250 255
 Asp Tyr Tyr Ile Asp Ala Asn Leu Phe Asp Leu Lys Gly Asp Ser Cys
 260 265 270

Lys Leu Thr Asp Tyr Leu Asn Lys Gly Lys Tyr Ile Leu Leu Asp Phe
 275 280 285
 Trp Asp Leu Tyr Cys Ala Pro Cys Lys Lys Ser Val Pro Gly Leu Lys
 290 295 300
 Glu Leu Phe Ser Ser Cys Ala Asp Lys Leu Thr Ile Ile Ser Ile Asn
 305 310 315 320
 Val Gly Ser Arg Glu Ser Gln Val Lys Gly Ser Ser Asp Phe Leu Trp
 325 330 335
 Glu Asn Leu Ser Asp Gly Gln Gly Leu Thr Gly Ile Ala Ser Arg Tyr
 340 345 350
 Gly Ile Lys Ser Ile Pro Cys Phe Ile Leu Ile Ala Pro Asn Gly Arg
 355 360 365
 Ile Glu Lys Tyr Trp Lys Gly Tyr Ala Met His His Ser Gly Met Glu
 370 375 380
 Lys Glu Ile Met Glu Ile Ile Leu Pro Asn Pro Ser Pro Thr Glu Ala
 385 390 395 400
 Ser Lys

<210> 9696

<211> 337

<212> PRT

<213> B.fragilis

<400> 9696

Ser Ile Lys His Thr Met Ser Asp Ala Tyr Lys Ile Ile His Asn Phe
 1 5 10 15
 Met Ala Phe Ile Ala Ser Pro Asp Leu Lys Asn Lys Val Trp Thr Trp
 20 25 30
 Leu Leu Asp Pro Ser Gly Lys Gln Arg Lys Glu Glu Ala Leu Leu Gln
 35 40 45
 Ile Trp Asp Glu Tyr Arg Pro Glu Ala Asp Ala Gly Thr Arg His Ser
 50 55 60
 Leu Arg Lys Phe Gln Lys Arg Ala Gly Leu Ser Ser Ala Arg Pro Ala
 65 70 75 80
 Tyr Leu His Arg Trp Ala His Ile Ala Ala Ile Leu Leu Ile Pro Leu
 85 90 95
 Ile Ser Ile Ile Thr Ala Tyr Ile Tyr Val Glu His His Thr Gln Glu
 100 105 110
 Val Arg Phe Val Glu Cys Ile Val Pro Lys Gly Glu Gln Lys Gln Ile
 115 120 125
 Thr Leu Pro Asp Gly Ser Ile Ile Thr Leu Asn Ser Gly Ser Val Phe
 130 135 140
 Leu Tyr Pro Thr Gln Phe Ala Gly Asp Thr Arg Ser Val Tyr Leu Ser
 145 150 155 160
 Gly Glu Gly His Phe Ala Val Ala Pro Asn Lys Lys Leu Pro Phe Val
 165 170 175
 Val Ala Thr Asn His Leu Asp Ile Cys Val Leu Gly Thr Gln Phe Asn
 180 185 190
 Leu Gln Ala Tyr Pro Phe Asp Arg Thr Ile Thr Thr Leu Glu Ser
 195 200 205
 Gly Ser Val Ala Val Arg Lys Lys Asn Gln Pro Asn Ser Phe Ile Thr
 210 215 220
 Leu Glu Pro Asn Gln Gln Leu Asp Tyr Glu Asn Arg Ser Gly Arg Phe
 225 230 235 240
 Asn Lys Thr Asp Ile Asp Ala Ser Val Tyr Ser Gly Trp Thr Lys Gly
 245 250 255
 Glu Met Asn Phe Ile Ser Gln Ser Leu Arg Glu Ile Leu Arg Thr Leu
 260 265 270

Glu Arg Ser Tyr Ala Val Ser Ile Gln Leu Ser Ser Asp Leu Met Glu
 275 280 285
 Ser Asn Arg Ile Asn Ser Asp Leu Tyr Thr Ile Lys Phe Lys Arg Arg
 290 295 300
 Asp Asp Ile Phe His Val Leu Asp Ile Val Thr Lys Thr Val Gly Gly
 305 310 315 320
 Ile Thr Tyr Lys Val Glu Lys Asp Glu Ser Ile Ser Ile Cys Pro Leu
 325 330 335

Lys

<210> 9697

<211> 397

<212> PRT

<213> B.fragilis

<400> 9697

Pro Met Glu His Lys Ile Ser Glu Pro Asn Ala Arg Val Asp Val Ala
 1 5 10 15
 Asp Val Leu Arg Gly Leu Ala Val Met Gly Ile Ile Ile Leu His Ser
 20 25 30
 Ile Glu His Phe Asn Phe Tyr Ser Phe Pro Asp Thr Val Pro Cys Glu
 35 40 45
 Trp Met Lys Phe Thr Asp Lys Val Ile Trp Asn Gly Leu Phe Phe Val
 50 55 60
 Phe Ser Asn Lys Ala Tyr Ala Ile Phe Ala Leu Leu Phe Gly Phe Ser
 65 70 75 80
 Phe Tyr Ile Gln Asp Asn Asn Gln Gln Arg Arg Gly Lys Asp Phe Arg
 85 90 95
 Leu Arg Phe Ile Trp Arg Met Ala Leu Leu Phe Ile Ile Gly Gln Phe
 100 105 110
 Asn Ala Ala Phe Phe Thr Gly Glu Ile Leu Thr Met Tyr Ala Met Leu
 115 120 125
 Gly Leu Ile Leu Pro Leu Ser Cys Arg Leu Ser Asp Arg Ser Ile Ala
 130 135 140
 Ile Phe Ala Thr Leu Leu Ile Ile Gln Pro Ile Asp Trp Cys Lys Val
 145 150 155 160
 Ile Tyr Ala Leu Cys Asn Pro Asp Tyr Val Ala Gly Pro Gly Leu Ala
 165 170 175
 Ser His Tyr Phe Gly Ile Ala Phe Asp Val Gln Lys Asn Gly Thr Phe
 180 185 190
 Leu Glu Thr Ile Arg Met Asn Leu Trp Glu Gly Gln Leu Ala Asn Leu
 195 200 205
 Thr Trp Ala Leu Glu His Gly Arg Ile Leu Gln Thr Pro Ala Leu Phe
 210 215 220
 Leu Phe Gly Met Leu Val Gly Arg Lys Gly Leu Phe Leu Tyr Ser Glu
 225 230 235 240
 Gln Asn Glu Gln His Trp Leu Lys Ala Leu Gly Ile Ser Leu Ile Cys
 245 250 255
 Phe Phe Pro Leu Tyr Gly Leu Asn Asn Met Leu Pro Glu Phe Ile Thr
 260 265 270
 Arg Asn Ala Ile Arg Val Pro Leu Gln Leu Ile Ile Ser Ser Leu Ser
 275 280 285
 Asn Leu Ser Phe Met Val Leu Leu Val Ser Gly Leu Leu Ile Thr Phe
 290 295 300
 Tyr Arg Ile Lys Asp Arg Arg Phe Leu Met Arg Phe Thr Ser Tyr Gly
 305 310 315 320
 Lys Met Ser Leu Thr Asn Tyr Ile Gly Gln Ser Val Ile Gly Ser Leu
 325 330 335

Leu Phe Tyr His Trp Gly Phe Glu Leu Gly Arg Phe Leu Gly Ile Thr
 340 345 350
 Tyr Ser Phe Phe Gly Ile Leu Phe Val Leu Leu Gln Met Ala Phe
 355 360 365
 Cys Ser Trp Trp Leu Ser His Phe Lys His Gly Pro Phe Glu Gly Leu
 370 375 380
 Trp Lys Arg Leu Thr Trp Ile Gly Asn Asn Lys Arg Lys
 385 390 395

<210> 9698

<211> 421

<212> PRT

<213> B.fragilis

<400> 9698

Ser Ile Met Gln Thr Ile Asp Asn Phe Asn Phe Ala Gly Lys Lys Ala
 1 5 10 15
 Phe Val Arg Val Asp Phe Asn Val Pro Leu Asp Glu Asn Phe Asn Ile
 20 25 30
 Thr Asp Asp Thr Arg Ile Arg Ala Leu Pro Thr Leu Lys Lys Ile
 35 40 45
 Leu Ala Asp Gly Gly Ser Ile Ile Gly Ser His Leu Gly Arg Pro
 50 55 60
 Lys Gly Val Ala Asp Lys Phe Ser Leu Lys His Ile Val Lys His Val
 65 70 75 80
 Ser Glu Leu Leu Gly Val Glu Val Gln Phe Ala Asn Asp Cys Met Gly
 85 90 95
 Glu Glu Ala Ala Val Lys Ala Ala Ala Leu Gln Pro Gly Glu Val Leu
 100 105 110
 Leu Leu Glu Asn Leu Arg Phe Tyr Ala Glu Glu Glu Gly Lys Pro Arg
 115 120 125
 Gly Leu Ala Glu Asp Ala Thr Asp Glu Glu Lys Ala Ala Ala Lys Lys
 130 135 140
 Ala Val Lys Glu Ser Gln Lys Glu Phe Thr Lys Lys Leu Ala Ser Tyr
 145 150 155 160
 Ala Asp Cys Tyr Val Asn Asp Ala Phe Gly Thr Ala His Arg Ala His
 165 170 175
 Ala Ser Thr Ala Leu Ile Ala Lys Tyr Phe Asp Thr Asn Asn Lys Met
 180 185 190
 Phe Gly Tyr Leu Met Glu Lys Glu Val Lys Ala Val Asp Lys Ile Leu
 195 200 205
 Asn Asp Ile Lys Arg Pro Phe Thr Ala Ile Met Gly Gly Ser Lys Val
 210 215 220
 Ser Ser Lys Ile Glu Ile Ile Glu Asn Leu Leu Asn Lys Val Asp Asn
 225 230 235 240
 Leu Ile Ile Thr Gly Gly Met Thr Tyr Thr Phe Thr Lys Ala Met Gly
 245 250 255
 Gly Gln Ile Gly Leu Ser Ile Cys Glu Asp Asp Lys Leu Asp Leu Ala
 260 265 270
 Arg Glu Leu Met Gln Lys Ala Lys Asp Lys Gly Val Asn Leu Val Leu
 275 280 285
 Ala Val Asp Ala Lys Ile Ala Asp Ala Phe Ser Asn Asp Ala Asn Thr
 290 295 300
 Lys Phe Cys Pro Val Asn Glu Ile Pro Asp Gly Trp Glu Gly Leu Asp
 305 310 315 320
 Ile Gly Pro Lys Ser Glu Glu Ile Phe Ala Glu Val Ile Lys Asn Ser
 325 330 335
 Lys Thr Ile Leu Trp Asn Gly Pro Thr Gly Val Phe Glu Phe Glu Asn
 340 345 350

Phe Thr His Gly Ser Arg Ser Val Gly Glu Ala Ile Val Glu Ala Thr
 355 360 365
 Lys Asn Gly Ala Phe Ser Leu Val Gly Gly Gly Asp Ser Val Ala Cys
 370 375 380
 Val Asn Lys Phe Gly Leu Ala Asn Gly Val Ser Tyr Val Ser Thr Gly
 385 390 395 400
 Gly Gly Ala Leu Leu Glu Ala Ile Glu Gly Lys Val Leu Pro Gly Ile
 405 410 415
 Ala Ala Ile Gln Glu
 420

<210> 9699

<211> 83

<212> PRT

<213> B.fragilis

<400> 9699

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9700

<211> 229

<212> PRT

<213> B.fragilis

<400> 9700

Glu Gln Thr Lys Met Thr Lys Lys Glu Arg Tyr Glu Lys Val Ile Ala
 1 5 10 15
 Trp Phe Gln Glu Asn Val Pro Val Ala Glu Thr Glu Leu His Tyr Asn
 20 25 30
 Asn Pro Tyr Glu Leu Leu Ile Ala Val Ile Leu Ser Ala Gln Cys Thr
 35 40 45
 Asp Lys Arg Val Asn Met Ile Thr Pro Arg Ile Tyr Gln Asp Phe Pro
 50 55 60
 Thr Pro Glu Ala Leu Ala Ala Thr Thr Pro Glu Val Ile Phe Glu Tyr
 65 70 75 80
 Ile Arg Ser Val Ser Tyr Pro Asn Asn Lys Ser Lys His Leu Val Gly
 85 90 95
 Met Ala Arg Met Leu Val Asn Asp Phe Asn Ser Glu Val Pro Asp Thr
 100 105 110
 Leu Glu Glu Leu Ile Lys Leu Pro Gly Val Gly Arg Lys Thr Ala Asn
 115 120 125
 Val Ile Gln Ser Val Val Phe Asn Lys Ala Ala Met Ala Val Asp Thr
 130 135 140
 His Val Phe Arg Val Ser His Arg Ile Gly Leu Val Ser Asn Ser Cys
 145 150 155 160
 Thr Thr Pro Phe Ser Val Glu Lys Glu Leu Met Lys Asn Ile Pro Asp
 165 170 175
 Glu Leu Ile Pro Ile Ala His His Trp Leu Ile Leu His Gly Arg Tyr

180 185 190
 Val Cys Gln Ala Arg Thr Pro Lys Cys Glu Thr Cys Gly Leu Gln Leu
 195 200 205
 Met Cys Lys Tyr Tyr Cys Glu Lys Tyr Lys Val Ser Lys Asp Thr Pro
 210 215 220
 Lys Arg Lys Asn Lys
 225

<210> 9701
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9701
 Val Met Asn Lys Asp Asn Leu Leu Leu Tyr Thr Ala Val Ile Phe Leu
 1 5 10 15
 Phe Ile Lys Arg Asp Lys Ser Val Gly Leu Val Leu Leu Gly Leu Trp
 20 25 30
 Leu Val Leu Asn Ile Gly Leu Ile Val Ser Leu Leu Gly Ser Met Ser
 35 40 45
 Gly Tyr Leu Leu Pro Leu Ala Leu Leu Ile Ile Gly Gly Ile Leu Tyr
 50 55 60
 Leu Ile Ser Thr Arg
 65

<210> 9702
 <211> 723
 <212> PRT
 <213> B.fragilis

<400> 9702
 Leu Thr His Lys Ile Met Lys Leu Lys Ile Lys Leu Arg Asn Ile Leu
 1 5 10 15
 Ser Val Lys Ile His Lys Ile Val Leu Leu Leu Leu Ala Leu Cys Ile
 20 25 30
 Tyr Asn Thr Ala Tyr Gly Gln Asn Gln Arg Ile Ser Val Tyr Gly Asn
 35 40 45
 Asn Gln Ser Leu Gln Lys Val Phe Glu Gln Ile Glu Glu Gln Thr Gln
 50 55 60
 Leu Ser Ile Thr Tyr Asn Gln Thr Arg Leu Asp Val Asn Arg Lys Ile
 65 70 75 80
 Lys Gly Asn Phe Val Asp Lys Glu Leu Ser Phe Val Met Asp Ala Leu
 85 90 95
 Leu Lys Asn Thr Gly Phe Thr Cys Arg Tyr Glu Ala Glu His Ile Val
 100 105 110
 Ile Thr Pro Val Glu Gln Lys Lys Glu Lys Ala Ala Ala Gly Gln Ala
 115 120 125
 Thr Gln Met Lys Lys Ile Thr Gly Lys Val Thr Gly Val Thr Gly Glu
 130 135 140
 Pro Leu Ile Gly Ala Asn Val Leu Ala Val Gly Gly Lys Gln Ala Thr
 145 150 155 160
 Ile Thr Asn Leu Glu Gly Glu Phe Ser Leu Glu Val Ser Asp Asn Ser
 165 170 175
 Lys Leu Gln Val Thr Tyr Ile Gly Tyr Leu Pro Gln Glu Val Ser Thr
 180 185 190
 Asn Gly Lys Thr His Phe Val Ile Gln Leu Lys Glu Asp Ser Gln Leu
 195 200 205
 Met Asp Glu Val Val Val Val Gly Phe Gly Thr Gln Lys Lys Val Asn
 210 215 220

Leu Thr Gly Ala Val Thr Ala Val Asn Ile Gln Glu Thr Leu Gly Asp
 225 230 235 240
 Arg Pro Ile Thr Asn Val Thr Ala Ala Leu Gln Gly Val Val Pro Gly
 245 250 255
 Leu Lys Ile Glu Gly Thr Thr Gly Thr Pro Gly Asp Asn Leu Ser Tyr
 260 265 270
 Asn Ile Arg Gly Thr Thr Ser Ile Asn Gly Gly Gly Pro Leu Val Leu
 275 280 285
 Val Asn Asn Val Pro Met Asp Ile Asn Met Ile Asp Pro Gln Asp Ile
 290 295 300
 Glu Ser Val Ser Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr Gly
 305 310 315 320
 Ala Arg Ala Ala Phe Gly Val Ile Leu Ile Thr Thr Lys Gln Gly Lys
 325 330 335
 Lys Asp Met Ala Pro Lys Phe Asn Tyr Asn Asn Asn Phe Ser Phe Ser
 340 345 350
 Lys Ala Leu Glu Leu Pro Gln Lys Ala Gly Pro Leu Glu Ser Ile Leu
 355 360 365
 Ala Tyr Lys Glu Met Gly Trp Pro Asn Asp Thr Tyr Val Asp Gly Lys
 370 375 380
 Asn Ile Pro Gln Trp Glu Thr Tyr Ile Arg Asp Tyr Met Ala Asn Pro
 385 390 395 400
 Ser Gln Tyr Pro Asn Gly Tyr Val Phe Asp Glu Asp Gly Asn Leu Phe
 405 410 415
 Leu Met Arg Glu Asn Asp Met Phe Ala Asp Met Met Asp Asn Tyr Gly
 420 425 430
 Phe Met Gln Asn His Ser Phe Ser Val Ser Gly Gly Ser Ser Arg Thr
 435 440 445
 Asn Tyr Arg Ile Gly Leu Gly Tyr Thr Asn Glu Asp Gly Ile Leu Ile
 450 455 460
 Thr Asp Lys Asp Arg Tyr Glu Arg Ala Asn Leu Ser Ser Phe Leu Ser
 465 470 475 480
 Val Glu Val Asn Lys Trp Leu Thr Thr Gln Leu Asp Ile Arg Tyr Ala
 485 490 495
 Asn Ser Thr Gln Asn Lys Val Glu Gln Gly Gly Arg Asn Gly Ile Trp
 500 505 510
 Gly Ser Ala Met Gln Leu Pro Ser Tyr Gln Asn Ile Ser Pro Tyr Glu
 515 520 525
 Glu Asp Gly Ile Ile Tyr Pro Ala Glu Thr Ser Ala Thr Tyr Ile Arg
 530 535 540
 Tyr Gly Glu Pro Arg Ile Val Lys Lys Thr Asp Leu Arg Ala Leu Gly
 545 550 555 560
 Arg Ile Ile Ile Ser Pro Leu Lys Asn Leu Lys Ile Thr Gly Glu Tyr
 565 570 575
 Thr Tyr Asn Arg Val Thr Asn Tyr Asn Arg Met Tyr Val Asn Gln Tyr
 580 585 590
 Lys Tyr Ile Gly Met Asn Phe Thr Gly Val Leu Asn Asn Thr Glu Asn
 595 600 605
 Thr Arg Tyr Ala Leu Thr Gln Gly Phe Thr Asn Tyr Asn Ala Ile Asn
 610 615 620
 Ile Phe Ala Asn Tyr Asp Phe Ser Ile Gly Asn His His Ile Ser Val
 625 630 635 640
 Met Gly Gly Phe Asn Gln Glu Glu Asn His Ala Glu Ser Gln Trp Thr
 645 650 655
 Glu Arg Lys Asp Val Leu Leu Ser Asn Leu Pro Ser Ile Ser Gly Ala
 660 665 670
 Thr Gly Thr Thr Thr Ala Thr Asp Thr Phe Asn Glu Tyr Ala Leu Arg
 675 680 685
 Gly Leu Phe Tyr Arg Val Asn Tyr Ser Tyr Lys Asp Arg Tyr Met Leu

690		695		700
Glu Ala Asn Gly Arg Tyr	Asp Gly Ser Leu His	His Glu Ala Gly Arg		
705	710	715	720	
Asp Pro Gly				

<210> 9703
 <211> 343
 <212> PRT
 <213> B.fragilis

<400> 9703

Phe Thr Asn Asn Lys Leu Leu Asn Lys Met Val Asn Tyr Lys Asp Leu	
1 5 10 15	
Gly Leu Val Asn Thr Arg Asp Met Phe Ala Lys Ala Ile Lys Gly Gly	
20 25 30	
Tyr Ala Ile Pro Ala Phe Asn Phe Asn Asn Met Glu Gln Met Gln Ala	
35 40 45	
Ile Ile Lys Ala Ala Val Glu Thr Lys Ser Pro Val Ile Leu Gln Val	
50 55 60	
Ser Lys Gly Ala Arg Gln Tyr Ala Asn Ala Thr Leu Leu Arg Tyr Met	
65 70 75 80	
Ala Gln Gly Ala Val Glu Tyr Ala Lys Glu Leu Gly Cys Lys Asn Pro	
85 90 95	
Glu Ile Val Leu His Leu Asp His Gly Asp Thr Phe Glu Thr Cys Lys	
100 105 110	
Ser Cys Ile Asp Ser Gly Phe Ser Ser Val Met Ile Asp Gly Ser His	
115 120 125	
Leu Pro Tyr Asp Glu Asn Val Ala Leu Thr Lys Lys Val Val Glu Tyr	
130 135 140	
Ala His Gln Phe Asp Val Thr Val Glu Gly Glu Leu Gly Val Leu Ala	
145 150 155 160	
Gly Val Glu Asp Glu Val Ser Ser Asp His His Thr Tyr Thr Glu Pro	
165 170 175	
Asp Glu Val Val Asp Phe Val Thr Lys Thr Gly Cys Asp Ser Leu Ala	
180 185 190	
Ile Ser Ile Gly Thr Ser His Gly Ala Tyr Lys Phe Thr Pro Glu Gln	
195 200 205	
Cys His Ile Asp Pro Lys Thr Gly Arg Met Val Pro Pro Pro Leu Ala	
210 215 220	
Phe Asp Val Leu Asp Gly Val Met Lys Glu Leu Pro Gly Phe Pro Ile	
225 230 235 240	
Val Leu His Gly Ser Ser Ser Val Pro Glu Glu Glu Val Ala Thr Ile	
245 250 255	
Asn Gln Phe Gly Gly Ala Leu Lys Ala Ala Ile Gly Ile Pro Glu Glu	
260 265 270	
Glu Leu Arg Lys Ala Ala Lys Ser Ala Val Cys Lys Ile Asn Ile Asp	
275 280 285	
Ser Asp Ser Arg Leu Ala Met Thr Ala Ala Ile Arg Lys Val Phe Ala	
290 295 300	
Glu Lys Pro Ala Glu Phe Asp Pro Arg Lys Tyr Leu Gly Pro Ala Arg	
305 310 315 320	
Asp Asn Met Glu Lys Leu Tyr Lys His Lys Ile Ile Asn Val Leu Gly	
325 330 335	
Ser Asp Asn Lys Leu Ala Glu	
340	

<210> 9704
 <211> 677

<212> PRT

<213> B.fragilis

<400> 9704

Val	Asp	Asn	Asn	Ile	Tyr	Asn	Ile	Glu	Lys	Asn	Met	Lys	Met	Asn	Tyr
1				5					10					15	
Leu	Ala	Phe	Ile	Gly	Val	Thr	Ala	Ala	Thr	Ala	Val	Val	Ser	Cys	Thr
			20					25					30		
Pro	Ala	Lys	Lys	Glu	Tyr	Ala	Ser	Tyr	Glu	Leu	Tyr	Pro	Val	Arg	Ser
		35					40					45			
Gly	Ser	Leu	Thr	Glu	Met	Glu	Tyr	Ser	Pro	Glu	Ser	Thr	Lys	Phe	Thr
	50					55				60					
Leu	Trp	Ala	Pro	Thr	Ala	Asp	Glu	Val	Arg	Leu	Met	Leu	Phe	Asp	Ser
65					70				75					80	
Gly	Glu	Gly	Gly	His	Ala	Tyr	Glu	Thr	Ile	Pro	Met	Glu	Pro	Gly	Glu
				85					90					95	
Glu	Gly	Thr	Trp	Met	Ala	Thr	Val	Ser	Lys	Asp	Leu	Met	Gly	Lys	Phe
			100					105					110		
Tyr	Thr	Phe	Asn	Val	Lys	Val	Asn	Asp	Lys	Trp	Met	Gly	Asp	Thr	Pro
		115					120					125			
Gly	Ile	Asn	Ala	Lys	Ala	Val	Gly	Val	Asn	Gly	Lys	Arg	Ala	Ala	Ile
	130					135				140					
Ile	Asn	Leu	Lys	Ser	Thr	Asp	Pro	Gln	Gly	Trp	Glu	Thr	Asp	Gln	Arg
145					150				155					160	
Pro	Pro	Leu	Lys	Ser	Pro	Ala	Asp	Ala	Ile	Ile	Tyr	Glu	Met	His	His
				165					170					175	
Arg	Asp	Phe	Ser	Val	Asp	Ser	Thr	Ser	Gly	Ile	Gln	His	Lys	Gly	Lys
			180					185					190		
Phe	Leu	Ala	Leu	Thr	Glu	His	Gly	Thr	Met	Asn	Ser	Ala	Lys	Leu	Leu
	195						200					205			
Thr	Gly	Ile	Asp	His	Leu	Ile	Glu	Leu	Gly	Val	Thr	His	Val	His	Leu
	210					215					220				
Leu	Pro	Ser	Tyr	Asp	Tyr	Ala	Ser	Val	Asp	Glu	Thr	Lys	Leu	Asp	Glu
225					230				235					240	
Asn	Lys	Tyr	Asn	Trp	Gly	Tyr	Asp	Pro	Gln	Asn	Tyr	Asn	Val	Pro	Asp
			245						250					255	
Gly	Ser	Tyr	Ala	Thr	Asp	Pro	Tyr	Asp	Pro	Ala	Val	Arg	Ile	Arg	Glu
		260					265						270		
Phe	Lys	Gln	Met	Val	Gln	Ala	Leu	His	Lys	Ala	Gly	Ile	Arg	Val	Val
	275						280					285			
Leu	Asp	Val	Val	Tyr	Asn	His	Thr	Tyr	Asn	Thr	Asp	Gly	Ser	Asn	Phe
	290					295					300				
Glu	Arg	Thr	Val	Pro	Gly	Tyr	Phe	Tyr	Arg	Gln	Lys	Pro	Asp	Gly	Ser
305					310				315					320	
Leu	Ala	Asn	Gly	Ser	Ala	Cys	Gly	Asn	Glu	Thr	Ala	Ser	Asn	Arg	Pro
				325					330					335	
Met	Met	Arg	Lys	Tyr	Met	Ile	Glu	Ser	Val	Leu	His	Trp	Ile	Lys	Glu
			340					345					350		
Tyr	His	Ile	Asp	Gly	Phe	Arg	Phe	Asp	Leu	Met	Gly	Ile	His	Asp	Ile
	355						360					365			
Glu	Thr	Met	Asn	Glu	Ile	Arg	Lys	Ala	Val	Ser	Ala	Val	Asp	Pro	Ser
	370					375					380				
Ile	Ile	Ile	Tyr	Gly	Glu	Gly	Trp	Ala	Ala	Glu	Ala	Pro	Gln	Tyr	Pro
385					390				395					400	
Gly	Asp	Ser	Leu	Ala	Met	Lys	Val	Asn	Thr	Cys	Lys	Met	Pro	Gly	Ile
			405						410					415	
Ala	Ala	Phe	Ser	Asp	Glu	Met	Arg	Asp	Ala	Leu	Arg	Gly	Pro	Phe	Asn
			420					425					430		
Asp	Asn	His	Lys	Gly	Ala	Phe	Leu	Ala	Gly	Ile	Pro	Gly	Glu	Glu	Glu

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      435              440              445
Ser Ile Lys Phe Gly Ile Val Gly Ala Val Ser His Pro Gln Val Asn
450              455              460
Asn Asp Ser Val Asn Tyr Ser Lys Ala Pro Trp Ala Ser Gln Pro Thr
465              470              475              480
Gln Met Ile Ser Tyr Val Ser Cys His Asp Asp Met Cys Leu Val Asp
      485              490              495
Arg Leu Lys Ser Ser Ile Pro Gly Ile Thr Pro Glu Gln Leu Val Arg
      500              505              510
Leu Asp Lys Leu Ala Gln Thr Ala Val Leu Thr Ser Gln Gly Ile Pro
      515              520              525
Phe Ile Tyr Ala Gly Glu Glu Val Met Arg Asp Lys Lys Gly Val His
      530              535              540
Asn Ser Phe Glu Ser Pro Asp Ser Ile Asn Ala Ile Asp Trp Asn Arg
545              550              555              560
Lys Thr Thr His Glu Asp Val Phe Ala Tyr Tyr Lys Arg Leu Ile Ser
      565              570              575
Ile Arg Lys Ala His Pro Ala Phe Arg Met Gly Asp Ala Glu Met Val
      580              585              590
Arg Lys His Leu Glu Phe Leu Pro Val Asp Val Gly Asn Leu Val Ala
      595              600              605
Phe Arg Leu Lys Asp Arg Ala Asn Gly Asp Thr Trp Asp Asn Ile Ile
      610              615              620
Val Ala Leu Asn Ala Arg Ser Val Pro Ala Lys Leu Ala Ile Pro Glu
625              630              635              640
Gly Lys Tyr Thr Val Val Cys Arg Asp Gly Val Ile Asp Glu Arg Gly
      645              650              655
Leu Gly Leu Leu Tyr Gly Pro Glu Val Thr Val Pro Ala Gln Ser Ala
      660              665              670
Leu Ile Ile His Gln
      675

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<210> 9705

<211> 452

<212> PRT

<213> B.fragilis

<400> 9705

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Leu Ala Asp Asn Lys Thr Ile Arg Pro Met Arg Thr Arg Thr Met Lys
1              5              10              15
Pro Leu Phe Leu Ile Phe Cys Leu Cys Leu Ser Pro Leu Leu Met Gly
      20              25              30
Gln Asn Gln Asn Lys Ile Gln Glu Ala Met Ala Asn Tyr Asp Tyr Glu
      35              40              45
Thr Ala Val Glu Leu Ile Asn Lys Glu Pro Pro Thr Ile Pro Leu Leu
      50              55              60
Met Gln Lys Ala Lys Ala Leu Lys Gly Ile Gly Ser Asn Ala Glu Ala
65              70              75              80
Leu Arg Ser Ile Arg Gln Val Ile Ala Glu Asp Ser Thr Asn Gln Gln
      85              90              95
Ala His Ile Glu Ala Ala Glu Cys Cys Lys Ala Met Ala Lys Tyr Asn
      100              105              110
Asp Ala Leu Asp Tyr Tyr Arg Lys Ala Ile Ser Leu Asn Pro Lys Asn
      115              120              125
Lys Tyr Ala Arg Leu Gln Phe Ile Asn Leu Leu Cys Asn Thr Lys Asn
      130              135              140
Tyr Ala Glu Ala Phe Gly Glu Ser Ser Met Met Ser Glu Thr Asp Ser
145              150              155              160
Ser Ala Val Val Leu His Leu Gln Ala Gln Ser Leu Glu Gly Met Gln

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115 120 125
 Glu Asn Lys
 130
 <210> 9707
 <211> 167
 <212> PRT
 <213> B.fragilis
 <400> 9707
 Leu Gln Lys Asn Phe Phe Ile Lys Gln Glu Leu Ile Phe Phe Val Leu
 1 5 10 15
 Phe Tyr Thr Ile Pro Lys Arg Arg Leu Ile Pro Lys Phe Lys Asn Ile
 20 25 30
 Val Met Lys Ile Ser His Ile Glu His Leu Gly Ile Ala Val Lys Ser
 35 40 45
 Ile Glu Glu Ala Leu Pro Tyr Tyr Glu Asn Val Leu Gly Leu Lys Cys
 50 55 60
 Tyr Asn Ile Glu Thr Val Glu Asp Gln Lys Val Arg Thr Ala Phe Leu
 65 70 75 80
 Lys Val Gly Asp Thr Lys Ile Glu Leu Leu Glu Pro Thr Cys Pro Glu
 85 90 95
 Ser Thr Ile Ala Lys Phe Ile Glu Asn Lys Gly Ala Gly Val His His
 100 105 110
 Val Ala Phe Ala Ile Glu Asp Gly Val Ala Asn Ala Leu Ala Glu Ala
 115 120 125
 Glu Ser Lys Glu Ile Arg Leu Ile Asp Lys Ala Pro Arg Lys Gly Ala
 130 135 140
 Glu Gly Leu Asn Ile Ala Phe Leu His Pro Lys Ser Thr Leu Gly Val
 145 150 155 160
 Leu Thr Glu Leu Cys Glu His
 165
 <210> 9708
 <211> 425
 <212> PRT
 <213> B.fragilis
 <400> 9708
 Lys Val Arg Asn Asn Arg Ile Tyr Pro Leu Met Lys His Trp Ile Leu
 1 5 10 15
 Leu Leu Tyr Leu Gly Phe Ser Val Met Leu Arg Ala Gln Asn Thr Ala
 20 25 30
 Ser Val Gln Glu Ala Met Ala Asn Tyr Asp Tyr Lys Thr Val Ile Arg
 35 40 45
 Leu Ile Asp Glu Glu Ser Ala Ser Pro Gln Leu Leu Ile Gln Lys Ala
 50 55 60
 Lys Ala Leu Lys Gly Leu Gly Arg Thr Ala Glu Ala Leu Ser Thr Leu
 65 70 75 80
 Gln His Ile Ile Ile Glu Leu Pro Glu Asn Gln Gln Ala Leu Val Glu
 85 90 95
 Ala Ala Glu Cys Cys Arg Gln Leu Ser Lys Phe Asn Glu Ala Leu Gly
 100 105 110
 Tyr Tyr Arg Lys Val Met Glu Leu Asn Pro Glu His Ile Tyr Ala His
 115 120 125
 Leu Gln Tyr Thr Arg Leu Leu Tyr Asn Tyr Gln Arg Tyr Gly Asp Ala
 130 135 140
 Leu Arg Glu Ser Ile Ala Leu Ala Arg Lys Asp Ser Ser Ala Thr Val
 145 150 155 160

Leu Arg Leu Met Ala Glu Ser Met Glu Gly Ala Gly Met Pro Val Glu
 165 170 175
 Ser Met Phe Cys Tyr Leu Ser Ile Ile Arg Lys Tyr Pro Ser Asp Tyr
 180 185 190
 Leu Ser Val Ala Lys Leu Gly Ser Ile Phe Asn Thr Met Lys Asp Tyr
 195 200 205
 Glu Gly Ala Ile Ala Leu Thr Glu Ala Tyr Arg Arg Thr Asp Ser Thr
 210 215 220
 Asn Val Glu Val Asn Arg Gln Asn Ala Leu Ala Tyr Cys Leu Arg Lys
 225 230 235 240
 Glu Tyr Pro Thr Ala Ile Lys Arg Tyr Gln Asp Leu Thr Ala Arg Gly
 245 250 255
 Asp Ser Thr Leu Leu Thr Cys Tyr Tyr Leu Gly Val Ser Tyr Tyr Ala
 260 265 270
 Thr Lys Glu Tyr Tyr Lys Ala Arg Asp Trp Leu Leu Lys Ala Lys Ser
 275 280 285
 Cys Gln Ser Pro Gly Ala Asn Leu Leu Tyr Tyr Leu Gly Arg Ser Cys
 290 295 300
 Ser Lys Thr Leu Trp Lys Gln Glu Gly Ile Gly Tyr Leu Asn Gln Ala
 305 310 315 320
 Ile Ala Leu Thr Ile Pro Ala Asp Ser Ile Met Glu Arg Leu Tyr Ser
 325 330 335
 Gly Leu Ala Asp Cys Tyr Arg Gln Thr Lys Gln Thr Arg Asp Gln Ile
 340 345 350
 Lys Ala Thr Lys Glu Gln Tyr Lys Tyr Ala Pro Asp Lys His Ile Leu
 355 360 365
 Leu Tyr Asn Leu Ala Phe Leu Ser Asp Lys Ile Glu Asp Thr Lys Ala
 370 375 380
 Thr Glu His Tyr Leu Gln Ala Phe Leu Arg Thr Lys Ser Lys Gln Asn
 385 390 395 400
 Ala Val Leu Gln Gln Pro Asp Asp Asp Glu Glu Glu Pro Ala Pro Tyr
 405 410 415
 Ile Asp Tyr Tyr Lys Ser Ala Thr Asn
 420 425

<210> 9709

<211> 443

<212> PRT

<213> B.fragilis

<400> 9709

Arg Ser Ser Lys Arg Pro Ile Lys Phe Tyr Cys Arg Arg His Glu His
 1 5 10 15
 Arg Val Ser Gln Gly Phe Leu Lys Ile Lys Lys Arg Leu Phe Val Arg
 20 25 30
 Leu Cys Val Thr Leu Arg Ser Asn Gln Asn His His Thr Met Ser Lys
 35 40 45
 Asp Arg Leu Val Thr Pro Ser Tyr Val Leu Ile Leu Ala Ala Asn Phe
 50 55 60
 Leu Leu Tyr Phe Ala Phe Tyr Leu Ile Leu Pro Val Leu Pro Phe Tyr
 65 70 75 80
 Leu Thr Glu Ile Phe Gln Thr Gly Asn Ala Ala Val Gly Val Ile Leu
 85 90 95
 Ser Cys Tyr Thr Val Ala Ser Leu Cys Ile Arg Pro Phe Ser Gly Tyr
 100 105 110
 Leu Leu Asp Thr Leu Ala Arg Lys Pro Leu Tyr Leu Ile Ala Tyr Phe
 115 120 125
 Leu Phe Ile Thr Val Phe Ala Gly Tyr Ile Leu Ala Gly Val Leu Ser
 130 135 140


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Leu Phe Ile Met Leu Arg Val Val His Gly Leu Ala Phe Gly Met Val
145          150          155          160
Thr Val Ala Gly Asn Thr Ile Val Ile Asp Ile Thr Pro Ser Ser Arg
          165          170          175
Arg Gly Glu Ala Val Gly Tyr Tyr Gly Leu Met Asn Asn Thr Ala Met
          180          185          190
Ser Phe Gly Pro Met Ile Gly Leu Phe Met His Asp Thr Cys Ser Phe
          195          200          205
Glu Thr Ile Phe Leu Cys Ser Leu Leu Ser Gly Thr Val Gly Phe Ala
          210          215          220
Ala Ala Cys Leu Val Lys Thr Pro Val Lys Glu Pro Val Lys Arg Glu
225          230          235          240
Pro Ile Ser Leu Asp Arg Phe Val Leu Ile Lys Gly Ile Pro Ala Gly
          245          250          255
Val Ala Leu Leu Leu Leu Ser Ile Pro Tyr Gly Met Thr Ser Thr Tyr
          260          265          270
Ile Ala Met Tyr Ala Lys Glu Ile Gly Ile Thr Leu Ser Ser Gly Leu
          275          280          285
Phe Phe Thr Phe Met Ala Val Gly Met Ala Val Ser Arg Met Phe Ser
          290          295          300
Gly Arg Gln Val Asp Lys Gly Arg Ile Thr Gln Val Ile Thr Leu Gly
305          310          315          320
Leu Tyr Leu Val Cys Ala Cys Phe Phe Thr Leu Ala Ala Cys Gly Lys
          325          330          335
Leu Met Ser Leu Ser Pro Glu Leu Thr Asp Val Leu Phe Phe Met Val
          340          345          350
Ala Leu Leu Leu Gly Val Gly Phe Gly Thr Met Phe Pro Ala Phe Asn
          355          360          365
Thr Leu Phe Val Asn Leu Ala Pro Asn Ser Gln Arg Gly Thr Ala Thr
          370          375          380
Ser Thr Tyr Leu Thr Ser Trp Asp Val Gly Ile Gly Ile Gly Leu Ile
385          390          395          400
Leu Gly Gly Tyr Ile Ala Gln Leu Thr Ser Phe Asp Met Ala Tyr Phe
          405          410          415
Phe Gly Ala Cys Leu Thr Val Val Ser Thr Phe Tyr Phe Asn Leu Lys
          420          425          430
Val Ala Pro His Tyr His Lys Asn Lys Leu Arg
          435          440

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<210> 9710

<211> 349

<212> PRT

<213> B.fragilis

<400> 9710

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Arg Lys Ser Asn Asn Asn Lys Ser Gln Asp Met Ile Ala Lys Ile Asn
1          5          10          15
Gln Leu Leu Glu Glu Val Gly Ala Leu Lys Ala Ala Asn Ala Glu Glu
          20          25          30
Leu Glu Val Leu Arg Ile Lys Tyr Leu Ser Lys Lys Gly Ala Ile Asn
          35          40          45
Asp Leu Met Ala Asp Phe Arg Asn Val Ala Ala Glu Gln Lys Lys Glu
          50          55          60
Val Gly Met Lys Leu Asn Glu Leu Lys Thr Lys Ala Gln Glu Lys Ile
          65          70          75          80
Asn Ala Leu Lys Glu Gln Phe Asp Asn Gln Asp Asn Gly Gln Asp Asp
          85          90          95
Leu Asp Leu Thr Arg Ser Ala Tyr Pro Val Glu Leu Gly Thr Arg His
          100          105          110

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Pro Leu Ser Ile Val Arg Asn Glu Ile Ile Asp Ile Phe Ala Arg Leu
 115 120 125
 Gly Phe Asn Ile Ala Glu Gly Pro Glu Ile Glu Asp Asp Trp His Val
 130 135 140
 Phe Ser Ala Leu Asn Phe Ala Glu Asp His Pro Ala Arg Asp Met Gln
 145 150 155 160
 Asp Thr Phe Phe Ile Glu Ser His Pro Asp Val Leu Leu Arg Thr His
 165 170 175
 Thr Ser Ser Val Gln Ser Arg Val Met Glu Val Ser Gln Pro Pro Ile
 180 185 190
 Arg Ile Ile Cys Pro Gly Arg Val Tyr Arg Asn Glu Ala Ile Ser Tyr
 195 200 205
 Arg Ala His Cys Phe Phe His Gln Val Glu Ala Leu Tyr Val Asp Arg
 210 215 220
 Asn Val Ser Phe Thr Asp Leu Lys Gln Val Leu Leu Leu Phe Ala Lys
 225 230 235 240
 Glu Met Phe Gly Ala Asp Thr Lys Ile Arg Leu Arg Pro Ser Tyr Phe
 245 250 255
 Pro Phe Thr Glu Pro Ser Ala Glu Met Asp Ile Ser Cys Asn Ile Cys
 260 265 270
 Gly Gly Lys Gly Cys Pro Phe Cys Lys His Thr Gly Trp Val Glu Ile
 275 280 285
 Leu Gly Cys Gly Met Val Asp Pro Asn Val Leu Asp Ala Asn Gly Ile
 290 295 300
 Asp Ser Lys Val Tyr Ser Gly Tyr Ala Leu Gly Met Gly Ile Glu Arg
 305 310 315 320
 Ile Thr Asn Leu Lys Tyr Gln Val Lys Asp Leu Arg Met Phe Ser Glu
 325 330 335
 Asn Asp Thr Arg Phe Leu Lys Glu Phe Glu Ala Ala Tyr
 340 345

<210> 9711

<211> 97

<212> PRT

<213> B.fragilis

<400> 9711

Phe Leu Cys Asp Gln Ser Ser Gly Asn Asn Asn Asn Lys Thr Ile Val
 1 5 10 15
 Val Leu Pro Glu Lys Ile Val Ser Trp Ala Val Thr Asn Pro Pro Gly
 20 25 30
 Leu Trp Gly Phe Leu Glu Ile Leu Leu His Gly Ala Cys Ser Gly Ser
 35 40 45
 Lys Val Leu Ile Val Met Leu Asn Glu Arg Pro Arg Trp Pro Pro Leu
 50 55 60
 Thr Pro Pro Ser Asp Thr Asn Phe Ser Lys Gln Met Leu Thr Met Glu
 65 70 75 80
 Gly Thr Leu Val Ser Gln Gly Phe Glu Phe Ser Leu His Ala His Leu
 85 90 95
 Phe

<210> 9712

<211> 60

<212> PRT

<213> B.fragilis

<400> 9712

His Tyr Arg Leu Arg Phe Leu Ser Cys Phe Val Tyr Ser Val Val Tyr

1		5		10		15
Arg	Tyr	Thr	Leu	Trp	Gln	Ile
		20		25		30
His	Gly	Phe	Pro	His	Phe	Asn
		35		40		45
Trp	Val	Trp	Arg	Val	Ser	Asp
		50		55		60

<210> 9713

<211> 733

<212> PRT

<213> B.fragilis

<400> 9713

Ile	Met	Asn	Glu	Gln	Leu	Ile	Asn	Glu	Gln	Tyr	Gln	Tyr	Ile	Leu	Arg
1				5				10					15		
Leu	Ile	Gly	Gln	Lys	Arg	Leu	Lys	Glu	Ala	Leu	Thr	Gln	Leu	Glu	Ser
		20						25				30			
Phe	Leu	Trp	Lys	Cys	Pro	Glu	Trp	Ser	Leu	Arg	Thr	Arg	Leu	Glu	Gln
		35					40				45				
Ile	Gln	Thr	Ser	Tyr	Ser	Tyr	Met	Leu	Gln	Tyr	Met	Arg	Gln	Gly	Ile
		50				55					60				
Glu	Asp	Pro	Glu	Arg	Arg	Lys	Leu	Tyr	Gln	Lys	Leu	Leu	Thr	Asp	Thr
65				70				75						80	
Leu	Glu	Ile	Thr	Asp	Gln	Ala	Arg	Ile	Thr	Leu	Leu	Asp	Ser	Val	Ser
				85				90						95	
Asn	His	Tyr	Tyr	His	Gln	Tyr	Arg	Thr	Arg	Leu	Ser	Glu	Glu	Val	Ser
		100						105				110			
Pro	Leu	Thr	Leu	Glu	Met	Leu	Met	His	Thr	Leu	Glu	Ser	Phe	Asn	Asp
		115				120						125			
Asp	Leu	Ala	Val	Ser	Gly	Phe	Val	Ser	Asp	Gln	Asn	Met	Glu	Glu	Val
		130				135					140				
Leu	Lys	Arg	His	Glu	Asp	Ser	Leu	Lys	Thr	Leu	Phe	Leu	Gln	Thr	Trp
145				150				155						160	
Thr	His	Thr	Asn	Trp	Thr	Ala	Glu	Glu	Val	Ala	Ala	Ala	Gln	Ala	Met
			165					170						175	
Leu	Gln	Ser	Glu	Leu	Leu	Pro	Val	Asn	Asp	Leu	Cys	Leu	Phe	Thr	Ser
		180						185				190			
Ala	Val	Thr	Leu	Ser	Val	Met	Glu	Cys	Phe	Asp	Leu	Lys	Lys	Leu	Leu
		195					200				205				
Trp	Leu	Ile	Asp	Ala	Tyr	Arg	His	Pro	Asn	Val	Gln	Val	Ser	Gln	Arg
		210				215					220				
Ala	Leu	Val	Gly	Ile	Thr	Phe	Ile	Leu	His	Ala	Tyr	Ser	Pro	Arg	Ile
225				230					235					240	
Ser	Phe	Tyr	Pro	Glu	Ile	Asn	Leu	Arg	Ile	Thr	Ala	Leu	Met	Glu	Glu
			245					250						255	
Thr	Ala	Phe	Glu	Arg	Asp	Leu	Leu	Arg	Ile	His	Ile	Gln	Ile	Leu	Leu
		260						265				270			
Ser	Gln	Glu	Thr	Glu	Lys	Ile	Asp	Lys	Lys	Met	Arg	Glu	Glu	Ile	Ile
		275				280					285				
Pro	Glu	Met	Leu	Lys	Ser	Met	Ser	Pro	Met	Arg	Asn	Met	Lys	Phe	Gly
	290				295						300				
Phe	Glu	Glu	Ser	Asp	Glu	Gly	Lys	Asp	Asp	Thr	Asn	Pro	Asp	Trp	Ala
305				310				315						320	
Asp	Ala	Ile	Glu	Lys	Ser	Gly	Leu	Gly	Asp	Lys	Leu	Arg	Glu	Met	Asn
			325					330						335	
Glu	Leu	Gln	Leu	Glu	Gly	Ala	Asp	Val	Tyr	Met	Ser	Thr	Phe	Ser	Gln
		340					345						350		
Leu	Lys	Ser	Tyr	Pro	Phe	Phe	Arg	Asp	Ile	Ser	Asn	Trp	Phe	Tyr	Pro

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      355              360              365
Phe Asp Lys Gln Gln Ser Asp Val Ile Lys Glu Phe Arg His Arg Gly
370              375              380
Lys Glu Gly Gly Ser Leu Leu Glu Ile Ile Leu Gln Ser Gly Phe Phe
385              390              395              400
Cys Asn Ser Asp Lys Tyr Ser Leu Phe Phe Thr Met Gln Gln Leu Pro
405              410              415
Gln Ser Gln Arg Asp Met Met Leu Asn Gln Leu Thr Asp Gln Gln Ile
420              425              430
Glu Glu Leu Ala Asp Gln Ser Lys Ala Glu Thr Leu Lys Lys Phe Ser
435              440              445
Glu Arg Pro Asp Thr Val Ser Asn Gln Tyr Leu His Asp Leu Tyr Arg
450              455              460
Phe Phe Lys Leu Tyr Ala Arg Arg Leu Glu Phe Arg Asp Leu Phe Lys
465              470              475              480
Glu Ser Ile Cys Leu Tyr Asn Glu Pro Asp Leu Ile Asp Ile Leu Phe
485              490              495
Asn Pro Glu Ala Met Glu Ala Ile Ala Asn Phe His Phe Lys Lys Lys
500              505              510
His Trp Glu Glu Ala Ala Glu Ala Tyr Asp Thr Ile Val Asp Met Leu
515              520              525
Met Asp Glu Glu Glu Ala Glu Ile Cys Gln Lys Gln Gly Tyr Ser Leu
530              535              540
Gln Lys Leu Lys Arg Tyr Asp Glu Ala Ile Lys Ala Tyr Arg Lys Ala
545              550              555              560
Asp Ile Leu Lys Ser Asn Asn Val Trp Thr Asn His His Leu Gly Thr
565              570              575
Cys Tyr Arg Leu Asn Arg Gln Phe Lys Glu Ala Leu Lys Tyr Tyr Arg
580              585              590
Lys Val Glu Glu Val Leu Pro Glu Asp Thr Lys Val Ile Phe Tyr Ile
595              600              605
Gly Ser Cys Leu Ala Glu Met Trp Asn Phe Glu Glu Ala Leu Asn Tyr
610              615              620
Phe Phe Lys Leu Asp Phe Leu Glu Ser Asn Cys Val Lys Ala Trp Arg
625              630              635              640
Ala Ile Gly Trp Cys Ser Phe Met Ile Ala Lys Arg Glu Gln Ala Met
645              650              655
Lys Tyr Tyr Asp Lys Val Ile Asp Gln Ser Pro Met Pro Val Asp Tyr
660              665              670
Leu Asn Ala Gly His Val Ala Trp Ser Leu Gly Asn Val Glu Lys Thr
675              680              685
Leu Ser Leu Tyr Thr Lys Ala Ala Glu Leu Tyr Gly Ser Lys Glu Leu
690              695              700
Phe Leu Glu Val Phe Arg Lys Asp Glu Glu Ile Ile Thr Ser Lys Gly
705              710              715              720
Val Thr Pro Asp Asp Ile Pro Leu Val Leu Asp Leu Ile
725              730

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<210> 9714

<211> 508

<212> PRT

<213> B.fragilis

<400> 9714

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Lys Leu Met Asp Met Thr Thr Ser Ser Gln Lys Asp Ile Ile Asn Asp
1              5              10              15
Ile Leu Ser Ala Met Gln Cys Tyr Pro Glu Asn Glu Ala Phe Ile Ile
20              25              30
Asp Asp Lys His Tyr Thr Tyr Ala Gln Leu Gly Glu Ile Thr Ala Ser

```


<210> 9715
 <211> 173
 <212> PRT
 <213> B.fragilis

<400> 9715
 Thr Ile Lys Asp Met Lys Thr Ile Thr Phe Phe Lys Arg Val Leu Ala
 1 5 10 15
 Ser Ala Ala Leu Val Ser Val Cys Gly Phe Ala Cys Ala Thr Asn Asn
 20 25 30
 Gly Lys Gln Phe Ile His Asn Asp Thr Met Glu Gly Gly Lys Leu Val
 35 40 45
 Cys Arg Glu Ile Tyr Ala Met Asn Asp Ala Ala Ser Gly Ile Leu Asn
 50 55 60
 Pro Val Lys Met Tyr Lys Tyr Ser Tyr Asp Thr Asp Gln Gln Lys Thr
 65 70 75 80
 Val Lys Ser Thr Tyr Ala Trp Asn Ile Phe Lys Asn Thr Trp Glu Thr
 85 90 95
 Glu Ser Arg Thr Val Ile Ser Arg Tyr Glu Thr Glu Thr Ser Val Glu
 100 105 110
 Tyr Ser Val Trp Asn Lys Glu Lys Gly Ser Phe Asp Leu Ser Lys Lys
 115 120 125
 Tyr Ile Tyr Ile Thr Asp Asn Asn Gln Leu Ile Ala Gln Tyr Ala
 130 135 140
 Tyr Lys Met Asn Ser Arg Thr Asn Gln Trp Ile Leu Glu Lys Asp Ala
 145 150 155 160
 Leu Thr Pro Ile Tyr Glu Asn Ile Tyr Ala Thr Thr Arg
 165 170

<210> 9716
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9716
 Thr Gly Gly Cys Gln Glu His Gly Glu Tyr His Glu Ala Ile Ser Asp
 1 5 10 15
 Asp Gly Phe Met Gln Lys Glu Trp Phe Gln Ala Asp Lys Gly Phe Ala
 20 25 30
 Leu Cys Thr Leu Pro Met Asp Glu Glu Ser Tyr Gln Glu Arg Asp Asp
 35 40 45
 Glu Tyr Ile Tyr Ser Asp Leu Arg Gly Cys Glu Pro Ile Glu Cys Phe
 50 55 60
 Pro Val Gly Lys Cys Ile Glu Arg
 65 70

<210> 9717
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9717
 Pro Phe Leu Leu Phe Leu Leu Leu Tyr Glu Asp Arg Arg Gly Asp Ser
 1 5 10 15
 Gly Gly Phe Leu Leu Phe Ala Val Asn Glu Leu Lys Ile Leu Val Ala
 20 25 30
 Asn Leu Ile Leu Ile Val Asn Lys Leu Lys Trp Ile Val Phe Gly Glu
 35 40 45

Gln Phe Pro Leu Arg Ser Gly Phe Arg Ala Lys Lys
 50 55 60

<210> 9718
 <211> 285
 <212> PRT
 <213> B.fragilis

<400> 9718

Leu Trp Leu Arg Lys Thr Asp Asn Pro Leu Arg Asp Cys Leu Leu Pro
 1 5 10 15
 Ser Ala Lys Ala Ser Ala Tyr Phe Leu Pro Leu Leu Ser Asn Ala Ala
 20 25 30
 Lys Ser Ile Ala Pro Ala Glu Tyr Leu Ile Thr Glu Ala Asp Lys Glu
 35 40 45
 Arg Ile Phe Gly Glu Met Leu Glu His Leu Thr Thr Glu Ala Leu Arg
 50 55 60
 Asn Ser Phe Leu Ile Glu Phe Arg Asn Leu Glu Asn Ala Met Phe Gly
 65 70 75 80
 Tyr Lys Tyr Phe Arg Ser Asn Arg Tyr Phe Pro Val Asn Trp Leu Arg
 85 90 95
 Val Arg Asn Ser Leu His Gly Ile Glu Asn Ala Glu Gln Arg Phe Ser
 100 105 110
 Pro Ser Arg Ile Arg Gln Ile Lys Lys Gly Leu Lys Asn Gly Ala Lys
 115 120 125
 Val Asp Glu Ala Arg Thr Val Glu Glu Ile Arg Glu Phe Ser Asn Met
 130 135 140
 Leu Arg His Leu Tyr Ser Ser Arg Ile Arg Lys His Phe Pro Asn Ile
 145 150 155 160
 Ile Phe Phe Gln His Met Asp Thr Arg Leu Ile His Ser Arg Gln Ala
 165 170 175
 Lys Ile Phe Ile Val Arg Tyr Lys Asp Lys Ile Ile Gly Gly Ser Ala
 180 185 190
 Cys Ile Tyr Ser Gly Asn Asp Ala Tyr Leu Trp Phe Ser Gly Gly Met
 195 200 205
 Arg Lys Thr Tyr Ala Leu Gln Tyr Pro Gly Ile Leu Ala Val Trp Lys
 210 215 220
 Ala Leu Gln Asp Ala His Gln Asn Gly Phe Arg His Met Glu Phe Met
 225 230 235 240
 Asp Ala Gly Leu Pro Phe Lys Lys His Gly Tyr Arg Asp Phe Val Leu
 245 250 255
 Arg Phe Gly Gly Lys Gln Ser Ser Thr Arg Arg Trp Phe Arg Phe Arg
 260 265 270
 Trp Gln Trp Leu Asn Asp Leu Leu Ile Lys Ile Tyr Val
 275 280 285

<210> 9719
 <211> 246
 <212> PRT
 <213> B.fragilis

<400> 9719

Thr Gln Asp Arg Thr Trp Asn Val Gly Asp Asn Ile Ser Tyr Asn Lys
 1 5 10 15
 Asn Lys Ile Thr Lys Met Thr Phe Asn Asp Asp Pro Asn Tyr Ala Gly
 20 25 30
 Val Ile His Gly Gly Ile Asp Gly Gly Thr Gly Tyr Asn Ala Leu Ile
 35 40 45
 His Arg Val Gly Glu Ala Phe Asn Ser Phe Tyr Val Phe Glu Gln Ile

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      50              55              60
Tyr Gly Pro Asp Gly Lys Pro Ile Glu Gly Ala Tyr Val Asp Gln Asn
65              70              75              80
Gly Asp Asn Gln Ile Asn Asp Ala Asp Leu Ile Cys Phe Lys Lys Ala
      85              90              95
Ala Pro Asp Val Phe Met Gly Leu Thr Ser Gln Leu Ser Tyr Lys Asn
      100              105              110
Trp Asp Phe Ser Phe Ala Leu Arg Gly Ser Phe Gly Asn Tyr Val Tyr
      115              120              125
Asn Asn Val Gln Ser Asn Arg Glu Ala Tyr Glu Gly Ala Asn Met Tyr
      130              135              140
Asp Gln Thr Gly Phe Leu Lys Asn Arg Leu Thr Ser Ala Arg Ser Thr
      145              150              155              160
Asp Phe Lys Asn Ala Gln Tyr Arg Ser Ser Tyr Tyr Val Gln Asn Ala
      165              170              175
Ser Phe Val Arg Met Asp Asn Ile Ser Leu Gly Tyr Thr Phe Asn Lys
      180              185              190
Leu Phe Asn Asp Lys Gln Ser Ala Arg Val Tyr Ala Thr Val Gln Asn
      195              200              205
Pro Phe Val Ile Thr Lys Tyr Lys Gly Leu Asp Pro Glu Ile Ser Gly
      210              215              220
Glu Gly Ile Asp Asn Asn Ile Tyr Pro Arg Pro Arg Val Phe Met Ile
      225              230              235              240
Gly Leu Asn Leu Asn Phe
      245

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<210> 9720
<211> 97
<212> PRT
<213> B.fragilis

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<400> 9720
Lys Asp Cys Arg Thr Asp Lys Arg Glu Glu Thr Leu Lys Thr Ile Ile
1              5              10              15
Asn Met Asn Arg Glu Glu Val Leu Lys Gln Leu Gln Ser Ile Phe Arg
      20              25              30
Asn Ile Leu Lys Lys Asp Asn Val Cys Ile Asp Glu Ser Ser Thr Ser
      35              40              45
Lys Asp Val Asp Gly Trp Asp Ser Leu Thr His Met Gln Ile Ile Ala
      50              55              60
Gln Ile Glu Lys His Phe Gly Val Arg Phe Asn Phe Arg Glu Val Ile
      65              70              75              80
Lys Phe Lys Asn Val Gly Asp Leu Cys Ser Ala Leu Leu Thr Lys Met
      85              90              95
Glu

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<210> 9721
<211> 540
<212> PRT
<213> B.fragilis

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<400> 9721
Lys Arg Lys Arg Ser Ala Leu Arg Leu Met Val Lys Leu Asn Leu Pro
1              5              10              15
Thr Arg Pro Trp Val Pro Gln Trp Leu Gly Ile Val Thr Met Phe Ile
      20              25              30
Val Ile Phe Pro Ile Thr Leu Leu Asn Gly Ala Tyr Thr Gly Ser Met
      35              40              45

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Val	Glu	Val	Ser	Asn	Thr	Leu	Gly	Val	Leu	Ser	Glu	Asp	Ile	Thr	Met
50						55					60				
Ala	Tyr	Tyr	Ser	Ala	Ser	Val	Gly	Met	Ala	Val	Ala	Tyr	Pro	Ile	Val
65						70					75				80
Pro	Lys	Ile	Arg	Thr	Ile	Ala	Thr	Pro	Lys	Thr	Leu	Leu	Leu	Thr	Asp
				85						90				95	
Leu	Leu	Leu	Gln	Ile	Phe	Phe	Ser	Leu	Val	Cys	Ala	Lys	Thr	Gly	Ser
			100						105					110	
Met	Asp	Val	Ile	Met	Val	Cys	Ser	Phe	Cys	Met	Gly	Phe	Leu	Lys	Ala
		115						120				125			
Phe	Val	Met	Leu	Glu	Phe	Ile	Ile	Leu	Ile	Arg	Pro	Leu	Phe	Ser	Pro
		130						135				140			
Lys	Asn	Val	Arg	Ser	Glu	Phe	Tyr	Ala	Tyr	Phe	Tyr	Pro	Ile	Val	Phe
145					150					155					160
Ser	Gly	Gly	Gln	Leu	Ser	Met	Ala	Ile	Thr	Ala	Gln	Leu	Ala	Tyr	His
				165						170					175
Tyr	Gln	Trp	Gln	His	Met	Tyr	Tyr	Phe	Val	Thr	Ile	Leu	Leu	Leu	Ile
			180						185					190	
Ala	Ile	Leu	Phe	Val	Ile	Cys	Phe	Phe	Arg	Tyr	Ala	Arg	Arg	Pro	Met
		195						200				205			
His	Ile	Pro	Phe	Lys	Glu	Met	Asp	Gly	Arg	Ser	Met	Phe	Ile	Ile	Ala
210					215						220				
Thr	Ala	Phe	Leu	Leu	Thr	Leu	Tyr	Thr	Phe	Thr	Tyr	Gly	Lys	Thr	Leu
225					230						235				240
Asp	Trp	Phe	Ala	Ser	Pro	Lys	Ile	Arg	Val	Tyr	Val	Phe	Val	Ile	Pro
				245					250					255	
Leu	Leu	Ile	Ala	Leu	Phe	Ile	His	Arg	Gln	Arg	Thr	Gln	Gly	Lys	Pro
			260						265					270	
Phe	Val	Ser	Leu	Lys	Pro	Leu	Phe	Leu	His	Lys	Ser	Ile	Ile	Gly	Tyr
		275						280				285			
Gly	Phe	Met	Val	Leu	Ala	Met	Phe	Leu	Thr	Ala	Thr	Ser	Ser	Leu	Val
		290				295					300				
Thr	Asn	Tyr	Met	Asn	Ser	Ile	Ile	Arg	Val	Asp	Ser	Ile	His	Ala	Asn
305					310					315					320
Ser	Leu	Ser	Leu	Trp	Leu	Leu	Pro	Gly	Tyr	Val	Val	Gly	Ala	Val	Ile
			325						330					335	
Cys	Phe	Trp	Trp	Phe	Arg	Trp	Gln	Arg	Trp	Arg	Phe	Arg	Phe	Leu	Ile
		340						345					350		
Ser	Gly	Gly	Met	Phe	Cys	Tyr	Val	Ile	Tyr	Leu	Ala	Ile	Leu	Tyr	Phe
		355					360					365			
Gly	Ile	Thr	Pro	Tyr	Gly	Thr	Tyr	Glu	Met	Leu	Tyr	Leu	Pro	Ile	Leu
		370				375					380				
Phe	Arg	Gly	Val	Gly	Met	Met	Val	Ile	Phe	Ile	Ala	Phe	Gly	Val	Phe
385					390					395					400
Val	Val	Glu	Asp	Leu	Asp	Pro	Arg	Leu	Thr	Leu	Ser	Asn	Ala	Phe	Phe
				405					410					415	
Leu	Ile	Ser	Phe	Arg	Ser	Val	Leu	Ala	Pro	Val	Leu	Ser	Ala	Ser	Phe
			420					425					430		
Phe	Asn	Asn	Met	Leu	Tyr	Tyr	Leu	Gln	Ala	Lys	Gly	Met	Asn	Ile	Leu
		435					440					445			
Ser	Glu	Asn	Met	Thr	Leu	Thr	Asn	Pro	Leu	Ala	Glu	Gln	Lys	Tyr	Asn
		450				455					460				
Gln	Ala	Leu	Ser	Asn	Ala	Leu	Ala	Gln	Gly	His	Glu	Phe	Ser	Glu	Ala
465					470					475					480
Gly	Gln	Leu	Ala	Ala	Asn	Ser	Leu	Tyr	Ser	Thr	Leu	Gln	Gln	Gln	Ser
				485					490					495	
Leu	Leu	Leu	Ala	Leu	Lys	Thr	Leu	Ile	Gly	Tyr	Val	Leu	Ile	Leu	Ala
			500					505					510		
Leu	Val	Ile	Ala	Val	Ile	Ala	Ala	Phe	Ile	Pro	Phe	His	Lys	Thr	Leu

515 520 525
 Lys Val Ala Val Val Lys Thr Gly Asp Asp Met Val
 530 535 540

<210> 9722
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 9722

Ile Arg Arg Leu Gly Ile Ala Arg Ile Val Val Gly Ala Glu His Arg
 1 5 10 15
 Pro Asp Cys Phe Val Ala Trp Phe Asp Val Arg Leu Ser Ala Ala Phe
 20 25 30
 Gly Phe Ile Asp Asn Arg Arg Tyr Ile Val Phe Asp Phe Asn Thr Met
 35 40 45
 Lys Arg Ser Ile Glu Asp Thr Pro Ile Val Phe Ile Gly Ala Gly Asn
 50 55 60
 Leu Ala Thr Asn Leu Ala Lys Ala Leu Tyr Arg Lys Gly Phe Arg Ile
 65 70 75 80
 Val Gln Val Tyr Ser Arg Thr Glu Glu Ser Ala Arg Glu Leu Ala Gln
 85 90 95
 Lys Val Glu Ala Glu Tyr Thr Thr Asp Leu Ala Glu Val Asn Pro Tyr
 100 105 110
 Ala Lys Leu Tyr Ile Val Ser Leu Lys Asp Ser Ala Phe Ala Glu Leu
 115 120 125
 Leu Gln Gly Ile Val Glu Gly Lys Arg Glu Glu Ala Leu Met Val His
 130 135 140
 Thr Ala Gly Ser Ile Pro Met Asn Val Trp Glu Gly His Val Ser His
 145 150 155 160
 Tyr Gly Val Phe Tyr Pro Met Gln Thr Phe Ser Lys Gln Arg Glu Val
 165 170 175
 Asp Phe Lys Glu Ile Pro Phe Phe Ile Glu Ala Ser Ser Thr Glu Asp
 180 185 190
 Ala Ala Phe Leu Lys Ala Ile Ala Ser Thr Leu Ser Asn Arg Val Tyr
 195 200 205
 Asp Ala Asp Ser Glu Gln Arg Lys Ser Leu His Leu Ala Ala Val Phe
 210 215 220
 Thr Cys Asn Phe Thr Asn His Met Tyr Ala Leu Ala Ala Glu Leu Leu
 225 230 235 240
 Lys Lys Tyr Asn Leu Pro Phe Asp Val Met Leu Pro Leu Ile Asp Glu
 245 250 255
 Thr Ala Arg Lys Val His Glu Leu Glu Pro Lys Thr Ala Gln Thr Gly
 260 265 270
 Pro Ala Ile Arg Tyr Asp Glu Asn Val Ile Gly Asn His Leu Arg Met
 275 280 285
 Leu Ala Asp Asp Pro Ala Met Gln Arg Leu Tyr Glu Leu Leu Ser Arg
 290 295 300
 Ser Ile His Glu Arg Gln
 305 310

<210> 9723
 <211> 175
 <212> PRT
 <213> B.fragilis

<400> 9723

Ile Lys Met Ser Thr Ile Asn Tyr Asp Leu Thr Arg Ile Lys Ala Leu
 1 5 10 15

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Val Phe Asp Val Asp Gly Val Leu Ser Ala Asn Val Ile Pro Leu His
      20      25      30
Pro Ser Gly Glu Pro Met Arg Thr Val Asn Val Lys Asp Gly Tyr Ala
      35      40      45
Ile Gln Leu Ala Val Lys Lys Gly Leu Arg Ile Ala Ile Ile Thr Gly
      50      55      60
Gly Arg Ser Asp Val Val Arg Lys Arg Phe Ile Gly Leu Gly Val Ser
      65      70      75      80
Asp Leu Tyr Phe Gly Ser Ala Val Lys Ile His Asp Tyr Arg Gly Phe
      85      90      95
Arg Asp Lys His Gly Leu Thr Asp Glu Glu Ile Leu Tyr Met Gly Asp
      100     105     110
Asp Val Pro Asp Met Glu Val Met Arg Glu Cys Gly Leu Pro Cys Cys
      115     120     125
Pro Lys Asp Ala Val Pro Glu Val Lys Ala Ile Ala Arg Tyr Ile Ser
      130     135     140
Tyr Ala Asp Gly Gly Tyr Gly Cys Gly Arg Asp Val Val Glu Gln Val
      145     150     155     160
Leu Lys Ala Gln Gly Gln Trp Leu Ser Asp Asp Ala Phe Gly Trp
      165     170     175

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<210> 9724
<211> 63
<212> PRT
<213> B.fragilis

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<400> 9724
Gln Glu Ser Gly Gly Asp Asp Glu His Ala Ser Ser Val His Leu Phe
1      5      10      15
Glu Arg Asn Val His Gly Thr Pro Cys Ile Ala Glu Glu Thr Asp Asp
      20      25      30
Glu Gln Asn Gly Asp Gln Gln Glu Asp Gly Asp Lys Ile Val His Val
      35      40      45
Leu Pro Leu Val Val Ile Gly Gln Leu Ser Gly Asp Ser His Arg
      50      55      60

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<210> 9725
<211> 624
<212> PRT
<213> B.fragilis

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<400> 9725
Phe Ser Met Gly Lys Pro Gln Arg Arg Ala Arg Pro Asp Gly Asp Cys
1      5      10      15
Ile Pro Leu Arg Asn Lys Ile His Pro Leu Phe Tyr Ile Asp Ser Thr
      20      25      30
Gln Trp Ala Asn Arg Lys Ile Leu Glu Arg Ile Cys His Ala Pro Leu
      35      40      45
Arg His Gly Glu Arg Asp His Gly Asn Tyr Ser Pro Lys Ser Leu Thr
      50      55      60
Tyr Arg Ser Ile Lys Val Lys Asn Ser Phe Pro Glu Ala Ile Tyr Thr
      65      70      75      80
Phe Ile Gly Lys Thr Leu Trp His Asn Arg Arg Lys Asn Ser Ala Val
      85      90      95
Gly Asn Phe Phe Arg Ile Phe Val Thr Ser Asn His Lys Phe Thr Lys
      100     105     110
Lys Asp Thr Thr Met Lys Arg Leu Thr Ile Leu Phe Met Leu Phe Leu
      115     120     125
Thr Ser Cys Ile Leu Tyr Ala Lys Asp Arg Lys Gly Asn Asp Leu Ser

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130		135		140											
Gly	Pro	Ile	Ala	Leu	Lys	Gly	Glu	Leu	Thr	Glu	Lys	Tyr	Gln	Asn	Tyr
145					150					155					160
Thr	Lys	Gly	Thr	Pro	Val	Val	Ile	Arg	Gly	Val	Arg	Lys	Met	Arg	Ile
				165					170						175
Ser	Pro	Asp	Glu	Thr	Ala	Gly	Ile	Thr	Tyr	Ala	Val	Glu	Ile	Asp	Gly
				180					185						190
Leu	Gln	Tyr	Pro	Val	Gly	Ala	Glu	Glu	Ala	Gly	Lys	Ile	Ile	Arg	Leu
				195					200						205
Lys	Pro	Ala	Thr	Val	Leu	Glu	Tyr	Trp	Gln	Gly	Val	Tyr	Leu	Ser	Gln
				210					215						220
Gly	Met	Tyr	Asp	Tyr	Tyr	Asn	Arg	Lys	Gly	Tyr	Arg	Tyr	Lys	Met	Arg
225					230					235					240
Gln	Glu	Leu	Asp	Glu	Glu	Cys	Leu	Asp	Tyr	Leu	Asp	Lys	Leu	Asn	Glu
				245					250						255
Ile	Ala	Tyr	Lys	Asp	Ala	Tyr	Ile	Gln	Asp	Tyr	Val	Gln	Ala	Ile	Phe
				260					265						270
Ala	Lys	Val	Asn	Pro	Gly	Glu	Ile	Asp	Thr	Asn	Arg	Pro	Glu	Arg	Leu
				275					280						285
Asn	Val	Arg	Ile	Ile	Gln	Ser	Pro	Glu	Pro	Asp	Ala	Tyr	Met	Leu	Pro
				290					295						300
Asn	Gly	Ala	Met	Leu	Val	Ser	Thr	Gly	Leu	Leu	Cys	Thr	Ile	Asp	Ser
305					310					315					320
Glu	Glu	Glu	Leu	Glu	Ala	Ile	Ile	Ala	Asn	Glu	Met	Val	His	Phe	Ile
				325					330						335
Leu	Asp	His	Gln	Val	Asp	Asn	Val	Ser	Arg	Ala	Glu	Thr	Arg	Ala	Lys
				340					345						350
Arg	Ala	Ala	Phe	Trp	Ala	Asp	Val	Leu	Gly	Thr	Val	Ala	Met	Ala	Ala
				355					360						365
Asp	Asp	Thr	Asn	Trp	Met	Tyr	Gly	Tyr	Asp	Glu	Arg	Val	Gly	Ala	Ile
				370					375						380
Glu	Leu	Ala	Ala	Ser	Ile	Gly	Thr	Ile	Ala	Ala	Leu	Ile	Asn	Val	Arg
385					390					395					400
Thr	Val	Asn	Arg	Leu	Gly	Met	Asp	Tyr	Ser	Ser	Lys	Gln	Glu	Leu	Gln
				405					410						415
Ala	Asp	Arg	Ile	Ala	Arg	Asp	Tyr	Leu	Ala	Phe	Lys	Gly	Met	Asn	Pro
				420					425						430
Asn	Ala	Leu	Ser	Ser	Ala	Ile	Asn	Lys	Ile	Lys	Glu	Phe	Tyr	Gly	Ser
				435					440						445
Val	His	Arg	Tyr	Asp	Asn	Leu	Thr	Arg	Tyr	Gly	Ser	Tyr	Gly	Leu	Leu
				450					455						460
Lys	Glu	Arg	Leu	Ala	Lys	Leu	Gly	Glu	Thr	Glu	Gly	Ile	His	Ser	His
465					470					475					480
Met	Phe	Glu	Lys	Met	Thr	Ser	Asp	Ile	Val	Thr	Phe	Asn	Ala	Ala	Met
				485					490						495
Tyr	Gln	Gly	Asp	Lys	Arg	Tyr	Lys	Met	Ala	Glu	Gln	Leu	Ala	Gln	Lys
				500					505						510
Asn	Ile	Asp	Asn	Arg	Val	Ala	Ser	Asp	His	Asp	Tyr	Val	Ile	Leu	Val
				515					520						525
Lys	Ala	Arg	Met	Ala	Gln	Glu	Asn	Thr	Pro	Glu	Ser	Asn	Glu	Ala	Cys
				530					535						540
Met	Lys	Leu	Leu	Glu	Lys	Ala	Arg	Glu	Ile	Ala	Thr	Ala	Arg	Asn	Leu
545					550					555					560
Asp	Ile	Asn	Lys	Gln	Glu	Ile	Leu	Leu	Leu	Met	Arg	Met	Asn	Lys	Gln
				565					570						575
Ala	Lys	Ala	Ala	Asp	Lys	Leu	Lys	Glu	Tyr	Leu	Asp	Leu	Leu	Ala	Glu
				580					585						590
Tyr	Lys	Gln	Gln	Asn	Asp	Met	Asn	Thr	Gln	Glu	Ser	Glu	Trp	Ile	Gly
				595					600						605

Glu Glu Leu Asp Trp Ala Ser Lys Met Leu Ser Lys Ile Ser Leu Leu
 610 615 620

<210> 9726
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9726
 Cys Thr Phe Phe Ile Asn Gln Ser Asp His Arg Phe Ile Val Ile Val
 1 5 10 15
 Cys His Cys Phe Leu Asn Gly Gly Gly Val Leu Gly Ser Gln His Tyr
 20 25 30
 Ala Glu Ala Gln Ile Glu Glu Glu Tyr Pro Met Phe His Glu Gly Ile
 35 40 45
 Asp Ser Ile Val Ser Asp Phe Leu Thr Val Phe Leu Leu
 50 55 60

<210> 9727
 <211> 620
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (367), (382)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9727
 Arg Ala Asn Ile Met Lys Lys Leu Leu Leu Leu Gly Ser Phe Leu
 1 5 10 15
 Leu Ser Leu Thr Thr Tyr Ala Ala Met Asn Ile Ser Lys Ile Asp Pro
 20 25 30
 Pro Phe Trp Phe Thr Gly Met Asn Asn Pro Glu Leu Gln Leu Met Val
 35 40 45
 Tyr Gly Glu Gly Ile Gly Gln Ala Ser Val Ser Val Asn Tyr Pro Gly
 50 55 60
 Val Ser Leu Ser Ser Val Val Lys Leu Glu Ser Asn Asn Tyr Leu Leu
 65 70 75 80
 Val Tyr Leu His Leu Asp Lys Glu Val Lys Pro Gly Lys Met Pro Ile
 85 90 95
 Thr Phe Thr Val Gly Lys Lys Lys Leu Val Lys Glu Tyr Glu Leu Lys
 100 105 110
 Ala Arg Ser Lys Ala Gly Val Asp His Lys Gly Phe Asp Ala Ser Asp
 115 120 125
 Ala Leu Tyr Leu Leu Met Pro Asp Arg Phe Ala Asn Gly Asn Pro Asp
 130 135 140
 Asn Asp Arg Ile Glu Gly Met Ala Glu Tyr Lys Val Asp Arg Asn Asp
 145 150 155 160
 Pro Asn Ala Arg His Gly Gly Asp Leu Ala Gly Ile Glu Gln Asn Leu
 165 170 175
 Asp Tyr Phe Thr Asp Leu Gly Val Thr Ala Leu Trp Phe Thr Pro Val
 180 185 190
 Leu Glu Asn Asn Met Lys Gly Gly Ser Tyr His Gly Tyr Ala Thr Thr
 195 200 205
 Asp Tyr Tyr Lys Val Asp Pro Arg Phe Gly Thr Asn Glu Glu Tyr Arg
 210 215 220
 Ser Leu Ile Ala Lys Ala His Asn Arg Gly Ile Lys Val Val Met Asp
 225 230 235 240

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Met Ile Phe Asn His Cys Gly Val Glu His Pro Trp Ile Lys Asp Met
      245      250      255
Pro Ser Lys Asp Trp Phe Asn His Ala Asp Phe Lys Asn Asn Phe Val
      260      265      270
Gln Thr Ser Tyr Lys Leu Thr Pro His Val Asp Pro Tyr Ala Ser Glu
      275      280      285
Tyr Asp Phe Asp Gln Met Asn Asn Gly Trp Phe Val Glu Ala Met Pro
      290      295      300
Asp Leu Asn Gln Lys Asn Pro His Val Tyr Lys Tyr Leu Leu Gln Asn
      305      310      315      320
Ser Leu Trp Trp Ile Glu Tyr Ala Asp Ile Asp Gly Ile Arg Met Asp
      325      330      335
Thr Tyr Pro Tyr Ala Asp Tyr Asp Ala Met Ser Asn Trp Met Lys Glu
      340      345      350
Leu Asn Glu Asp Thr Pro Thr Thr Thr Arg Trp Ala Lys Pro Xaa Leu
      355      360      365
Pro Lys Pro Pro Ile Gln Pro Gly Gly Arg Lys Glu Leu Xaa Asn Phe
      370      375      380
Arg Pro Gly Asn Lys Tyr Leu Lys Thr Ser Met Asn Phe Asn Phe Ser
      385      390      395      400
Asp Lys Val Asn Thr Ala Lys Asn Glu Gln Thr Asp Thr Trp Phe Lys
      405      410      415
Gly Trp Asn Arg Val Tyr Asn Asn Phe Val Tyr Asp Tyr Leu Tyr Pro
      420      425      430
Asn Pro Ala Ser Val Leu Ala Phe Ile Glu Asn His Asp Thr Asp Arg
      435      440      445
Phe Leu Gly Glu Gly Glu Asn Leu Asp Met Leu Lys Gln Ala Ser Thr
      450      455      460
Leu Leu Leu Thr Thr Arg Arg Ile Pro Gln Leu Tyr Tyr Gly Thr Glu
      465      470      475      480
Val Met Met Asn Gly Val Lys Ser Lys Ser Asp Gly Tyr Val Arg Lys
      485      490      495
Asp Phe Pro Gly Gly Trp Thr Asp Asp Lys Glu Asn Ala Leu Thr Pro
      500      505      510
Glu Gly Arg Thr Arg Leu Gln Asn Glu Ser Tyr Asn Phe Tyr Arg Asn
      515      520      525
Leu Leu Asn Trp Arg Lys Gly Asn Asp Val Ile Ala Lys Gly Ser Met
      530      535      540
Lys Gln Phe Met Val Gln His Gly Val Tyr Ala Tyr Ala Arg Gln Tyr
      545      550      555      560
Lys Gly Lys Thr Val Phe Val Leu Leu Asn Gly Thr Asp Lys Glu Val
      565      570      575
Lys Leu Pro Leu Lys Tyr Tyr Ala Glu Val Leu Lys Asp Lys Thr Gln
      580      585      590
Gly Lys Asp Val Ile Ser Gly Lys Val Thr Ala Leu Asn Glu Glu Leu
      595      600      605
Thr Met Ala Pro Arg Gln Ser Met Val Ile Glu Leu
      610      615      620

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<210> 9728

<211> 88

<212> PRT

<213> B.fragilis

<400> 9728

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Lys Thr Asn Ile Lys Met Lys Lys Gly Leu His Pro Glu Ser Tyr Arg
1      5      10      15
Pro Val Val Phe Lys Asp Met Ser Asn Gly Asp Met Phe Leu Ser Lys
      20      25      30

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Ser Thr Val Ala Thr Lys Glu Thr Ile Glu Phe Glu Gly Glu Thr Tyr
 35 40 45
 Pro Leu Leu Lys Ile Glu Ile Ser Asn Thr Ser His Pro Phe Tyr Thr
 50 55 60
 Gly Lys Ser Thr Leu Val Asp Thr Ala Gly Arg Val Asp Lys Phe Met
 65 70 75 80
 Ser Arg Tyr Gly Asn Arg Lys Lys
 85

<210> 9729

<211> 190

<212> PRT

<213> B.fragilis

<400> 9729

Ile Ile Cys Ile Met Lys Phe Ile Arg Lys Phe Pro Val Thr Asp Ala
 1 5 10 15
 Asp Ser Leu Glu Ser Pro Gln Lys Phe Glu Gly Phe Phe Leu Asp Tyr
 20 25 30
 Tyr Pro Arg Val Lys Gly Phe Ile Asn Gly Leu Leu Gln Asp Ala Glu
 35 40 45
 Glu Ala Glu Asp Leu Ser Gln Asp Ile Phe Met Ser Leu Trp Gln Asn
 50 55 60
 Arg Gly Asn Leu Lys Gln Ile Asp Asn Leu Asp Ala Tyr Leu Phe Arg
 65 70 75 80
 Ile Ala Arg Asn Ala Val Phe Arg Tyr Ile Glu Arg Ser Leu Leu Phe
 85 90 95
 Lys Asn Tyr Gln Ser Arg Gln Leu Ser Asp Asp Asn Ser Asp Leu Tyr
 100 105 110
 Glu Ile Glu Ser Glu Leu Asn Ala Lys Glu Leu Glu Leu Ile Ile Ala
 115 120 125
 Ile Ala Val Glu Arg Met Pro Ser Gln Arg Arg Lys Ile Tyr Gln Met
 130 135 140
 Ser Arg Glu Gln Gly Leu Ser Asn Glu Asn Ile Ala Arg Glu Leu Asn
 145 150 155 160
 Ile Ser Lys Arg Thr Val Glu Asn His Leu Thr Gln Ala Leu Ala Asp
 165 170 175
 Ile Arg Lys Ile Leu Phe Trp Val Ile Met Ala Thr Phe Val
 180 185 190

<210> 9730

<211> 283

<212> PRT

<213> B.fragilis

<400> 9730

Asn Leu Ser Ile Met Lys Arg Phe Leu Val Leu Ser Cys Ser Val Ala
 1 5 10 15
 Ile Ser Ala Leu Phe Phe His Ala Cys Ser Ser Ser Asp Asp Ser Met
 20 25 30
 Ile Asp Ala Pro Leu Thr Arg Ala Asp Ala Val Ser Glu Lys Ile Val
 35 40 45
 Phe Gln Asp Asp Phe Asn Gln Ala Asp Ser Ile Pro Asp Arg Asn Lys
 50 55 60
 Trp Ser Leu Cys Lys Lys Gly Ser Pro Ala Trp Ser Lys Tyr Leu Ser
 65 70 75 80
 Glu Ser Tyr Asp Gln Ala Tyr Val His Asp Gly Lys Leu Val Leu Val
 85 90 95
 Ala Glu Lys Val Asn Gly Val Tyr Lys Thr Gly Gly Val Gln Ser Leu

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<210> 9731
<211> 520
<212> PRT
<213> B.fragilis
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Glu	Lys	Leu	Met	Ser	Asn	Gln	Leu	Glu	Lys	Val	Lys	Glu	Leu	Ile	Glu
1				5					10					15	
Leu	Arg	Ala	Gln	Ala	Arg	Leu	Gly	Gly	Gly	Glu	Lys	Ala	Ile	Glu	Lys
			20					25					30		
Gln	His	Ala	Lys	Gly	Lys	Tyr	Thr	Ala	Arg	Glu	Arg	Ile	Ala	Gln	Leu
			35				40					45			
Leu	Asp	Glu	Gly	Ser	Phe	Glu	Glu	Leu	Asp	Met	Phe	Val	Gln	His	Arg
	50					55				60					
Cys	Thr	Asn	Phe	Gly	Gln	Glu	Lys	Lys	His	Phe	Leu	Gly	Asp	Gly	Val
65					70					75				80	
Val	Thr	Gly	Tyr	Gly	Thr	Ile	Glu	Gly	Arg	Leu	Val	Tyr	Val	Phe	Ala
				85					90					95	
Gln	Asp	Phe	Thr	Val	Phe	Gly	Gly	Ser	Leu	Ser	Glu	Thr	Met	Ala	Gln
			100					105					110		
Lys	Ile	Cys	Lys	Val	Met	Asp	Met	Ala	Met	Lys	Met	Gly	Ala	Pro	Val
		115					120					125			
Ile	Gly	Ile	Asn	Asp	Ser	Gly	Gly	Ala	Arg	Ile	Gln	Glu	Gly	Ile	Asn
	130					135					140				
Ala	Leu	Ser	Gly	Tyr	Ala	Glu	Ile	Phe	Gln	Arg	Asn	Ile	Met	Ala	Ser
145					150					155				160	
Gly	Val	Ile	Pro	Gln	Ile	Ser	Gly	Ile	Phe	Gly	Pro	Cys	Ala	Gly	Gly
				165					170					175	
Ala	Val	Tyr	Ser	Pro	Ala	Leu	Thr	Asp	Phe	Thr	Leu	Met	Thr	Glu	Gly
			180					185					190		
Thr	Ser	Tyr	Met	Phe	Leu	Thr	Gly	Pro	Ala	Val	Val	Lys	Thr	Val	Thr
		195					200					205			
Gly	Glu	Asp	Val	Ser	Gln	Glu	Asp	Leu	Gly	Gly	Ala	Ser	Val	His	Ala
	210					215					220				
Ser	Lys	Ser	Gly	Val	Thr	His	Phe	Thr	Ala	Glu	Thr	Gly	Glu	Glu	Gly


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225          230          235          240
Leu Ala Ile Ile Arg Lys Leu Leu Ser Phe Ile Pro Gln Asn Asn Leu
          245          250          255
Glu Glu Ala Pro Leu Val Asn Cys Thr Asp Pro Ile Asp Arg Met Asp
          260          265          270
Asp Leu Leu Asn Glu Ile Ile Pro Asp Ser Pro Asn Lys Pro Tyr Asp
          275          280          285
Met Tyr Glu Val Ile Gly Ala Ile Ile Asp Asn Gly Glu Phe Leu Glu
          290          295          300
Val Gln Lys Asp Tyr Ala Lys Asn Leu Ile Ile Gly Phe Ala Arg Met
305          310          315          320
Asn Gly Gln Ser Val Gly Val Val Ala Asn Gln Pro Lys Tyr Leu Ala
          325          330          335
Gly Val Leu Asp Ser Asn Ala Ser Arg Lys Gly Ala Arg Phe Val Arg
          340          345          350
Phe Cys Asp Ala Phe Asn Ile Pro Leu Val Thr Leu Val Asp Val Pro
          355          360          365
Gly Phe Leu Pro Gly Thr Gly Gln Glu Tyr Asn Gly Val Ile Leu His
          370          375          380
Gly Ala Lys Leu Leu Tyr Ala Tyr Gly Glu Ala Thr Val Pro Lys Val
385          390          395          400
Thr Val Thr Leu Arg Lys Ser Tyr Gly Gly Ser His Ile Val Met Ser
          405          410          415
Cys Lys Gln Leu Arg Gly Asp Met Asn Tyr Ala Trp Pro Thr Ala Glu
          420          425          430
Ile Ala Val Met Gly Gly Ala Gly Ala Val Ala Val Leu Tyr Ala Lys
          435          440          445
Glu Ala Lys Asp Gln Glu Asn Pro Ala Gln Phe Leu Ala Asp Lys Glu
          450          455          460
Ala Glu Tyr Thr Lys Leu Phe Ala Asn Pro Tyr Asn Ala Ala Lys Tyr
465          470          475          480
Gly Tyr Ile Asp Asp Val Ile Glu Pro Arg Asn Thr Arg Phe Arg Val
          485          490          495
Ile Arg Ala Leu Gln Gln Leu Gln Thr Lys Lys Leu Thr Asn Pro Ala
          500          505          510
Lys Lys His Gly Asn Ile Pro Leu
          515          520

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<210> 9732

<211> 146

<212> PRT

<213> B.fragilis

<400> 9732

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Asn Glu Ala Met Lys Gln Tyr Lys Tyr Lys Ile Asn Gly Asn Leu Tyr
1          5          10          15
Asn Val Thr Val Asn Asp Val Glu Asp Asn Ile Ala Asn Val Glu Val
          20          25          30
Asn Gly Thr Ser Tyr Lys Val Glu Leu Asp Lys Pro Val Lys Ala Ala
          35          40          45
Pro Lys Pro Val Thr Arg Pro Ala Ala Ala Pro Lys Thr Glu Thr Gly
          50          55          60
Ala Pro Val Val Thr Lys Gln Pro Thr Ala Ser Lys Lys Asp Gly Val
65          70          75          80
Lys Ser Pro Leu Pro Gly Val Ile Leu Asp Ile Lys Val Lys Glu Gly
          85          90          95
Asp Thr Val Lys Arg Gly Gln Thr Ile Ile Ile Leu Glu Ala Met Lys
          100          105          110
Met Glu Asn Asn Ile Asn Ala Asn Lys Asp Gly Lys Val Ala Glu Ile

```

115 120 125
 Lys Val Asn Lys Gly Asp Ser Val Leu Glu Gly Thr Asp Leu Val Ile
 130 135 140
 Ile Glu
 145

<210> 9733

<211> 352

<212> PRT

<213> B.fragilis

<400> 9733

Pro Lys Pro Phe Thr Arg Met Leu His His Ser Ser Arg Ile Ser Pro
 1 5 10 15
 Lys Thr Arg Phe Cys Leu Lys Leu Leu Leu Leu Ile Leu Pro Leu Ile
 20 25 30
 Pro Ile Val Val Val Tyr Phe Met Phe Asp Pro Tyr Arg Val Leu His
 35 40 45
 Pro Tyr Lys Arg Phe Asp Asp Ser Pro Met Leu Leu Asn Glu Ala His
 50 55 60
 Val Gly Trp Gln Asn Tyr Leu Gln Asn Arg Asp Ser Ile Ala Tyr Asn
 65 70 75 80
 Ser Phe Ile Leu Gly Asn Ser Cys Thr Met Ala Phe Leu Thr Gly Glu
 85 90 95
 Trp Glu Lys Tyr Leu Asp Lys Asn Asp His Ala Val Arg Phe Tyr Asp
 100 105 110
 Asn Gly Glu Ser Leu Gly Gly Val Arg Gln Lys Leu Gln Leu Leu Asp
 115 120 125
 Ser Val Gly Ala Pro Leu Lys Asn Ile Leu Ile Val Leu Asp Lys Lys
 130 135 140
 Ser Leu Asp Lys Asn Ala Pro Leu Ser Gly Asn Asn His Leu Phe Ser
 145 150 155 160
 Ala Glu Ala Ala Gly Ile Ser Gln Leu Gly Phe Gln Leu Arg Phe Leu
 165 170 175
 Gln Glu Phe Leu Tyr Pro Asp Arg Met Ile Pro Tyr Ile Asp Tyr Leu
 180 185 190
 Ile Arg His Lys Tyr Ala Pro Tyr Met Lys Gly Val Ile Asn Pro Gly
 195 200 205
 Asp Pro Val Arg Glu Pro Tyr Thr Asn Asn Phe Ile Asn Pro Arg Glu
 210 215 220
 Lys Glu Ile Ala Gln Asp Gly Glu Ile Tyr Trp Ser Arg His Glu Lys
 225 230 235 240
 Glu Phe Lys Lys Arg Thr Asn Ala Gly Met Glu Glu Leu Pro Val Ile
 245 250 255
 Phe Ala Ser Gln Ile Gln Val Leu Arg Ser Ile Lys Lys Ile Cys Asp
 260 265 270
 Lys His His Thr Asn Leu Lys Phe Val Ile Gly Pro Asp Tyr Tyr Gln
 275 280 285
 Lys Lys Ala Ser Arg Glu Asp Ile Lys Ile Leu Lys Ala Ile Leu Gly
 290 295 300
 Asp Ser Ala Val Trp Asp Phe Thr Gly Ile Asn Glu Tyr Thr Ala Asp
 305 310 315 320
 Ile His His Tyr Tyr Glu Pro Gly His Tyr Arg Pro Leu Leu Gly Ala
 325 330 335
 Arg Leu Leu Lys Ala Ile Tyr Gln Asp Gln Asp Thr Cys His Arg Gln
 340 345 350

<210> 9734

<211> 538

<212> PRT

<213> B.fragilis

<400> 9734

Lys Gln Arg Ile Lys Ile Met Lys Lys Ile Tyr Phe Tyr Thr Leu Leu
 1 5 10 15
 Leu Gly Leu Leu Ala Phe Thr Ala Cys Glu Asp Glu Lys Ser Pro Val
 20 25 30
 Met Glu Leu Gln Lys Ala Ser Ala Phe Glu Pro Phe Ser Gln Ser Asp
 35 40 45
 Phe Thr Phe Asn Asp Glu Asn Ala Ala Ala Glu Phe Pro Glu Ile Lys
 50 55 60
 Trp Thr Ala Ala Asp Tyr Gly Val Lys Ala Val Val Asn Tyr Asp Val
 65 70 75 80
 Thr Leu Thr Asn Asp Ala Asn Ala Lys Thr Val Leu Leu Gly Glu Thr
 85 90 95
 Gly Thr Thr Ser Leu Lys Phe Thr Asn Gly Gln Met Asn Thr Met Met
 100 105 110
 Ala Lys Val Gly Ala Tyr Pro Gly Gln Thr Tyr Asn Phe Thr Ile Thr
 115 120 125
 Leu Thr Ser Lys Ala Tyr Asp Met Thr Ala Asp Pro Ala Ser Asn Ser
 130 135 140
 Ile Thr Phe Lys Ala Thr Leu Phe Asp Pro Asn Ala Val Asp Trp Lys
 145 150 155 160
 Phe Ala Tyr Val Ala Val Gly Tyr Pro Asp Trp Asp Tyr Thr Asn Ala
 165 170 175
 Tyr Leu Leu Gly Asp Pro Asp Gly Asp Gly Val Tyr Gln Gly Tyr Ala
 180 185 190
 Asn Phe Asp Ala Asp Gly Val Ser Tyr Ala Ile Ile Asp Gly Ser Asp
 195 200 205
 Leu Thr Lys Ile Leu Ala Lys Asp Gln Thr Ala Ala Lys Lys Gly Phe
 210 215 220
 Tyr Gly Ile Lys Val Asp Ala Glu Gly Lys Val Glu Gln Thr Glu Pro
 225 230 235 240
 Leu Val Trp Gly Val Val Gly Asp Ala Thr Ser Gly Gly Trp Asp Lys
 245 250 255
 Asp Thr Gln Met Asp Tyr Asp Ala Thr Thr Arg Leu Trp Thr Val Thr
 260 265 270
 Thr Ser Leu Leu Asp Lys Glu Phe Lys Phe Arg Ser Asn Asn Asn Trp
 275 280 285
 Asp Ser Asp Asn Tyr Gly Ala Val Ser Gly Lys Glu Ser Glu Leu Glu
 290 295 300
 Gly Glu Leu Val Ala Gly Pro Asn Asn Phe Lys Val Leu Lys Ala Ser
 305 310 315 320
 Pro Tyr Val Ile Thr Met Asn Leu Thr Asn Ala Gly Lys Tyr Ser Tyr
 325 330 335
 Ser Met Val Glu Thr Thr Ile Glu Leu Ser Ser Ala Glu Met Ala Leu
 340 345 350
 Pro Gly Ser Tyr Gln Gly Trp Asp Ala Thr Lys Asp Asp Cys Tyr Lys
 355 360 365
 Val Gln Ser Ala Ala Arg Asp Phe Ile Tyr Thr Gly Thr Phe Tyr Phe
 370 375 380
 Asp Ala Asp Thr Lys Phe Lys Phe Trp Asp Ala Gly Val Trp Ile Gly
 385 390 395 400
 Met Met Gly Pro Ile Ser Trp Asp Glu Ala Lys Asn Ile Gly Thr Phe
 405 410 415
 Val Leu Met Pro Ser Asp Gly Asp Asn Ile Lys Ile Glu Thr Ala Gly
 420 425 430
 Tyr Tyr Arg Val Gly Ala Asp Met Lys Lys Leu Thr Ala Ser Leu Thr

435 440 445
 Lys Thr Gly Trp Glu Ile Ile Gly Asp Ala Thr Pro Gly Gly Trp Asp
 450 455 460
 Lys Gly Thr Val Met Asn Tyr Asp Pro Ala Thr Lys Leu Trp Ser Val
 465 470 475 480
 Asp Val Thr Leu Val Ala Gly Glu Ile Lys Phe Arg Trp Asp Gly Ala
 485 490 495
 Trp Thr Val Asn Leu Gly Gly Ser Leu Gly Ala Leu Thr Gln Asp Gly
 500 505 510
 Ala Asn Met Lys Val Thr Ala Gly Ala Tyr Thr Ile Val Leu Asn Pro
 515 520 525
 Asp Ala Lys Thr Ala Thr Met Thr Lys Lys
 530 535

<210> 9735

<211> 210

<212> PRT

<213> B.fragilis

<400> 9735

Cys Phe Arg Met Val Ile Ser Ser Ile Tyr Leu Ile Tyr Leu Phe Ile
 1 5 10 15
 Ser Met Leu Ala Asn Leu Asp Arg Tyr Lys Ile Val Leu Ala Ser Asn
 20 25 30
 Ser Pro Arg Arg Lys Glu Leu Met Thr Gly Leu Gly Val Asp Tyr Val
 35 40 45
 Val Lys Thr Leu Pro Asp Val Asp Glu Ser Tyr Pro Asp Thr Leu Gln
 50 55 60
 Gly Glu Glu Ile Pro Leu Phe Ile Ala Arg Glu Lys Ala Ala Tyr
 65 70 75 80
 Gln Ser Met Ile Gly Pro Glu Glu Leu Leu Ile Thr Ala Asp Thr Ile
 85 90 95
 Val Trp His Glu Gly Lys Ala Leu Gly Lys Pro Val Gly Arg Gln Asp
 100 105 110
 Ala Ile Glu Met Leu Arg Ser Leu Ser Gly Lys Ser His Gln Val Ile
 115 120 125
 Thr Gly Val Cys Leu Thr Thr Arg Glu Trp Gln Lys Cys Phe Ala Ala
 130 135 140
 Val Thr Asp Val Arg Phe Ala Ile Leu Asp Glu Asp Glu Ile Ala Tyr
 145 150 155 160
 Tyr Val Asp His Tyr Gln Pro Met Asp Lys Ala Gly Ser Tyr Gly Val
 165 170 175
 Gln Glu Trp Ile Gly Phe Val Gly Val Glu Ser Ile Ser Gly Ser Tyr
 180 185 190
 Phe Asn Val Met Gly Leu Pro Ile Gln Lys Leu Tyr Arg Glu Leu Lys
 195 200 205
 Gln Leu
 210

<210> 9736

<211> 200

<212> PRT

<213> B.fragilis

<400> 9736

Ser Ser Arg Ile Ser His Ile Asp Gly Gly Ile Gly Val Ile Gln Pro
 1 5 10 15
 Val Lys Glu Lys Ile Ile Leu Gly Ile Asp Pro Gly Thr Thr Ile Met
 20 25 30

Gly Tyr Gly Val Leu Arg Val Cys Gly Thr Arg Pro Glu Met Ile Ala
 35 40 45
 Met Gly Ile Ile Asp Leu Arg Lys Phe Gly Asn His Tyr Leu Lys Leu
 50 55 60
 Arg His Ile His Glu Arg Val Leu Ser Ile Ile Glu Ser Tyr Leu Pro
 65 70 75 80
 Asp Glu Leu Ala Ile Glu Ala Pro Phe Phe Gly Lys Asn Val Gln Ser
 85 90 95
 Met Leu Lys Leu Gly Arg Ala Gln Gly Val Ala Met Ala Ala Ala Leu
 100 105 110
 Ser Arg Asp Ile Pro Ile Thr Glu Tyr Ala Pro Leu Lys Ile Lys Met
 115 120 125
 Ala Ile Thr Gly Asn Gly Gln Ala Ser Lys Glu Gln Val Ala Asp Met
 130 135 140
 Leu Gln Arg Met Leu His Phe Ala Lys Glu Asp Met Pro Val Phe Met
 145 150 155 160
 Asp Ala Thr Asp Gly Leu Ala Ala Ala Tyr Cys His Phe Leu Gln Met
 165 170 175
 Gly Arg Pro Val Met Glu Lys Gly Tyr Ser Gly Trp Lys Asp Phe Ile
 180 185 190
 Ala Lys Asn Pro Glu Arg Val Lys
 195 200

<210> 9737

<211> 118

<212> PRT

<213> B.fragilis

<400> 9737

Lys Phe Ile Val Ser Glu Leu Lys Ile Leu Cys Lys Ser Lys Asn Asn
 1 5 10 15
 Pro Leu Asn Arg Glu Thr Leu Gly Arg Lys Tyr Pro Phe Glu Glu Arg
 20 25 30
 Asn Ser Ile Leu Phe Gln Ile Ile Ser His Pro Leu Arg Ala Val Cys
 35 40 45
 Asn Val Tyr Val Ala Asn Lys Gly Phe Leu Leu Phe Pro His Ile Tyr
 50 55 60
 Asn Gly Arg Gln Met Ile Ala Val Thr Ile Gln Pro His Ser Ala Thr
 65 70 75 80
 Ile Cys Thr Gln Gly Cys Thr Leu Ile Phe Thr Ile Leu Leu Lys Gln
 85 90 95
 Val Ile Ala His Glu Asn Phe Ile Val Ile Ile Phe Gln Ser Phe Cys
 100 105 110
 Cys Leu Lys Gln Ser Gly
 115

<210> 9738

<211> 308

<212> PRT

<213> B.fragilis

<400> 9738

Thr Ser Ile Val Met Asn Lys Lys Arg Ile Gly Ile Phe Ile Ala Leu
 1 5 10 15
 Leu Ala Met Val Cys Met Gly Leu Arg Ala Gln Ser Ala Thr Ser Leu
 20 25 30
 Arg Ile Asn Glu Val Leu Val Val Asn Asp Gln Asn Tyr Gln Asp Asp
 35 40 45
 Tyr Gly Leu His Asn Ala Trp Ile Glu Ile Phe Asn Thr Ser Phe Ala

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      50              55              60
Ser Val Asn Leu Glu Gly Cys Phe Leu Thr Asn Asp Lys Asn Asn Pro
65              70              75              80
Thr Lys Tyr Pro Ile Pro Lys Gly Asp Val Leu Thr Leu Ile Lys Pro
      85              90              95
Arg Gln His Ala Leu Phe Trp Ala Asp Gly Met Pro Asn Arg Gly Thr
      100              105              110
Phe His Val Asn Phe Thr Leu Asp Pro Asn Lys Glu Asn Tyr Ile Ala
      115              120              125
Leu Tyr Asp Ser Asn Gly Lys Thr Leu Ile Asp Glu Val Thr Ile Pro
      130              135              140
Ala Gly Gln Leu Ala Asp Arg Ser Tyr Ala Arg Glu Lys Asp Gly Ser
145              150              155              160
Ala Asn Trp Val Val Lys Gly Glu Gly Glu His Ser Tyr Val Thr Pro
      165              170              175
Ser Thr Asn Asn Met Thr Ile Asp Lys Asn Pro Lys Ile Glu Asn Phe
      180              185              190
Lys Lys His Asp Ser Ile Gly Ile Gly Met Ala Ile Ile Ala Met Ser
      195              200              205
Val Val Phe Ile Gly Leu Val Leu Leu Tyr Leu Ser Phe Lys Ala Val
      210              215              220
Gly Asn Val Ala Val Arg Leu Gly Lys Lys Asn Ala Met Lys Ala Thr
225              230              235              240
Gly Ile Thr Asp Lys Thr Glu Ala Lys Glu Lys Asn Leu Gly Ser His
      245              250              255
Thr Gly Glu Glu Thr Ala Ala Ile Ala Met Ala Leu His Glu Tyr Leu
      260              265              270
Asn Asp Ala His Asp Val Glu Asp Met Ile Leu Thr Ile Asn Lys Val
      275              280              285
Lys Arg Thr Tyr Ser Pro Trp Ser Ser Lys Ile Tyr Thr Leu Arg Gln
      290              295              300
Thr Pro Lys Arg
305

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<210> 9739

<211> 104

<212> PRT

<213> B.fragilis

<400> 9739

```

Ser Ala Phe Ser Cys Ile Leu Ile Val Thr Glu Ala Ser Pro Ala Val
1              5              10              15
Pro Glu Asn Gly Asp Thr Val His Gln Ser Ala Ala Leu Arg Val Ser
      20              25              30
Val Ser Val Val Ser Glu Ile Arg His Gly Arg Pro Asp Glu Asn Asp
      35              40              45
Arg Phe Arg Val Pro Glu Val Ala Ala Lys Ser Met Pro Cys Ser Lys
      50              55              60
Lys Ile Ser Leu Ser Glu Glu Arg Ile Arg Glu Ser Val Ser Phe Ser
65              70              75              80
Ser Asp Glu Gln Pro Lys Pro Ile Ser Gly Ser Arg Arg Asn Arg Asn
      85              90              95
Gly Lys Val Lys Tyr Phe Ile Asp
      100

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<210> 9740

<211> 363

<212> PRT

<213> B.fragilis

<400> 9740

```

Arg Phe Ile Ser Leu Glu Ile Glu Glu Ser Val Leu Ile Arg Val Ile
1      5      10      15
Cys Gly Glu Leu Lys Asn Lys Tyr Met Lys Lys Leu Ile Ile Ala Phe
20      25      30
Asn Phe Leu Leu Leu Ala Val Gly Gly Arg Ala Gln Asp His Ala
35      40      45
Asp Gly Leu Tyr Ser Val Ala Phe Tyr Asn Leu Glu Asn Leu Phe Asp
50      55      60
Thr Ile His Asp Thr Gly Lys Asn Asp Tyr Glu Tyr Leu Pro Asp Ala
65      70      75      80
Ala Lys Gly Trp Asn Ser Glu Lys Tyr Cys Ser Lys Leu Lys Asn Leu
85      90      95
Ser Lys Val Leu Gly Glu Leu Ser Arg Asp Lys Val Pro Ala Gly Pro
100     105     110
Ala Ala Ile Gly Val Ala Glu Val Glu Asn Trp Arg Val Leu Asp Asp
115     120     125
Leu Ile Arg Gln Pro Glu Leu Ala Ala Gly Gly Tyr Arg Tyr Ile His
130     135     140
Tyr Glu Gly Pro Asp Lys Arg Gly Ile Asp Cys Ala Leu Leu Tyr Asp
145     150     155     160
Pro Lys Gln Phe Thr Pro His Ala Thr Ala Leu Val Leu Ser Thr Pro
165     170     175
Phe Glu Gly Asp Thr Ile His Lys Thr Arg Gly Phe Leu Ile Val Gly
180     185     190
Gly Glu Leu Ala Gly Asp Lys Val Cys Leu Ile Val Asn His Trp Pro
195     200     205
Ser Arg Gly Ala Ala Glu Pro Val Arg Val His Ala Ala Met Gln Val
210     215     220
Lys Ala Leu Lys Asp Ser Leu Met Arg Thr Asp Pro Asp Leu Lys Leu
225     230     235     240
Ile Ile Met Gly Asp Leu Asn Asp Asp Pro Met Asp Leu Ser Leu Ala
245     250     255
Val Leu Gly Ala Lys Lys His Val Glu Asp Met Thr Glu Asp Asp Leu
260     265     270
Tyr Asn Pro Trp Trp Val Thr Leu Glu Asp Lys Gly Val Gly Thr Leu
275     280     285
Leu Tyr Arg Gly Lys Trp Asn Leu Phe Asp Gln Ile Ile Leu Ser Ser
290     295     300
Thr Leu Leu Gln Ala Thr Lys Gly Leu Lys Tyr Asp His Asn Glu Val
305     310     315     320
Phe Met Arg Asp Tyr Leu Phe Gln Gln Asp Gly Lys Tyr Lys Gly Ala
325     330     335
Pro Leu Arg Thr Tyr Gly Gly Arg Val Trp Leu Asp Gly Tyr Ser Asp
340     345     350
His Leu Pro Thr Ile Ile Tyr Met Arg Lys Gln
355     360

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<210> 9741

<211> 353

<212> PRT

<213> B.fragilis

<400> 9741

```

Ser Val Ser Ser Leu Ser Thr Leu Pro Val Ala Lys Glu Phe Glu Pro
1      5      10      15
Met Leu Leu Ile Pro Ile Gly Phe Gly Ile Leu Ile Gly Asn Ile Pro
20      25      30

```

Phe Asn Met Glu Ala Gly Leu Lys Val Gly Ile Tyr Glu Glu Gly Ser
 35 40 45
 Val Leu Asn Ile Leu Tyr Gln Gly Val Thr Ser Gly Trp Tyr Pro Pro
 50 55 60
 Leu Ile Phe Leu Gly Ile Gly Ala Met Thr Asp Phe Ser Ala Leu Ile
 65 70 75 80
 Ser Asn Pro Lys Leu Met Leu Ile Gly Ala Ala Ala Gln Phe Gly Ile
 85 90 95
 Phe Gly Ala Tyr Ile Ile Ala Leu Leu Ile Gly Phe Glu Pro Asn Gln
 100 105 110
 Ala Gly Ala Ile Gly Ile Ile Gly Gly Ala Asp Gly Pro Thr Ala Ile
 115 120 125
 Phe Leu Ser Ser Lys Leu Ala Pro Asn Leu Met Gly Ala Ile Ala Val
 130 135 140
 Ser Ala Tyr Ser Tyr Met Ala Leu Val Pro Val Ile Gln Pro Pro Ile
 145 150 155 160
 Met Arg Ala Leu Thr Thr Lys His Glu Arg Leu Ile Arg Met Lys Pro
 165 170 175
 Pro Arg Ile Val Ser His Thr Glu Lys Val Ile Phe Pro Ile Val Gly
 180 185 190
 Leu Leu Leu Thr Cys Phe Leu Val Pro Ser Gly Leu Pro Leu Leu Gly
 195 200 205
 Met Leu Phe Phe Gly Asn Leu Lys Glu Ser Gly Val Thr Arg Arg
 210 215 220
 Leu Ala Asn Thr Ala Ser Gly Pro Leu Ile Asp Val Ile Thr Ile Leu
 225 230 235 240
 Leu Gly Leu Thr Val Gly Ala Ser Thr Gln Ala Ser Gln Phe Leu Thr
 245 250 255
 Trp Asp Ser Ile Leu Ile Phe Ile Leu Gly Ala Phe Ser Phe Ile Ile
 260 265 270
 Ala Thr Ala Ser Gly Val Met Phe Val Lys Phe Phe Asn Leu Phe Leu
 275 280 285
 Lys Lys Gly Asn Lys Ile Asn Pro Leu Ile Gly Asn Ala Gly Val Ser
 290 295 300
 Ala Val Pro Asp Ser Ala Arg Ile Ser Gln Val Ile Gly Leu Glu Tyr
 305 310 315 320
 Asp Pro Thr Asn Tyr Leu Leu Met His Ala Met Gly Pro Asn Val Ala
 325 330 335
 Gly Val Ile Gly Ser Ala Val Ala Ala Gly Ile Leu Leu Gly Phe Leu
 340 345 350
 Met

<210> 9742

<211> 194

<212> PRT

<213> B.fragilis

<400> 9742

Ser Met Trp Pro Leu Phe Ile His Glu Gly Asp Asn Glu Ile Ala Met
 1 5 10 15
 Val Val Ser Asn Arg Ser Gly Ala Gly Gly Leu Leu Lys Gly Val Arg
 20 25 30
 Leu Lys Gln Glu Phe Glu Val Ile Lys Lys Leu Asn Trp Glu Val Ser
 35 40 45
 Thr Asp Leu Gly Gly Ile Cys Gln Asp Trp Asn Leu Gly Thr Gly Ser
 50 55 60
 Thr Glu Gly Trp Ser Val Val Lys Leu Ser Ala Asp Tyr Pro Leu Val
 65 70 75 80

Arg Lys Gly Glu Leu Thr Gly Thr Val Asp Gly Gly Arg Asp Ala Leu
 85 90 95
 Leu Thr Trp Tyr Arg Leu Glu Phe Asn Met Pro Arg Lys Asn Pro Ser
 100 105 110
 Val Trp Ile Pro Trp Lys Leu Ile Val Asn Ala Thr Gly Thr Gly Tyr
 115 120 125
 Met Trp Leu Asn Gly His Asn Ile Gly Arg Tyr Trp Glu Glu Gly Pro
 130 135 140
 Gln Arg Glu Phe Tyr Leu Pro Glu Cys Trp Leu Arg Ala Gly Glu Lys
 145 150 155 160
 Asn Val Ile Ile Leu Gly Leu Arg Gln Ser Glu Thr Lys Gly Ala Cys
 165 170 175
 Leu Phe Gly Ala Glu Val Ala Pro Tyr Thr Glu Asp Val Glu Cys Met
 180 185 190
 Glu Gln

<210> 9743

<211> 83

<212> PRT

<213> B.fragilis

<400> 9743

Thr Asp Arg Thr Leu Tyr Arg Tyr Arg Pro Ser Gly Arg Asp Cys Asp
 1 5 10 15
 Cys Thr Cys Arg Asn Arg Arg Leu Ile Ile Thr Ser Phe Lys Asn Val
 20 25 30
 Lys Cys Asn Arg Met Lys Lys Leu Ala Ile Leu Leu Val Cys Ala Ala
 35 40 45
 Met Leu Ala Ser Cys Asn Gly Leu Gly Gly Gly Ser Lys Asp Met Lys
 50 55 60
 Ala Lys Lys Leu Ile Leu Phe Leu Met Glu Phe Asp Pro Gln Glu Arg
 65 70 75 80
 Arg Ile Gly

<210> 9744

<211> 250

<212> PRT

<213> B.fragilis

<400> 9744

Trp Ser Leu Thr His Lys Asn Ala Glu Leu Asp Glu Met Met Gly Thr
 1 5 10 15
 Phe Asn Glu Val Gln Glu Gly Phe Arg Lys Ile Asn Ala Ala Glu Ser
 20 25 30
 Arg Val Asp Leu Thr Arg Gly Thr Ile Ser Glu Asn Ser Ala Thr Ala
 35 40 45
 Lys Gln Gln Ile Ala Ser Asp Ile Glu Phe Ile Thr Lys Gln Met Glu
 50 55 60
 Glu Asn Lys Ala Gln Ile Ala Lys Leu Gln Ala Met Leu Lys Ser Ser
 65 70 75 80
 Lys Asn Asn Ser Ala Gln Leu Lys Lys Ala Val Glu Ser Leu Thr Gln
 85 90 95
 Glu Leu Val Ala Lys Thr Gln Arg Ile Glu Glu Leu Gln Ala Glu Leu
 100 105 110
 Ala Ser Lys Asn Ile Arg Ile Gln Glu Leu Asp Ala Ala Val Thr Gly
 115 120 125
 Leu Thr Ala Asp Lys Glu Ser Leu Ala Ala Glu Asn Glu Ala Lys Ala

130		135		140	
Lys Thr Val Ala Glu Gln Asp Lys Ala Ile Asn Ser Ala Trp Phe Val					
145		150		155	160
Phe Gly Thr Lys Ser Glu Leu Lys Thr Gln Lys Ile Leu Glu Lys Gly					
	165		170		175
Asp Val Leu Lys Ser Ala Asp Phe Asn Lys Asp Tyr Phe Thr Gln Ile					
	180		185		190
Asp Ile Arg Thr Thr Lys Glu Ile Lys Leu Tyr Ser Lys Arg Ala Glu					
	195		200		205
Leu Leu Thr Thr His Pro Ala Lys Ser Tyr Glu Leu Val Lys Asp Asp					
	210		215		220
Lys Gly Gln Leu Thr Leu Lys Ile Thr Asn Pro Lys Glu Phe Trp Ser					
225		230		235	240
Val Ser Lys Tyr Leu Val Ile Gln Val Lys					
	245		250		

<210> 9745

<211> 81

<212> PRT

<213> B.fragilis

<400> 9745

Glu Arg Ser Ala Leu Ala Gly Tyr Thr Glu Leu Pro Tyr Leu Cys Ser		
1	5	10
Arg Phe Lys Lys Arg Ile Ile Met Glu Leu Pro Glu Asp Pro Met Met		
	20	25
Leu Phe Ser Val Ile Asn Met Lys Leu Arg Asp Cys Tyr Ala Ser Leu		
	35	40
Asp Glu Leu Cys Glu Asp Met Asn Ile Ser Lys Asp Ile Leu Ile Gly		
	50	55
Lys Leu Glu Ser Ile Gly Phe Glu Tyr Asn Ala Glu Gln Asn Lys Phe		
65	70	75
Trp		80

<210> 9746

<211> 783

<212> PRT

<213> B.fragilis

<400> 9746

Gly Glu Lys Ala Met Lys Tyr Arg Ile Leu Val Leu Thr Ala Ile Leu		
1	5	10
Phe Thr Ala Cys Asn Leu Leu His Ala Gln Val Gln Thr Gly Lys Leu		
	20	25
Ser Gly Val Ile Ile Asp Ala Asn Asn Glu Glu Thr Leu Val Gly Ala		
	35	40
Asn Ile Tyr Val Glu Ser Leu Lys Lys Gly Thr Ser Thr Asp Lys Asn		
	50	55
Gly Glu Phe Ser Ile Glu Val Pro Ala Gly His Tyr Arg Ile Val Ile		
65	70	75
Ser Tyr Met Gly Tyr Arg Thr Arg Gln Glu Glu Val Arg Ile Ser Glu		
	85	90
Leu Lys Thr Lys Lys Leu Val Ile Arg Leu Glu Pro Glu Thr Gln Ser		
	100	105
Leu Gly Glu Val Val Val Thr Ala Lys Ser Glu Ala Arg Gln Leu Arg		
	115	120
Glu Gln Ala Met Pro Met Ser Val Ile Ser Met Gln Gln Leu Gln Gly		
	130	135
		140

Thr Val Ser Asn Val Gln Asp Val Leu Ser Lys Thr Val Gly Val Thr
 145 150 155 160
 Ile Arg Asn Thr Gly Gly Val Gly Ser Ser Ser Arg Val Ser Val Arg
 165 170 175
 Gly Leu Glu Gly Lys Arg Ile Gly Phe Phe Ile Asp Gly Ser Pro Met
 180 185 190
 Asn Asp Asn Ser Asp Phe Ile Asp Ile Asn Asp Ile Pro Val Asp Met
 195 200 205
 Ile Asp Arg Ile Glu Ile Tyr Lys Gly Val Val Pro Ala Arg Phe Gly
 210 215 220
 Gly Ser Ser Val Gly Gly Ala Val Asn Ile Val Ile Arg Glu Tyr Pro
 225 230 235 240
 Pro Lys Tyr Leu Asp Ala Ser Tyr Ser Ile Glu Ser Phe Asn Thr His
 245 250 255
 Lys Leu Ser Leu Val Thr Lys Arg Asn Ile Ala Thr Lys Gly Leu Glu
 260 265 270
 Phe Gly Gly Gly Gly Phe Tyr Thr Tyr Ser Asp Asn Asn Tyr Lys Met
 275 280 285
 Glu Ser Pro Phe Glu Glu Gly Leu Ile Ile Lys Arg Asn His Asp Lys
 290 295 300
 Phe Lys Lys Leu Ala Val Ala Gly Ser Leu Lys Ala Arg Lys Trp Trp
 305 310 315 320
 Phe Asp Leu Ala Glu Phe Glu Pro Val Phe Ile His Thr Phe Lys Glu
 325 330 335
 Ile Gln Gly Ile Glu Tyr Asn Ile Glu Lys Ala His Thr Tyr Ser Asp
 340 345 350
 Ala Phe Ile Phe Ala Asn Lys Leu Glu Lys Glu Asn Phe Leu Thr Glu
 355 360 365
 Gly Leu Asp Met Glu Ser Asn Leu Ala Tyr Ala Tyr Thr Val Phe His
 370 375 380
 Met Val Asp Thr Ala Ala Tyr Arg Tyr Asn Trp Asp Gly Thr Thr Tyr
 385 390 395 400
 Pro Ala Val Ser Glu Tyr Gly Gly Glu Ile Gly Lys Trp Ala Ser Asn
 405 410 415
 Ala Arg Asn Glu Lys His Thr Ile Thr His Lys Leu His Leu Asn Tyr
 420 425 430
 Val Ile Asn Asn Asn His Ser Ile Asn Leu Asn Ser Leu Phe Ser Phe
 435 440 445
 Ala Ser Gly His Pro Lys Asp Asp Leu Lys Asn Lys Val Val Gly Tyr
 450 455 460
 Lys Thr Asn Phe Arg Ser Thr Met Ala Ser Trp Ile Ala Gly Leu Gly
 465 470 475 480
 Tyr Asp Phe Arg Thr Asp Asn Asp Ile Phe Leu Asn Ser Leu Asn Val
 485 490 495
 Lys Tyr Tyr Met Tyr Gly Met Asn Thr His Met Ser Ser Ile Met Ser
 500 505 510
 Ser Glu Ala Glu Lys Val Asp Met Leu Lys Arg Asp Phe Gly Ile Ser
 515 520 525
 Asn Ala Leu Arg Tyr Arg Phe Thr Pro Asp Phe Met Gly Lys Leu Ser
 530 535 540
 Val Gly Tyr Asp Val Arg Leu Pro Ala Glu Ser Glu Leu Leu Gly Asp
 545 550 555 560
 Gly Tyr Thr Val Ala Pro Ser Gly Asn Leu Leu Pro Glu Arg Asn Thr
 565 570 575
 Ser Val Asn Leu Gly Phe Leu Leu Asp Arg Thr Glu Lys Asp Ala Ser
 580 585 590
 Asn Leu Gln Val Glu Val Asn Thr Phe Tyr Gly Tyr Leu Glu Asn Met
 595 600 605
 Ile Arg Phe Thr Gly Gly Tyr Leu Gln Ser Gln Tyr Gln Asn Phe Gly

610	615	620
Lys Met Arg Thr Leu Gly Val Glu Val Glu Val Lys Ala Asp Leu Thr		
625	630	635
His Trp Leu Tyr Gly Tyr Cys Asn Met Thr Tyr Gln Asp Leu Arg Asp		
	645	650
Val Arg Lys Phe Glu Pro Asn Thr His Ile Thr Asn Pro Thr Lys Gly		
	660	665
Ser Arg Met Pro Asn Ile Pro Tyr Leu Leu Ala Asn Ala Gly Leu Glu		
	675	680
Tyr His Lys Glu Asn Leu Phe Gly Gly Lys Gly Gln Asn Thr Arg Ile		
	690	695
Phe Thr Asp Gly Ser Phe Val Glu Glu Tyr Phe Tyr Asp Phe Glu Gln		
705	710	715
Ser Arg Phe Gln Glu Arg Arg Ile Pro Arg Thr Phe Ser Ala Asn Ile		
	725	730
Gly Ile Glu His Ser Phe Met Asn Gly Arg Phe Ile Ile Ser Ala Arg		
	740	745
Met Asn Asn Leu Thr Asp Ala Arg Met Met Ser Glu Phe Asn Arg Pro		
	755	760
Leu Pro Gly Arg Asn Trp Gly Val Arg Leu Arg Tyr Val Leu Lys		
	770	780

<210> 9747

<211> 253

<212> PRT

<213> B.fragilis

<400> 9747

Leu Ile Arg Ala Arg Ile Ala Gln Gln Val Val Arg Ala Phe Phe Leu	
1	5
Asn Cys Thr Arg Tyr Phe Asn Met Lys Tyr Lys Asn Leu Phe Phe Asp	
	20
Leu Asp Asp Thr Leu Trp Ala Phe Ser Gln Asn Ala Tyr Asp Thr Phe	
	35
Glu Glu Val Tyr Asp Lys Tyr Arg Leu Gly Gln Tyr Phe Asp Ser Phe	
	50
Ser His Phe Tyr Ser Leu Tyr Gln Arg Arg Asn Thr Glu Leu Trp Val	
65	70
Glu Tyr Gly Asn Gly Gln Val Thr Lys Glu Glu Leu Asn Arg Gln Arg	
	85
Phe Leu Tyr Pro Leu Gln Ala Val Gly Ile Asp Asn Glu Met Leu Ala	
	100
Lys Arg Tyr Ser Asp Asp Phe Phe Ser Ile Ile Pro Thr Lys Ser Arg	
	115
Leu Met Pro Tyr Ala Glu Glu Val Leu Ser Tyr Leu Ala Pro Lys Tyr	
	130
Asn Leu Tyr Ile Leu Ser Asn Gly Phe Arg Glu Leu Gln Ser Arg Lys	
145	150
Met Arg Ser Ser Gly Ile Asp Thr Tyr Phe Asn Lys Ile Ile Leu Ser	
	165
Glu Asp Leu Gly Val Met Lys Pro Trp Pro Glu Ile Phe Tyr Phe Ala	
	180
Leu Ser Ala Thr Gln Ser Glu Leu Arg Glu Ser Leu Met Ile Gly Asp	
	195
Ser Trp Glu Ala Asp Ile Thr Gly Ala Asn Gly Ile Gly Met His Gln	
	210
Ala Tyr Tyr Asn Val Ser Gly Arg Ala Asp Phe Pro Phe Arg Pro Thr	
225	230
Tyr Leu Val Thr Asp Leu Lys Glu Leu Met Glu Leu Leu	

<210> 9748
 <211> 66
 <212> PRT
 <213> B.fragilis

<400> 9748
 Ala Ile Ser Tyr Asn Lys Met Gln Ser Val Arg Ala Arg Pro His Arg
 1 5 10 15
 His Ile Arg Pro Gly Arg Glu Val Leu Arg Met Asn His Leu Ser Asp
 20 25 30
 Gly Ile Leu Arg Gly Leu Leu His Val Pro Ile Lys Ser Leu Lys Ser
 35 40 45
 Gly Trp Gly Glu Lys Lys Lys Leu Leu Val Asp Glu Leu Ser Thr Arg
 50 55 60
 Gly Arg
 65

<210> 9749
 <211> 722
 <212> PRT
 <213> B.fragilis

<400> 9749
 Ser Tyr Tyr Lys Ile Val Ser Thr Tyr Tyr Ser Ser Ala Lys Thr Leu
 1 5 10 15
 Gln Ile Ser Tyr Ile Gly Met Gln Thr Ala Glu Val Ala Ile Ala Pro
 20 25 30
 Val Ile Lys Val Ile Leu Lys Thr Asp Ala Lys Ala Leu Asp Glu Val
 35 40 45
 Val Val Thr Ala Met Gly Ile Ser Lys Glu Lys Lys Ala Leu Gly Tyr
 50 55 60
 Ala Val Gln Asp Val Lys Gly Asp Lys Leu Thr Gln Ala Ser Ser Ser
 65 70 75 80
 Asn Leu Ser Ser Ala Leu Gln Gly Lys Val Ser Gly Val Glu Ile Ser
 85 90 95
 Pro Ser Ser Gly Met Pro Gly Ala Ser Ser Lys Met Thr Ile Arg Gly
 100 105 110
 Ser Arg Ser Phe Thr Gly Asp Asn Thr Pro Leu Tyr Val Val Asp Gly
 115 120 125
 Met Pro Ile Ser Ser Ser Thr Asp Leu Asp Thr Phe Asn Ser Val Thr
 130 135 140
 Gly Ser Asp Tyr Ala Asn Arg Ala Val Asp Ile Asp Pro Asn Asp Ile
 145 150 155 160
 Glu Ser Ile Asn Ile Leu Lys Gly Gln Ala Ala Ser Ala Leu Tyr Gly
 165 170 175
 Met Arg Ala Ser Asn Gly Val Val Val Ile Thr Thr Lys Ser Gly Lys
 180 185 190
 Gly Ala Arg Lys Gly Lys Pro Glu Val Thr Ile Asn Thr Gly Leu Ser
 195 200 205
 Phe Asp Lys Val Ser Thr Met Pro Asp Phe Gln Lys Glu Phe Ala Gln
 210 215 220
 Gly Phe Asn Gly Ala Phe Ser Pro Ser Asp Ser Arg Ser Trp Gly Pro
 225 230 235 240
 Leu Ile Ser Glu Leu Ala Asn Asp Pro Lys Tyr Gly Gly Asn Thr Asp
 245 250 255
 Asn Ser Tyr Thr Gln Lys Phe Gly Lys His Gln Gly Gln Tyr Tyr Val
 260 265 270

5661
 245
 250
 9748
 66
 PRT
 B.fragilis
 9749
 722
 PRT
 B.fragilis
 9749
 722
 PRT
 B.fragilis

Asp Gln Arg Ala Lys Ala Gly Leu Asp Pro Trp Ala Thr Pro Arg Ala
 275 280 285
 Tyr Asp Asn Ala Lys Asp Phe Phe Asn Thr Gly Val Thr Trp Asn Ser
 290 295 300
 Ser Ala Asn Val Ala Gln Ser Leu Asp Lys Gly Ser Tyr Ser Leu Ser
 305 310 315 320
 Leu Gly Ser Thr Thr Ala Asn Gly Ile Val Pro Ser Thr Gly Met Asp
 325 330 335
 Arg Tyr Asn Ala Lys Leu Thr Ala Gln Ala Gln Leu Ser Lys Asn Trp
 340 345 350
 Ser Thr Gly Phe Asn Gly Asn Phe Val Tyr Ser Lys Ile Lys Lys Gln
 355 360 365
 Thr Gly Ala Asn Asn Gly Ile Met Ala Thr Val Tyr Gly Ala Pro Ser
 370 375 380
 Ser Tyr Asp Leu Gly Gly Ile Pro Ser His Ile Asp Gly Asp Pro Tyr
 385 390 395 400
 Thr Gln Asn Thr Tyr Arg Ser Thr Gly Gly Phe Asp Gly Ala Tyr Trp
 405 410 415
 Ala Val Glu Asn Asn Ser Phe Lys Glu Arg Thr Gln Arg Phe Phe Gly
 420 425 430
 Asn Ala Phe Ala Lys Tyr Ser Thr Asp Phe Gly Thr Glu Asn His Lys
 435 440 445
 Leu Asp Val Lys Tyr Gln Leu Gly Thr Asp Ala Tyr Thr Asn Tyr
 450 455 460
 Thr Asp Thr Trp Gly Tyr Gly His Ser Asn Gly Thr Gly Ser Ile Glu
 465 470 475 480
 Glu Gln Ser Val Thr Asn Asn Glu Ile Asn Ser Leu Leu Thr Val Thr
 485 490 495
 Tyr Asp Trp Lys Ile Thr Pro Glu Leu Asp Leu Asn Val Leu Tyr Gly
 500 505 510
 Asn Glu Leu Val Asp Asn Ser Ser Lys Tyr Lys Tyr Asn Leu Gly Ser
 515 520 525
 Asn Phe Asn Phe Pro Gly Trp Asn His Ile Ala Asn Ala Ser Ile Tyr
 530 535 540
 Ser Ser Thr Gly Thr Tyr His Arg Glu Arg Thr Val Gly Asn Phe Gly
 545 550 555 560
 Asn Ile Ser Leu Ala Tyr Arg Asn Met Leu Tyr Leu Asn Ala Thr Val
 565 570 575
 Arg Asn Asp Ile Val Ser Ser Met Pro Arg Asn Asn Arg Ser Phe Thr
 580 585 590
 Tyr Pro Ser Val Ser Leu Gly Phe Ile Phe Thr Glu Leu Glu Ala Leu
 595 600 605
 Lys Asn Asp Val Leu Thr Tyr Gly Lys Ile Arg Ala Ser Tyr Ala Glu
 610 615 620
 Val Gly Gln Ala Gly Thr Tyr Tyr Pro Ser Tyr Tyr Arg Thr Pro Val
 625 630 635 640
 Tyr Gly Gly Gly Phe Ser Ser Gly Thr Pro Ile Gln Tyr Pro Ile Gly
 645 650 655
 Ser Ile Ser Ser Tyr Ile Pro Tyr Tyr Lys Ile Tyr Asp Pro Asn Leu
 660 665 670
 Lys Pro Gln Asn Thr Lys Ser Tyr Glu Ile Gly Ala Asp Phe Ser Phe
 675 680 685
 Trp Asn Gly Leu Ile Ser Leu Asn Tyr Thr Tyr Ser Cys Gln Asn Val
 690 695 700
 Lys Val Gln Ile Phe Gln Ser Thr Leu Gly Leu Leu Phe Thr Asp Ile
 705 710 715 720
 Arg Asp

<210> 9750
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 9750
 Tyr Val Leu Lys Ser Pro Pro Met Leu Leu Asn Ala Val Ala Val Ile
 1 5 10 15
 Thr Ser Ala Lys Met Asn Leu Ala Gly Thr Leu Val Val Trp Ser Leu
 20 25 30
 Ser Leu Leu Met Leu Ser Ile Val Ser Ser Glu Gln Glu Ala Asn Ala
 35 40 45
 Thr Glu Ile Asn Ala Thr Asp Lys Ile Pro Phe Asp Lys Leu Asn Ile
 50 55 60
 Asp Phe Ile Phe Val Leu Phe Arg Ile
 65 70

<210> 9751
 <211> 287
 <212> PRT
 <213> B.fragilis

<400> 9751
 Ser Ser Glu Asn Asn Thr Met Leu Met Tyr Val Ile Ile Ala Cys Lys
 1 5 10 15
 Ser Asn Ser Phe Ile Gly Phe Ser Val Phe Phe His Tyr Leu Phe Leu
 20 25 30
 His Leu Pro Ser His Ser Lys Arg Asn Ser Asp Val Asp Met Gln Ala
 35 40 45
 Leu Leu Asn Asp Ile Glu Leu Asp Ile Gln Glu Leu Lys Tyr Leu Met
 50 55 60
 Glu Ile Ile Ser Arg Glu Pro Asp Ser Val Leu Arg Gly Val Ala Arg
 65 70 75 80
 Arg Asn Ile Val Gln Met Arg Gly Arg Leu Asp Ala Leu Leu Glu Leu
 85 90 95
 Leu Asp Ala Lys Pro Val Ile Ala Ala Asp Ala Ser Glu Ser Pro Glu
 100 105 110
 Asn Arg Pro Val Thr Glu Thr Ile Glu Val Val Glu Ile Pro Ala Leu
 115 120 125
 Lys Glu Thr Val Ala Asp Ile Pro Glu Lys Asn Glu Glu Ala Ala Val
 130 135 140
 Ala Glu Asp Ser Gln Glu Ala Val Glu Pro Gly Pro Leu Ser Leu Ser
 145 150 155 160
 Glu Ala Val Ile Glu Gln Leu Pro Thr Val Glu Leu Asp Pro Val Ala
 165 170 175
 Asp Glu Lys Glu Glu Val Phe Glu Ser Val Ser Val Pro Gln Ser Glu
 180 185 190
 Glu Pro Thr Val Lys Val Glu Thr Arg Val Ala Ser Ser Pro Ile Leu
 195 200 205
 Ala Glu Arg Ile Lys Thr Ala Gly Asp Leu Arg Arg Ser Ile Ser Leu
 210 215 220
 Asn Asp Ser Phe Arg Phe Ser Arg Glu Leu Phe Gly Gly Ser Met Glu
 225 230 235 240
 Gln Met Asn Asn Val Leu His Gln Ile Gly Glu Met Ser Ser Leu Asp
 245 250 255
 Ala Ala Leu Val Phe Leu Ser Ser Lys Ile Lys Val Asp Glu Glu Asn
 260 265 270
 Glu Ala Met Asn Asp Phe Val Glu Leu Leu Arg Lys His Phe Ile
 275 280 285

<210> 9752
 <211> 219
 <212> PRT
 <213> B.fragilis

<400> 9752

Lys Asn Thr Glu Lys Pro Ile Lys Leu Leu Leu Leu Gln Ala Ile Ile
 1 5 10 15
 Thr Tyr Ile Ser Met Val Leu Phe Ser Glu Asp His Ile Gln Glu Thr
 20 25 30
 Arg Arg Arg Gly Arg Ile Glu Val Ile Cys Gly Ser Met Phe Ser Gly
 35 40 45
 Lys Thr Glu Glu Leu Ile Arg Arg Met Lys Arg Ala Lys Phe Ala Arg
 50 55 60
 Gln Arg Val Glu Ile Phe Lys Pro Ala Ile Asp Thr Arg Tyr Ser Glu
 65 70 75 80
 Gly Asp Val Val Ser His Asp Ser Asn Ser Ile Ser Ser Thr Pro Ile
 85 90 95
 Asp Ser Ser Ala Ser Ile Leu Leu Phe Thr Ser Glu Ile Asp Val Val
 100 105 110
 Gly Ile Asp Glu Ala Gln Phe Phe Asp Ser Gly Leu Ile Asp Val Cys
 115 120 125
 Asn Gln Leu Ala Asn Asn Gly Val Arg Val Ile Ile Ala Gly Leu Asp
 130 135 140
 Met Asp Phe Lys Gly Val Pro Phe Gly Pro Met Pro Ala Leu Cys Ala
 145 150 155 160
 Ile Ala Asp Glu Val Ser Lys Val His Ala Ile Cys Val Lys Cys Gly
 165 170 175
 Gln Leu Ala Ser Phe Ser His Arg Thr Val Lys Asn Asp Lys Gln Val
 180 185 190
 Leu Leu Gly Glu Thr Ala Gln Tyr Glu Pro Leu Cys Arg Glu Cys Tyr
 195 200 205
 Gln Arg Ala Leu Gln Glu Asp Arg Glu Lys Ser
 210 215

<210> 9753
 <211> 947
 <212> PRT
 <213> B.fragilis

<400> 9753

Tyr Asn Cys Ser Ser Ala Lys Thr Leu Gln Ile Ser Tyr Ile Gly Met
 1 5 10 15
 Gln Thr Val Glu Val Ala Ile Lys Pro Val Val Lys Ile Thr Leu Lys
 20 25 30
 Pro Asp Thr Glu Val Leu Asp Glu Val Val Val Thr Gly Tyr Gly Asn
 35 40 45
 Phe Lys Lys Ser Ser Phe Thr Gly Ala Ala Ser Ser Ile Thr Thr Glu
 50 55 60
 Lys Leu Gln Asp Val Pro Ser Leu Ser Val Gln Asp Lys Leu Ala Gly
 65 70 75 80
 Ser Val Ala Gly Val Gln Ile Thr Ser Thr Ser Gly Gln Pro Gly Ala
 85 90 95
 Val Glu Ser Val Arg Ile Arg Gly Met Gly Ser Ile Asn Ala Gly Asn
 100 105 110
 Asp Pro Leu Tyr Val Ile Asp Gly Val Pro Val Met Thr Gly Asp Ala
 115 120 125
 Ser Glu Phe Thr Tyr Ser Gln Ser Gly Asn Ser Leu Leu Ser Thr Ile

130	135	140
Asn Ser Asn Asp Ile Glu Ser Met Thr Val Ile Lys Asp Ala Ala Ala		
145	150	155
Ala Ser Leu Tyr Gly Ser Arg Ala Ala Asn Gly Val Ile Val Ile Thr		160
	165	170
Thr Lys Lys Gly Ala Ser Gly Lys Leu Lys Leu Asn Val Arg Ala Asp		175
	180	185
Trp Gly Phe Ser Asn Lys Ala Ile Asp Tyr Arg Pro Ile Leu Asn Gly		190
	195	200
Glu Asp Arg Arg Asp Ile Leu Tyr Met Gly Leu Lys Asn Tyr Ala Leu		205
	210	215
Asn Ser Gly Lys Asp Glu Thr Tyr Ala Val Asn Tyr Ala Asp Asn Asn		220
225	230	235
Ile Asp Lys Tyr Ala Ala Lys Pro Trp Ser Gly Tyr Thr Asp Trp Glu		240
	245	250
Asp Val Leu Phe Arg Asn Gly Ser His Gln Asn Tyr Glu Val Asn Ala		255
	260	265
Gln Gly Gly Asn Glu Arg Thr Lys Phe Tyr Thr Ser Phe Gly Tyr Thr		270
	275	280
Lys Gln Glu Gly Ile Thr Leu Gln Ser Gly Tyr Glu Arg Ile Thr Gly		285
	290	295
Arg Ala Asn Met Ser His Lys Ala Asp Arg Val Thr Ile Glu Ala Ser		300
305	310	315
Thr Met Phe Thr Asn Ser Thr Gln Asn Val Asn Ser Glu Gly Thr Ser		320
	325	330
Phe Ser Ser Pro Ile Met Cys Leu Ala Met Thr Ala Ser Pro Ser Thr		335
	340	345
Phe Pro Tyr Asn Glu Asp Gly Thr Phe Ser Thr Ser Phe Pro Ala Leu		350
	355	360
Asn Gly Ala Asn Pro Leu Gln Thr Ala Thr Tyr Asn Tyr Asp Arg Ser		365
	370	375
Thr Ile Val Arg Thr Leu Asn Thr Leu Ser Ala Thr Trp Asn Ile Trp		380
385	390	395
Asp Asn Leu Asn Ile Lys Glu Thr Leu Gly Tyr Asp Phe Asn Gln Thr		400
	405	410
Asn Asn Arg Val Trp Trp Asp Pro Arg Ser Asn Asp Gly Arg Ser Ser		415
	420	425
Lys Gly Val Phe Gln Arg Tyr Met Met Asn Arg Ser Lys Leu Asn Thr		430
	435	440
Gln Thr Gln Leu Thr Tyr Asn Lys Thr Phe Ala Glu His His Asn Ile		445
	450	455
Asp Val Leu Leu Gly Phe Glu Thr Glu Asp Tyr Lys Tyr Asp Tyr Thr		460
465	470	475
Tyr Thr Asn Gly Asn Thr Tyr Pro Ser Tyr Leu Pro Glu Ile Thr Asn		480
	485	490
Ala Gly Val Ser Arg Gly Ala Ser Asn Ile Asn Ser Tyr Arg Met Thr		495
	500	505
Ser Tyr Leu Gly Arg Leu Asn Tyr Asp Tyr Ala Gly Lys Tyr Tyr Val		510
	515	520
Ser Gly Ser Phe Arg Arg Asp Gly Ser Ser Arg Leu Ser Arg Asp Ser		525
	530	535
Arg Trp Gly Asn Phe Trp Ser Val Ser Gly Ser Trp Arg Leu Ser Gln		540
545	550	555
Glu Ala Phe Met Glu Ser Leu Ser Asn Val Ile Thr Asp Ala Lys Ile		560
	565	570
Arg Ala Ser Tyr Gly Val Asn Gly Thr Gln Pro Lys Asp Tyr Tyr Gly		575
	580	585
Tyr Met Gly Val Tyr Glu Phe Gly Tyr Asn Tyr Asn Gly Asn Gly Gly		590
	595	600
		605

Ser Ser Glu Ala Arg Phe Tyr Asn Pro Ser Leu Lys Trp Glu Lys Asn
 610 615 620
 Tyr Ala Thr Asn Ile Gly Ile Asp Leu Thr Leu Phe Asn Arg Leu Thr
 625 630 635 640
 Val Ser Ala Glu Trp Tyr Asn Arg Glu Thr Lys Asp Leu Leu Met Asp
 645 650 655
 Lys Pro Ile Ser Ala Ala Val Gly Val Ile Asn Ser Ser Gly Val Ala
 660 665 670
 Asn Met Leu Val Asn Val Gly Ser Met Arg Asn Arg Gly Phe Glu Leu
 675 680 685
 Glu Leu Lys Ser Thr Asn Ile Gln Asn Lys Asp Leu Leu Trp Thr Thr
 690 695 700
 Ser Leu Asn Ile Gly His Asn Lys Asn Lys Leu Thr Lys Leu Asp Gly
 705 710 715 720
 Glu Gln Gln Glu Ile Ile Ser Gly Val Ser Ile His Arg Val Gly Gln
 725 730 735
 Pro Tyr Tyr Ser Ile Tyr Ala Tyr Glu Tyr Ala Gly Val Asp Pro Gln
 740 745 750
 Thr Gly Lys Glu Leu Tyr Tyr Ile Asn Gly Glu Asp Gly Ser Arg Glu
 755 760 765
 Thr Thr Thr Asn Ser Ala Ala Asn Lys Thr Ile Ile Gly Ser Ile
 770 775 780
 Glu Pro Lys Val Gln Gly Leu Thr Asn Tyr Val Ser Trp Lys Phe
 785 790 795 800
 Ile Asp Phe Asn Leu Thr Leu Thr Tyr Ser Leu Gly Gly His Ala Tyr
 805 810 815
 Asp Tyr Ala Thr Trp Leu Gln Ser Asn Gly Gly Thr Tyr His Tyr Leu
 820 825 830
 Gly Asn Val Pro Ala Tyr Tyr Lys Met Glu Asp Thr Trp Gln Lys Thr
 835 840 845
 Gly Asp Asn Ala Lys Leu Pro Gln Phe Ala Tyr Gly Asn Ala Asn Lys
 850 855 860
 Ala Ser Ser Arg Trp Leu Met Ser Thr Asp His Leu Arg Val Lys Asn
 865 870 875 880
 Met Thr Leu Gly Phe Thr Leu Pro Gln Ser Trp Ser Ser Lys Ala Gly
 885 890 895
 Ile Ser Lys Leu Arg Ala Tyr Val Ser Gly Asn Asn Leu Leu Thr Trp
 900 905 910
 Lys Lys Lys Ser Leu Tyr Val Asp Pro Glu Val Pro Val Asp Gly Leu
 915 920 925
 Cys Thr Phe Glu Thr Pro Ala Leu Arg Thr Val Thr Phe Gly Leu Glu
 930 935 940
 Ile Gly Phe
 945

<210> 9754

<211> 537

<212> PRT

<213> B.fragilis

<400> 9754

Ile Leu Lys Arg Thr Lys Met Lys Ser Ile Phe Asn Leu Ser Lys Gly
 1 5 10 15
 Ile Leu Ser Val Ala Leu Ile Ser Val Ala Phe Ala Ser Cys Ser Glu
 20 25 30
 Asp Thr Met Asp Asn Ile Asn Lys Asp Lys Asp His Thr Thr Ser Val
 35 40 45
 Pro Ala Lys Phe Ile Leu Ala Asp Val Ile Thr Ala Thr Ala Phe Ser
 50 55 60

Asn Ile Gly Gly Asp Phe Asn Thr Tyr Tyr Ser Thr Tyr Val Glu His
 65 70 75 80
 Met Val Gly Val Asp Asn Gln Leu Ala Asn Ala Glu Lys Arg Asn Gly
 85 90 95
 Glu Pro Ser Ala Ser Ser Thr Phe Asn Asn Val Trp Gly Asn Leu Tyr
 100 105 110
 Ser Thr Leu Lys Asn Ala Arg Ile Ala Ile Asn Ile Ser Ser Asn Glu
 115 120 125
 Val Thr Gly Asn Tyr Thr Thr Lys Gly Ile Gly Glu Val Leu Ala Ala
 130 135 140
 Ile Asn Ala Gly Leu Ile Ala Asp Ser Phe Gly Asp Thr Pro Phe Ser
 145 150 155 160
 Gln Ala Ala Leu Pro Glu Leu Ala Asn Gly Gln Pro Gln Phe Leu Thr
 165 170 175
 Pro Glu Leu Asp Lys Gln Glu Ala Ile Tyr Thr Ala Ile Met Glu Tyr
 180 185 190
 Leu Asp Ala Ala Ile Thr Asp Leu Pro Lys Gly Asp Lys Ser Asp Glu
 195 200 205
 Ile Gly Glu Tyr Asp Phe Ile Tyr Lys Gly Asp Gly Glu Ala Trp Leu
 210 215 220
 Lys Leu Ala Tyr Gly Leu Lys Ala Arg Tyr Thr Met Arg Leu Leu Ala
 225 230 235 240
 Arg Ser Ser Ser Lys Asp Ala Asp Leu Gln Lys Ile Leu Glu Tyr Val
 245 250 255
 Asp Lys Ser Tyr Thr Ser Ile Glu Glu Gln Ala Ala Phe Ser Ile Tyr
 260 265 270
 Ser Ala Thr Asn Leu Asn Pro Leu Phe Asp Phe Gln Trp Ser Arg Asp
 275 280 285
 Gly Leu Ala Ala Ser Lys Ser Tyr Ala Asp Lys Leu Ile Glu Arg Asn
 290 295 300
 Asp Pro Arg Leu Arg Arg Ile Phe Cys Ile Gly Gln Gly Lys Leu Thr
 305 310 315 320
 Glu Asn Glu Asn Ala Val Ser Ile Gln Val Thr Gly Ala Asp Asp Pro
 325 330 335
 Arg Phe Leu Met Ala Asp Asn Gly Thr Ala Glu Ser Val Lys Tyr Glu
 340 345 350
 Tyr Asn Thr Pro Ile Phe Val Tyr Ser Gln Thr Cys Pro Thr Leu Leu
 355 360 365
 Met Ser Tyr His Glu Leu Leu Phe Leu Lys Ala Glu Ala Leu Ala Arg
 370 375 380
 Leu Asn Arg Lys Asp Glu Ala Ala Asn Ala Leu Lys Asp Ala Val Val
 385 390 395 400
 Ala Ala Ile Ala Asn Ala Glu Thr Gly Val Ser Ala Ala Phe Asn Ala
 405 410 415
 Pro Thr Val Lys Ser Tyr Gly Gly Val Lys Glu Thr Thr Lys Ala Ile
 420 425 430
 Thr Ala Thr Glu Ala Glu Glu Tyr Phe Thr Asn Asn Val Lys Pro Leu
 435 440 445
 Phe Asp Ala Asn Pro Val Lys Glu Val Met Val Gln Lys Tyr Ile Ala
 450 455 460
 Phe Leu Gly Ala Phe Gly Glu Thr Thr Glu Cys Tyr Asn Asp Val Arg
 465 470 475 480
 Arg Leu Lys Ala Met Gly Glu Glu Tyr Ile Lys Leu Asp Asn Pro Tyr
 485 490 495
 Lys Phe Pro Leu Arg Ala Pro Tyr Gly Ala Asp Asp Val Ser Ala Asn
 500 505 510
 Pro Asn Val Glu Ala Ala Phe Gly Asn Gly Gln Tyr Val Tyr Thr Asp
 515 520 525
 Pro Val Trp Trp Ala Arg Gly Ser Arg

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<210> 9755
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 <212> PRT
 <213> B.fragilis

<400> 9755

Ser	Phe	Ser	Gly	Asn	Ile	Leu	Tyr	Asn	Glu	Tyr	Leu	Lys	Arg	Asp	Met
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Gly	Lys	Leu	Tyr	Val	Val	Pro	Thr	Pro	Val	Gly	Asn	Leu	Glu	Asp	Met
		20						25					30		
Thr	Phe	Arg	Ala	Ile	Lys	Val	Leu	Lys	Glu	Ala	Asp	Leu	Ile	Leu	Ala
		35					40					45			
Glu	Asp	Thr	Arg	Thr	Ser	Gly	Ile	Leu	Leu	Lys	His	Phe	Glu	Ile	Lys
	50					55					60				
Asn	Val	Met	Gln	Ser	His	His	Lys	Phe	Asn	Glu	His	Lys	Thr	Val	Glu
65					70					75				80	
Ser	Val	Val	Asn	Arg	Ile	Lys	Ala	Gly	Glu	Thr	Ile	Ala	Leu	Ile	Ser
			85						90					95	
Asp	Ala	Gly	Thr	Pro	Gly	Ile	Ser	Asp	Pro	Gly	Phe	Leu	Val	Val	Arg
			100					105						110	
Glu	Cys	Val	Arg	Asn	Gly	Ile	Glu	Val	Gln	Cys	Leu	Pro	Gly	Ala	Thr
	115						120					125			
Ala	Phe	Val	Pro	Ala	Leu	Val	Ala	Ser	Gly	Leu	Pro	Asn	Glu	Lys	Phe
	130					135					140				
Cys	Phe	Glu	Gly	Phe	Leu	Pro	Gln	Lys	Lys	Gly	Arg	Met	Thr	Lys	Leu
145					150					155					160
Lys	Ser	Leu	Val	Asp	Glu	His	Arg	Thr	Met	Val	Phe	Tyr	Glu	Ser	Pro
				165					170					175	
His	Arg	Leu	Leu	Lys	Thr	Leu	Thr	Gln	Phe	Ala	Glu	Tyr	Phe	Gly	Pro
		180					185						190		
Glu	Arg	Gln	Val	Ser	Val	Ser	Arg	Glu	Ile	Ser	Lys	Ile	His	Glu	Glu
	195						200					205			
Thr	Val	Arg	Gly	Thr	Leu	Ser	Glu	Leu	Ile	Glu	His	Phe	Thr	Ala	Thr
	210					215						220			
Asp	Pro	Arg	Gly	Glu	Ile	Val	Ile	Val	Leu	Ala	Gly	Ile	Asp	Asp	
225					230					235					

<210> 9756
 <211> 507
 <212> PRT
 <213> B.fragilis

<400> 9756

Lys	Gln	Phe	Met	Lys	Lys	Glu	Phe	Met	Lys	Lys	Ile	Tyr	Lys	Ser	Ile
1				5					10					15	
Thr	Leu	Val	Ala	Ala	Ile	Leu	Ser	Leu	Ser	Ser	Cys	Gly	Asn	Asp	Trp
		20						25					30		
Leu	Asp	Arg	Lys	Pro	Ala	Asp	Gly	Ile	Pro	Ser	Glu	Asp	Ala	Ile	Thr
		35					40					45			
Asn	Tyr	Asn	Asp	Ala	Leu	Thr	Ala	Arg	Thr	Gly	Met	Tyr	Asp	Gly	Ile
	50					55					60				
Gln	Gly	Asn	Ser	Asn	Ala	Thr	Ser	Tyr	Tyr	Gly	Ala	Arg	Met	Phe	Tyr
65					70					75				80	
Tyr	Gly	Asp	Val	Arg	Ala	Asp	Asp	Met	Gln	Ala	Arg	Thr	Gln	Gly	Met
				85					90					95	
Arg	Ser	Ser	Ser	Cys	Tyr	Glu	Met	Leu	Tyr	Thr	Val	Asp	Asp	Ala	Pro
			100					105						110	

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Asn Met Trp Asn Ile Pro Tyr Asn Val Ile Arg Arg Ala Asn Arg Leu
    115                      120                      125
Ile Glu Ala Ile Asn Glu Lys Lys Val Thr Asp Ala Thr Glu Ala Gln
    130                      135                      140
Ile Gly Lys Ile Tyr Ser Glu Ala Leu Val Val Arg Ala Leu Val His
    145                      150                      155                      160
Phe Asp Leu Val Arg Ile Tyr Gly Met Pro Tyr Thr Ala Asp Asn Gly
                      165                      170                      175
Ala Ser Leu Gly Val Pro Val Ile Val Lys Pro Leu Glu Arg Asn Asp
    180                      185                      190
Leu Pro Ser Arg Asn Thr Val Ala Glu Val Tyr Thr Gln Val Ile Thr
    195                      200                      205
Asp Leu Thr Asp Ala Ile Asn Ser Gly Tyr Leu Ala Lys Asp Gln Thr
    210                      215                      220
Pro Gly Tyr Ile Asn Glu Trp Ala Ala Lys Ala Leu Leu Thr Arg Val
    225                      230                      235                      240
Tyr Leu Thr Lys Gly Asp Asn Glu Asn Ala Leu Lys Val Ala Glu Asp
                      245                      250                      255
Ile Ile Thr Asn Ser Pro Tyr Lys Leu Trp Thr Asn Glu Glu Tyr Val
    260                      265                      270
Asn Ala Trp Tyr Lys Ser Asn Gly Ala His Thr Asn Glu Met Ile Phe
    275                      280                      285
Glu Val Val Asn Ala Ser Asn Asp Asp Trp Thr Asp Arg Asn Gly Ile
    290                      295                      300
Ala Tyr Leu Leu Asn Glu Asn Gly Tyr Ala Asp Ala Ile Val Thr Lys
    305                      310                      315                      320
Ser Phe Met Asn Met Leu Ser Gln Asp Pro Lys Asp Val Arg Ile Gly
                      325                      330                      335
Met Val Leu Pro Ala Gln Tyr Asp Lys Asp Leu Gln Glu Glu Tyr Gly
    340                      345                      350
Asp Ala Lys Ile Phe Ile Asn Lys Phe Pro Ala Asp Lys Asp Asp Val
    355                      360                      365
Gly Glu Met Arg Leu Asn Asn Leu Pro Leu Leu Arg Leu Ser Glu Val
    370                      375                      380
Tyr Leu Ser Ala Ala Glu Ala Ala Ala Lys Leu Gly Gly His Gln Asp
    385                      390                      395                      400
Lys Ala Ala Lys Tyr Leu Asn Glu Ile Val Gln Arg Ala Asn Pro Glu
                      405                      410                      415
Ala Lys Ala Ile Ser Glu Ala Asp Ala Thr Val Glu Arg Ile Ile Leu
    420                      425                      430
Glu Arg Arg Lys Glu Met Ile Gly Glu Gly Gln Arg Tyr Phe Asp Ala
    435                      440                      445
Leu Arg Asn Asn Glu Thr Ile Val Arg Tyr Lys Asp Glu Gly Asp Lys
    450                      455                      460
Gly Tyr His Tyr Ser Leu Ile Lys Glu Ser Gln Ser Phe Asp Arg Thr
    465                      470                      475                      480
Tyr Phe Arg Ala Ile Leu Pro Ile Pro Val Asp Glu Thr Asn Val Asn
                      485                      490                      495
Pro Asn Leu Arg Ala Gln Gln Asn Pro Gly Tyr
    500                      505

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<210> 9757

<211> 418

<212> PRT

<213> B.fragilis

<400> 9757

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Asn Lys Ile Ile Tyr Phe Lys Asn Pro Lys Thr Met Lys Ile Arg Asn
1                      5                      10                      15

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Leu Met Leu Ala Leu Ala Gly Thr Ala Leu Val Phe Ser Ala Cys Glu
 20 25 30
 Lys Asp Pro Asn Pro Lys Val Pro Thr Thr Asp Ala Asn Ile Ala Leu
 35 40 45
 Ala Thr Ile Leu Pro Asn Pro Asp Gly Met Thr Gly Ala Ala Tyr Leu
 50 55 60
 Gln Leu Ile Arg Asp Glu Phe Pro Gln Asn Thr Asn Asn Asn Asn Gly
 65 70 75 80
 Ile Pro Ile Pro Tyr Gly Gly Ser Tyr Pro Ile Ile Glu Gly Asn Asp
 85 90 95
 Ile Phe Val Phe Pro Gly Tyr Met Gly Asp Ser Lys Asn Glu Leu Val
 100 105 110
 Lys Tyr Thr Arg Asn Asn Gly Gln Leu Ser Arg Thr Gly Thr Met Lys
 115 120 125
 Leu Pro Pro Asn Ser Ser Ala Thr Asn Ile Val Phe Ala Ser Thr Gly
 130 135 140
 Lys Ala Tyr Leu Ser Met Ala Gly Leu Gly Lys Ile Ala Ile Phe Asp
 145 150 155 160
 Pro Thr Thr Met Thr Gln Gln Gly Glu Ile Asp Leu Thr Ser Leu Gly
 165 170 175
 Val Ser Asp Ser Asn Pro Asp Pro Ser Ala Met Leu Leu Arg Asp Gly
 180 185 190
 Leu Leu Phe Val Gly Leu Ser Gln Met Val Gly Gly Trp Ile Pro Pro
 195 200 205
 Gln Asp Arg Pro Tyr Ser Asp Ile Ala Ile Ile Asp Thr Gln Thr Asp
 210 215 220
 Lys Leu Leu Lys Met Ile Thr Asp Lys Thr Ser Gly Ile Ser Met Pro
 225 230 235 240
 Thr Arg Pro Ile Asp Arg Tyr Ser Ile Phe Met Asp Glu Lys Lys Asp
 245 250 255
 Ile Tyr Ile Ser Cys Met Gly Gly Phe Gly Met Val Lys Gly His Asn
 260 265 270
 Ala Gly Val Leu Arg Ile Lys Ala Gly Glu Thr Glu Phe Asp Pro Thr
 275 280 285
 Tyr Gln Trp Thr Ile Thr Gly Ala Ala Ile Ser Gly Glu Glu Lys Thr
 290 295 300
 Ala Gly Phe Ile Ser Ala Ile Arg Tyr Val Gly Asn Gly Lys Ala Tyr
 305 310 315 320
 Ala Tyr Ile Asn Met Pro Gly Tyr Tyr Lys Pro Gly Glu Gln Gly His
 325 330 335
 Thr Ala Ile Ala Asp Leu Ala Val Glu Ile Asp Leu Tyr Asn Lys Thr
 340 345 350
 Met Lys Lys Val Gln Gly Leu Asp Leu Ser Asn Gly Phe Gly Val Met
 355 360 365
 Leu Ser Leu Tyr Lys Gly Ser Met Leu Ile Gly Asn Ser Ser Ala Lys
 370 375 380
 Ala Lys Gly Ile Tyr Ser Leu Asp Ile Gln Thr Gly Glu Val Ser Lys
 385 390 395 400
 Glu Pro Ile Leu Thr Thr Val Gly Asn Pro Ile Leu Cys Tyr Tyr Phe
 405 410 415
 Glu Lys

<210> 9758

<211> 394

<212> PRT

<213> B.fragilis

<400> 9758

Ser Gln Val Ile Pro Met Arg Ser His Ile Lys Tyr Gln Val Ile Met
 1 5 10 15
 Glu Arg Lys Lys Ile Thr Phe Asp Ser Phe Ile Arg Gly Ser Ile Cys
 20 25 30
 Cys Ala Leu Ile Val Gly Leu Leu Ile Leu Phe Lys Arg Leu Ser Gly
 35 40 45
 Val Leu Leu Pro Phe Phe Val Ala Trp Leu Ile Ala Tyr Met Ile Tyr
 50 55 60
 Pro Leu Val Lys Phe Phe Gln Tyr Lys Leu Arg Phe Lys Ser Arg Ile
 65 70 75 80
 Ile Ser Ile Phe Cys Ala Leu Phe Ser Ile Thr Ile Val Gly Ile Ser
 85 90 95
 Leu Phe Tyr Leu Leu Val Pro Pro Met Leu Ala Glu Met Gly Arg Met
 100 105 110
 Asn Asp Leu Leu Val Thr Tyr Leu Thr Asn Gly Thr Tyr Ser Ser Gly
 115 120 125
 Thr Val Pro Pro Thr Leu Ser Glu Phe Ile His Lys His Ile Asp Leu
 130 135 140
 Gln Ala Leu Asn Arg Ile Leu Ser Glu Glu Asn Ile Met Asn Thr Ile
 145 150 155 160
 Lys Glu Thr Val Pro Lys Leu Trp Ala Leu Val Ala Glu Ser Ile Asn
 165 170 175
 Ile Leu Phe Ser Val Phe Ala Ser Phe Ile Ile Leu Leu Tyr Val Val
 180 185 190
 Phe Ile Leu Leu Asp Tyr Glu Ser Ile Ala Glu Gly Trp Leu His Leu
 195 200 205
 Leu Pro Gly Lys Tyr Arg Thr Phe Ala Ser Asn Leu Val Asn Asp Ile
 210 215 220
 Gln Asp Gly Met Asn Arg Tyr Phe Arg Gly Gln Ala Phe Val Ala Phe
 225 230 235 240
 Cys Val Gly Ile Leu Phe Ser Ile Gly Phe Leu Ile Ile Asp Phe Pro
 245 250 255
 Met Ala Ile Ala Leu Gly Leu Phe Ile Gly Ala Leu Asn Met Val Pro
 260 265 270
 Tyr Leu Gln Ile Ile Gly Phe Leu Pro Thr Ile Val Leu Ala Ile Leu
 275 280 285
 Lys Ala Ala Asp Thr Gly Glu Asn Phe Trp Val Ile Leu Ala Gly Ala
 290 295 300
 Leu Ile Val Phe Ile Val Val Gln Ala Ile Gln Asp Gly Phe Leu Val
 305 310 315 320
 Pro Arg Ile Met Gly Lys Ile Thr Gly Leu Asn Pro Ala Ile Ile Leu
 325 330 335
 Leu Ser Leu Ser Ile Trp Gly Ser Leu Leu Gly Met Leu Gly Met Ile
 340 345 350
 Ile Ala Leu Pro Leu Thr Thr Leu Met Leu Ser Tyr Tyr Gln Arg Phe
 355 360 365
 Ile Ile Asn Lys Glu Lys Ile Lys Tyr Asp Arg His Glu Val Thr Asp
 370 375 380
 Asn Gln Ser Ala Glu Glu Asn Thr Lys Lys
 385 390

<210> 9759

<211> 195

<212> PRT

<213> B.fragilis

<400> 9759

Val Gly Val Met Gly Asn Phe Val Lys Arg Gly Leu Lys Asp Lys Leu
 1 5 10 15

Asp Asn Ser Phe Leu Val Ser Gly Val Leu Pro Lys Gly Val Lys Lys
 20 25 30
 Ile Ile Pro Phe Ser Lys Thr Arg Gly His Ala Gln Gly Ser Arg Pro
 35 40 45
 Met Glu Asp Leu Ser Glu Val Lys Gln Ala Gly Phe Gly Arg Arg Gln
 50 55 60
 Thr Gly Ile Gln Pro Ile Glu Glu Trp Phe Val Lys Ser Val Gly Thr
 65 70 75 80
 Asp Glu Pro Arg Leu Met Pro Ala Val Phe Ala Glu Asp Ala Gly Trp
 85 90 95
 Glu Lys Ile Leu Leu Asp Gln Gln Thr Ile Asp Asn Leu Ala Thr Leu
 100 105 110
 Gln Ile Ala Gly Leu Glu Lys Pro Lys Trp Pro Ala Ala Trp Ile Leu
 115 120 125
 Gln Glu Lys Ala Gly Cys Ala Val Tyr Arg Thr Cys Ile Arg Trp Thr
 130 135 140
 Pro Glu Met Ile Arg Glu Gly Met Thr Val Leu Glu Phe Gly Cys Ile
 145 150 155 160
 Asp Asp Ala Gly Thr Leu Trp Val Asn Gly Val Glu Val Gly Thr His
 165 170 175
 Glu Glu Trp Asp Lys Pro Tyr Val Ile Asn Val Ala Pro Val His Ser
 180 185 190
 Arg Gly Arg
 195

<210> 9760
 <211> 543
 <212> PRT
 <213> B.fragilis

<400> 9760
 Gly Gly Ser Leu Tyr Arg Gly Cys Arg Met Tyr Gly Thr Ile Arg Ala
 1 5 10 15
 Val Met Lys Lys Tyr Leu Tyr Val Leu Ile Ala Trp Met Leu Pro Leu
 20 25 30
 Cys Ser Ile His Ala Gln Ala Pro Val Trp Asn Pro Asp Asn Gly Asn
 35 40 45
 Gly Thr Phe Thr Asn Pro Ile Met Trp Gly Asp Trp Pro Asp Pro Asp
 50 55 60
 Val Ile Arg Val Gly Asp Asp Phe Tyr Phe Val Ser Thr Ser Met His
 65 70 75 80
 Tyr Val Pro Gly Cys Pro Ile Ala Thr Ser Lys Asp Leu Val Asn Trp
 85 90 95
 Lys Met Ala Gly Tyr Ala Val Asp Arg Tyr Asp Glu Asp Ala Arg Tyr
 100 105 110
 Asp Leu Lys Gly Gly Asp Arg Tyr Leu Arg Gly Ser Trp Ala Ala Thr
 115 120 125
 Ile Arg His His Asn Gly Lys Phe Tyr Val Gly Phe Cys Thr Pro Ser
 130 135 140
 Trp Glu Gly Glu Gly Pro Gly His Phe Ser Ile Cys Ile Ala Asp Asp
 145 150 155 160
 Val Lys Gly Pro Trp Glu Arg Thr Ile Phe Pro Glu Tyr Leu Tyr Asp
 165 170 175
 Pro Gly Leu Leu Phe Asp Asp Asp Gly Lys Val Tyr Val Phe His Gly
 180 185 190
 Gln Gly Thr Leu Tyr Val Thr Glu Leu Ala Ser Asp Ala Lys Ser Val
 195 200 205
 Lys Gly Glu Lys Val Lys Ile Trp Asp Lys Arg Phe Lys Asn Ala His
 210 215 220

Glu Phe Gly Gly Gly Tyr Gly Met Glu Gly Ala His Ala Tyr Lys Ile
 225 230 235 240
 Asn Gly Lys Tyr Tyr Leu Thr Cys Pro Ala Gly Gly Thr Glu Gly Trp
 245 250 255
 Gln Ile Cys Leu Arg Ser Asp Asn Ile Tyr Gly Pro Tyr Glu His Lys
 260 265 270
 Leu Ile Met Asn Asp Ser Gly Ser Tyr Pro Pro Asn Gly Leu His Gln
 275 280 285
 Gly Gly Met Val Gln Leu Lys Asn Gly Asp Trp Trp Phe Ile Ile Met
 290 295 300
 Gln Asp Arg Gly Pro Ile Gly Arg Val Pro His Leu Val Pro Val Lys
 305 310 315 320
 Trp Val Asp Gly Trp Pro Met Leu Gly Ser Gly Gly Lys Asp Ile Ile
 325 330 335
 Thr Tyr Pro Lys Pro Glu Val Gly Lys Thr Tyr Pro Phe Ala Ser Pro
 340 345 350
 Ala Thr Thr Asp Glu Phe Asn Thr Ser Ser Leu Gly Leu Gln Trp Gln
 355 360 365
 Trp Asn His Asn Pro Asp Asn Ser Arg Trp Ser Leu Lys Glu Arg Lys
 370 375 380
 Gly His Met Arg Leu Lys Ala Ser Tyr Ala Glu Ser Leu Lys Thr Ala
 385 390 395 400
 Arg Asn Thr Leu Thr Gln Arg Val Gln Gly Pro Ser Ser Glu Ala Thr
 405 410 415
 Val Glu Leu Asp Val Ser Gly Leu Lys Asp Gly Asn Val Ala Gly Phe
 420 425 430
 Gly Val Phe Glu Phe Pro Tyr Ala Tyr Val Ala Val Glu Gln Thr Asn
 435 440 445
 Gly Glu Lys Lys Ile Val Met Cys Asn Asp Gly Gln Thr Ile Glu Thr
 450 455 460
 Ile Asp Arg Phe Glu Gly Asn Lys Ile Trp Ile Arg Ala Arg Val Met
 465 470 475 480
 Asp Val Gly Phe Arg Ala Val Phe Tyr Tyr Ser Thr Asp Gly Lys Tyr
 485 490 495
 Phe Leu Pro Ile Gly Asn Glu Leu Ser Met Gly Leu Gly Leu Val Trp
 500 505 510
 Thr Ala Asn Arg Phe Ala Leu Phe Asn Phe Ser Lys Glu Lys Ala Gly
 515 520 525
 Glu Asp Gly Tyr Thr Asp Phe Asn Trp Phe Arg Phe Thr Asn Lys
 530 535 540

<210> 9761

<211> 339

<212> PRT

<213> B.fragilis

<400> 9761

Leu Lys Gly Ile Met Met Val Thr Arg Leu Met Lys His Asp Leu Cys
 1 5 10 15
 Glu Met Val Leu Glu Trp Pro Met Pro Asn Ile Val Lys Gly Lys Arg
 20 25 30
 Thr Glu Lys Asn Asn Tyr Arg Ile Asp Asn Thr Tyr Leu Lys Ala Thr
 35 40 45
 Phe Glu Glu Ile Ser Thr Pro Leu Phe Ser Ile Met Asp Gln His Ile
 50 55 60
 Ser Ser Glu Glu Pro Ile Lys Ile Tyr Thr Arg Ala Asp Asp Tyr His
 65 70 75 80
 Ala Val Trp Phe Cys Ala Thr Phe Ala Gly His Ala Thr Cys Cys Tyr
 85 90 95

Asn Ser Val Ile Arg Ser Glu Glu Trp Asn Lys Gly Asp Ala Asn Leu
 100 105 110
 Leu Lys Cys Asp Gly Val Asp Ser Cys Val His Phe Pro Lys Asn Thr
 115 120 125
 Pro Phe His Met Met Glu Ile Met Leu Ser His Asp Tyr Leu Arg Glu
 130 135 140
 Leu Ala Ile His Tyr Pro Asp Leu Leu Gly Gly Lys Asp Phe Glu Thr
 145 150 155 160
 Val Leu Cys Asp Gly Gln Tyr Arg Ala Tyr Arg Lys Asn Arg Pro Phe
 165 170 175
 Gly Pro Gly Val Tyr Lys Ala Leu His Asp Ile Arg Phe Ser Gln Leu
 180 185 190
 Asn Gly Asn Met Ala Ser Met Tyr Ala Asp Ala Lys Ile Arg Glu Ile
 195 200 205
 Leu Ser Leu Phe Leu Ala Gly Gln Glu Glu Glu Asn Tyr Leu His Cys
 210 215 220
 Ser Cys Thr Ile Gly Ile Thr Cys Asp Lys Ile His His Ala Arg Ala
 225 230 235 240
 Ile Ile Glu Gln Glu Tyr Leu Asn Pro Pro Ser Leu His Gln Leu Ala
 245 250 255
 Leu Arg Val Gly Thr Asn Glu Cys Thr Leu Lys Arg Gly Phe Lys Thr
 260 265 270
 Val Phe Gly Thr Thr Val Phe Gly His Ile Phe Glu Tyr Arg Met Lys
 275 280 285
 Met Ala Cys Arg Tyr Leu Leu Asp Ser Ser Lys Thr Ile Gln Glu Ile
 290 295 300
 Gly Ala Cys Val Gly Tyr Glu Tyr His Ala His Phe Ser Thr Ala Phe
 305 310 315 320
 Lys Arg Lys Phe Gly Leu Thr Pro Leu Glu Tyr Arg Cys Ser Arg Leu
 325 330 335
 Ser Gly Ser

<210> 9762
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 9762
 Ser Glu Pro Val Thr Glu Leu Lys Val Ser Lys Ser Val Asp Asp Glu
 1 5 10 15
 Ile Gly Ile Pro Ser Thr Thr Tyr Asn Gly Val Leu Ser Pro Val Asn
 20 25 30
 Glu Arg Glu Pro Arg Ile Val Ile Leu Glu Glu Ala Pro Gly Ile Pro
 35 40 45
 Asp Asp Gly Asp Ile Ser Thr Pro Glu Thr Leu Pro Cys Lys Ala Leu
 50 55 60
 Glu Arg Leu Leu Leu Glu Ala
 65 70

<210> 9763
 <211> 242
 <212> PRT
 <213> B.fragilis

<400> 9763
 Phe Glu Arg Val Asp Gly Thr Ile Val Thr Phe Ile Asp Ile Leu Tyr
 1 5 10 15
 Phe Cys Val Gln Tyr Arg Thr His Lys Asn Thr Thr Met Asp Thr Leu

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<210> 9764
<211> 189
<212> PRT
<213> B.fragilis
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<400> 9764																
Cys	Asn	Thr	Leu	Phe	Ile	Cys	Ser	Ile	Leu	Pro	Pro	Asn	Asn	Ser	Arg	
1				5					10					15		
Glu	Lys	Arg	Asn	Glu	Ser	Phe	Lys	Leu	Ile	Glu	Arg	Arg	Lys	Ser	Pro	
			20					25					30			
Ala	Val	Leu	Ile	Arg	Ser	Ala	Lys	Met	Gly	Glu	Glu	Ala	Thr	Leu	Val	
			35				40					45				
Ser	Thr	Phe	Thr	Val	Gly	Ser	Ser	Asp	Cys	Gly	Thr	Asp	Thr	Asp	Ser	
	50					55					60					
Asn	Thr	Ser	Ser	Phe	Ser	Ala	Thr	Gly	Ser	Ser	Ser	Thr	Val	Gly		
65					70				75					80		
Ser	Cys	Ser	Ile	Thr	Ala	Ser	Asp	Lys	Leu	Asn	Gly	Pro	Gly	Ser	Thr	
				85					90					95		
Ala	Ser	Trp	Glu	Ser	Ser	Ala	Thr	Ala	Ala	Ser	Ser	Phe	Phe	Ser	Gly	
			100					105					110			
Met	Ser	Ala	Thr	Val	Ser	Phe	Lys	Ala	Gly	Ile	Ser	Thr	Thr	Ser	Ile	
		115					120					125				
Val	Ser	Val	Thr	Gly	Leu	Phe	Ser	Gly	Leu	Ser	Glu	Ala	Ser	Ala	Ala	
		130				135					140					
Ile	Thr	Gly	Phe	Ala	Ser	Asn	Ser	Ser	Asn	Asn	Ala	Ser	Asn	Arg	Pro	
145					150					155					160	
Arg	Ile	Cys	Thr	Ile	Phe	Leu	Arg	Ala	Thr	Pro	Arg	Lys	Thr	Glu	Ser	
				165					170					175		
Gly	Ser	Arg	Glu	Met	Ile	Ser	Ile	Arg	Tyr	Leu	Ser	Ser				

180

185

<210> 9765
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 9765

Asp	Leu	Ala	Phe	Asn	Phe	Ser	Lys	Ile	Asp	Asn	Tyr	Val	Asp	Lys	Leu
1				5					10					15	
Ala	Pro	Gly	Val	Ser	Ser	Ile	Met	Leu	Gly	Gly	Phe	Val	Asp	Pro	Gln
			20					25					30		
Val	Arg	Leu	Ser	Ala	Gly	Asp	Lys	Phe	Pro	Val	Ile	Tyr	Gly	Thr	Ser
		35					40					45			
Tyr	Gln	Arg	Asn	Glu	Glu	Gly	Gln	Ile	Val	Val	Asp	Glu	Asn	Gly	Met
	50					55					60				
Pro	Thr	Leu	Gly	Glu	Asn	Arg	Val	Leu	Gly	Asn	Val	Ser	Pro	Asp	Phe
65				70						75				80	
Arg	Met	Gly	Phe	Asn	Thr	Thr	Phe	Glu	Phe	Tyr	Lys	Phe	Arg	Leu	Ser
				85					90					95	
Ala	Val	Leu	Asp	Trp	Lys	Gln	Gly	Gly	Cys	Met	Tyr	Ala	Gly	Ser	Val
			100					105					110		
Ser	Thr	Leu	Asp	Tyr	Tyr	Gly	Val	Thr	Gln	Lys	Ser	Ala	Asn	Tyr	Arg
		115					120					125			
Lys	Ala	Asp	His	Phe	Tyr	Phe	Glu	Lys	Pro	Ala	Val	Lys	Gln	Leu	Ala
	130					135						140			
Asp	Gly	Ser	Tyr	Ala	Pro	Asn	Asp	Ile	Lys	Ile	Ser	Gly	Glu	Asn	Ala
145				150						155				160	
Tyr	Asn	Tyr	Phe	Asp	Arg	Leu	Ser	Thr	Ile	Ser	Glu	Ala	Gly	Val	Tyr
				165					170					175	
Gly	Ser	Ser	Phe	Leu	Lys	Leu	Arg	Glu	Ile	Ala	Leu	Ser	Tyr	Pro	Val
			180					185					190		
Leu	Asn	Lys	Ser	Tyr	Leu	Gly	Val	Thr	Val	Asn	Val	Phe	Ala	Arg	Asn
	195						200					205			
Leu	Leu	Leu	Trp	Ser	Glu	Met	Asp	Asn	Gly	Ile	Asp	Pro	Glu	Ser	Ser
	210					215					220				
Gln	Gly	Asn	Asn	Asn	Met	Ala	Gly	Ala	Phe	Glu	Arg	Phe	Ser	Leu	Pro
225					230					235					240
Gly	Thr	Ser	Ser	Tyr	Gly	Phe	Gly	Ile	Thr	Val	Lys	Phe			
				245					250						

<210> 9766
 <211> 1360
 <212> PRT
 <213> B.fragilis

<400> 9766

Cys	Ile	Ile	Ser	Asn	Met	Lys	Tyr	Ile	Tyr	Arg	Thr	Tyr	Leu	Ser	Leu
1				5					10					15	
Leu	Tyr	Phe	Leu	Cys	Leu	Leu	Phe	Cys	Leu	Pro	Leu	Lys	Val	His	Ala
			20					25					30		
Tyr	Ser	Leu	Arg	Gln	Phe	Ser	Asn	Arg	Asp	Gly	Leu	Ser	Asn	Ser	Ala
		35					40					45			
Ile	Leu	Ser	Leu	Tyr	Gln	Asp	Asp	Arg	Gly	Ile	Ile	Trp	Ile	Gly	Ser
	50					55					60				
Cys	Asp	Gly	Met	Asn	Ile	Phe	Asp	Gly	Thr	Asp	Ile	His	Leu	Tyr	Thr
65				70						75				80	
Pro	Ile	Asn	Ser	Ser	Lys	Thr	Leu	Leu	Ser	Gly	Asn	Leu	Ile	Asn	Gln
				85					90					95	

Ile	Ile	Glu	Ser	Glu	Lys	Asp	Ile	Leu	Trp	Val	Gln	Thr	Asn	Tyr	Gly
			100					105					110		
Leu	Asn	Arg	Leu	Asp	Thr	Lys	Gln	Gln	Thr	Ser	Gln	Ser	Phe	Thr	Glu
		115					120					125			
Phe	Lys	Gly	Gln	Tyr	Phe	Met	Ala	Asn	Asn	Lys	Asp	Asp	Met	Leu	Phe
	130					135					140				
Ile	Leu	Lys	Asp	Asp	Gly	Tyr	Leu	Tyr	Tyr	Tyr	Gln	Arg	Glu	Ala	Gln
145				150						155					160
Ser	Phe	Asn	Arg	Leu	Glu	Ile	Pro	Asn	Leu	Glu	Phe	Ser	His	Val	Leu
				165					170				175		
Ser	Met	Thr	Val	Asp	Ser	Asn	Asp	Ile	Leu	Trp	Ile	Phe	Thr	Ser	Asn
			180					185					190		
Glu	Glu	Thr	Gln	Ser	Tyr	Arg	Ile	Glu	Asn	Thr	Lys	Gln	Gly	Leu	Thr
		195					200					205			
Leu	Thr	Arg	Lys	Asn	Leu	Phe	Thr	His	Ser	Cys	Lys	Leu	Tyr	His	Ala
	210					215					220				
Phe	Ala	Glu	Lys	Asp	Met	Ala	Tyr	Phe	Ile	Asp	Glu	Thr	Tyr	Ala	Leu
225				230						235					240
Tyr	Glu	Tyr	Asp	Phe	Asn	Asn	Arg	Gln	Ala	Tyr	Tyr	Ile	Ala	Asp	Leu
			245						250					255	
Arg	Gly	Gln	Ile	Glu	Val	His	Gly	Glu	Val	Ser	Ser	Ile	Ile	Lys	Gln
			260					265					270		
Lys	Asn	Asp	Tyr	Tyr	Ile	Gly	Phe	Lys	Asn	Ser	Gly	Leu	Ile	Val	Leu
		275					280					285			
Lys	Tyr	Met	Ser	Ser	Gln	Lys	Met	Lys	Tyr	Gln	Ile	Gln	Lys	Thr	Glu
	290					295					300				
Ile	His	Ser	Gly	Ile	Phe	Cys	Leu	Met	Lys	Asp	Lys	Phe	Gln	Asp	Ile
305				310						315					320
Val	Trp	Ile	Gly	Thr	Asp	Gly	Gln	Gly	Val	Tyr	Met	Tyr	Tyr	Asn	Asp
			325						330					335	
Thr	Phe	Ser	Ile	Thr	Asn	Thr	Leu	Leu	Asp	Thr	Pro	Val	Tyr	Gln	Ile
			340					345					350		
Ser	Asn	Pro	Val	Arg	Ala	Leu	Tyr	Tyr	Asp	Gln	Glu	Gln	Thr	Leu	Trp
		355					360					365			
Ile	Gly	Thr	Lys	Gly	Ser	Gly	Ile	Leu	Arg	Ile	Lys	Lys	Tyr	Thr	Pro
	370					375					380				
Asp	Asn	Ser	Met	Pro	Met	Ser	Ser	Asp	Arg	Ile	Thr	Pro	Tyr	Asn	Ser
385				390						395					400
Ala	Leu	Ala	Asp	Asn	Ser	Val	Tyr	Cys	Phe	Ala	Pro	Gly	Tyr	Lys	Asp
			405						410					415	
Lys	Leu	Trp	Ile	Gly	Thr	Glu	Asn	Gly	Ile	Asn	Tyr	Tyr	Ser	Tyr	Leu
			420					425					430		
Ser	Arg	Gln	Leu	Lys	Glu	Leu	Pro	Ile	Ile	Ala	Asn	Gly	Glu	Lys	Val
		435					440					445			
Lys	Tyr	Val	His												

					565					570					575	
Leu	Cys	Thr	Lys	Ala	Asp	Leu	Phe	Leu	Asn	Asn	Thr	Val	His	Gly	Val	
			580					585					590			
Leu	Glu	Asp	His	Gln	Gly	Asp	Leu	Trp	Leu	Ser	Thr	Asn	Gln	Gly	Leu	
		595					600					605				
Ile	Arg	Phe	Asn	Pro	Glu	Thr	Arg	Thr	Gly	Gln	Thr	Tyr	Asn	Ser	Gly	
	610					615					620					
Asn	Gly	Leu	Glu	Ile	Thr	Glu	Phe	Ser	Asp	Gly	Ala	Phe	Tyr	Lys	Asp	
625					630					635					640	
Val	Val	Ser	Glu	Thr	Leu	Phe	Phe	Gly	Gly	Thr	Asn	Gly	Phe	Ile	Ser	
				645					650						655	
Ile	Gln	Thr	Asn	Asp	Cys	Ile	Thr	Glu	Glu	Tyr	Met	Pro	Gln	Ile	Thr	
			660					665					670			
Leu	Lys	Gly	Leu	Ser	Ile	Phe	Gly	Lys	Glu	His	Asn	Ile	His	Lys	Phe	
		675					680					685				
Leu	Tyr	Glu	Lys	Glu	Gly	Lys	Thr	Ile	Leu	Gln	Leu	Asp	Tyr	Ser	Gln	
	690				695						700					
Asn	Phe	Phe	Gln	Leu	Asn	Phe	Met	Ala	Ile	Asp	Tyr	Ile	Asn	Gly	Asn	
705					710					715					720	
Asn	Tyr	Ser	Phe	Tyr	Tyr	Lys	Leu	Glu	Glu	Met	Ser	Asn	Gln	Trp	Ile	
				725					730						735	
Glu	Asn	Gly	Thr	Ser	Thr	Ser	Ala	Ile	Phe	Ser	Asn	Leu	Ala	Pro	Gly	
			740					745					750			
Glu	Tyr	Ser	Leu	Leu	Val	Lys	Tyr	Lys	Asn	Asn	Ile	Asn	Gly	Gln	Glu	
		755					760					765				
Ser	Gln	Thr	Gln	Ser	Val	Ile	Ile	Arg	Ile	Thr	Pro	Pro	Trp	Tyr	Leu	
	770					775					780					
Ser	Pro	Leu	Ala	Tyr	Met	Val	Tyr	Phe	Ile	Leu	Phe	Ala	Leu	Leu	Cys	
785					790					795					800	
Thr	Ala	Gly	Ile	Tyr	Arg	Leu	Ile	Tyr	Ile	Tyr	Arg	Arg	Lys	Gln	His	
				805					810						815	
Arg	Met	Leu	Asp	Lys	Met	Asn	Arg	Glu	Lys	Lys	Glu	Glu	Ile	Tyr	Glu	
			820					825					830			
Ser	Lys	Leu	Arg	Phe	Phe	Thr	Asn	Ile	Thr	His	Glu	Phe	Cys	Thr	Pro	
		835					840					845				
Leu	Thr	Leu	Ile	Tyr	Gly	Pro	Cys	Glu	Lys	Ile	Leu	Ala	Asn	Pro	Glu	
	850					855					860					
Ile	Asp	Ala	Tyr	Thr	Gln	Lys	Tyr	Ala	Lys	Met	Ile	Gln	Gln	Asn	Thr	
865					870					875					880	
Glu	Lys	Leu	Asn	Asn	Leu	Ile	Leu	Glu	Leu	Leu	Glu	Phe	Arg	Arg	Leu	
				885					890						895	
Glu	Thr	Gly	Asn	Lys	Val	Leu	Ser	Ile	Gln	Gln	Leu	Ser	Val	Ser	Glu	
			900					9								

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Ser Val Leu Tyr Glu Met Thr Thr Phe Thr Val Thr Leu Pro Asn Leu
      1045                      1050                      1055
Pro Ile Thr Glu Arg Asp Thr Thr Gln Thr Thr Tyr Glu Thr Arg Leu
      1060                      1065                      1070
Leu His Thr Ala Thr Glu Glu Pro Ile Val Leu Glu Lys Thr Ala Ile
      1075                      1080                      1085
Glu Phe Asp Met Gly Lys Arg Thr Ile Met Val Ile Asp Asp Asp Asn
      1090                      1095                      1100
Ser Met Leu Trp Phe Val Ser Glu Leu Phe Ala Asp Lys Tyr Asn Val
      1105                      1110                      1115                      1120
Arg Ser Phe Asp Asn Ala Lys Asp Ala Leu Ser Ser Leu Glu Gln Lys
      1125                      1130                      1135
Gln Pro Asp Leu Ile Ile Ser Asp Val Met Met Pro Gly Ile Asp Gly
      1140                      1145                      1150
Leu Ser Phe Ala Gln Lys Ile Lys Gln His Lys Leu Trp Ser His Ile
      1155                      1160                      1165
Pro Leu Ile Leu Leu Ser Ala Leu His His Glu Asp Asp Gln Val Lys
      1170                      1175                      1180
Gly Ile Glu Ser Gly Ala Glu Ala Tyr Val Thr Lys Pro Phe Asn Val
      1185                      1190                      1195                      1200
Lys Tyr Leu Glu Lys Ile Val Tyr Arg Leu Ile Lys Arg Glu Ala Asp
      1205                      1210                      1215
Leu Lys Glu Tyr Tyr Ser Ser Ile Phe Ser Ser Phe Thr Met Glu His
      1220                      1225                      1230
Gly Asn Cys Ile His Lys Glu Asp Gln Glu Phe Leu Asp Lys Met Leu
      1235                      1240                      1245
Glu Ile Ile Glu Lys Asn Ile Ala Asn Pro Asp Leu Gln Val Glu Leu
      1250                      1255                      1260
Leu Ser Ser Glu Met Gly Tyr Ser Thr Arg Gln Phe Tyr Arg Lys Leu
      1265                      1270                      1275                      1280
Lys Pro Ile Thr Glu Gln Ser Pro Ala Asp Ile Ile Lys Glu Tyr Arg
      1285                      1290                      1295
Leu Thr Met Ala Glu Arg Leu Leu Ile Ala Lys Asn Leu Thr Ile Glu
      1300                      1305                      1310
Glu Ile Met Asp Gln Thr Gly Phe Asn Asn Arg Gly Thr Phe Tyr Lys
      1315                      1320                      1325
Leu Phe Ser Lys Arg Tyr Gly Met Pro Pro Arg Gln Tyr Arg Glu Gln
      1330                      1335                      1340
Gln Lys Glu Asn Val Lys Lys Glu Lys Ile Ser Gly Ile Ser Asp Glu
      1345                      1350                      1355                      1360

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<210> 9767

<211> 221

<212> PRT

<213> B.fragilis

<400> 9767

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Phe Val Lys Ser Ile Asn Leu Lys Ile Met Ile Arg Leu Val Ala Phe
1      5      10      15
Asp Leu Asp Gly Thr Ile Gly Asp Thr Ile Pro Leu Cys Leu Ala Ala
20     25     30
Phe Arg Glu Ala Thr Thr Pro Tyr Val Asp His Glu Leu Ser Asp Asp
35     40     45
Glu Ile Ala Arg Thr Phe Gly Leu Asn Glu Glu Gly Met Ile Asn Gln
50     55     60
Val Val Ser Gly Asn Ser Arg Glu Lys Ala Leu Asn Asp Phe Tyr Val
65     70     75     80
Ile Tyr Glu Glu Met His Ala Ile Leu Cys Pro Lys Pro Phe Glu Gly
85     90     95

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Met Lys Thr Leu Ile Gly Gln Leu His Glu Arg Asn Val Ile Val Val
      100              105              110
Leu Ile Thr Gly Lys Gly Ile Arg Ser Cys Asp Ile Thr Leu Lys Gln
      115              120              125
Phe Gly Met Asp Gly Cys Phe Asp Arg Ile Glu Thr Gly Ser Ser Glu
      130              135              140
Lys Asn Arg Lys Ser Glu Ala Met Lys Ala Ile Ser Leu Tyr Tyr Gly
      145              150              155              160
Phe Lys Ser Asn Glu Met Ile Tyr Val Gly Asp Ala Val Ser Asp Ile
      165              170              175
Glu Ala Cys Asn Ser Val Lys Ile Gln Cys Leu Ser Ala Ala Trp Ala
      180              185              190
Ala Ser Thr Asp Cys Glu Gln Leu Glu Lys Tyr Asn Ser Gly Tyr Val
      195              200              205
Phe Ser Ser Val Arg Leu Leu Arg Asp Phe Leu Leu Cys
      210              215              220

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<210> 9768

<211> 159

<212> PRT

<213> B.fragilis

<400> 9768

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1      5      10      15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20      25      30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
      35      40      45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
      50      55      60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
      65      70      75      80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
      85      90      95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
      100      105      110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
      115      120      125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
      130      135      140
Val Ser Ser Pro Arg Gly Trp Lys Asp Pro Arg Val Gly Gln Gln
      145      150      155

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<210> 9769

<211> 431

<212> PRT

<213> B.fragilis

<400> 9769

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1      5      10      15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
      20      25      30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
      35      40      45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
      50      55      60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser

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65          70          75          80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
      85          90          95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
      100         105         110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
      115         120         125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
      130         135         140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
      145         150         155         160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
      165         170         175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
      180         185         190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
      195         200         205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
      210         215         220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
      225         230         235         240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
      245         250         255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
      260         265         270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
      275         280         285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
      290         295         300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
      305         310         315         320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
      325         330         335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
      340         345         350
Met Ala Glu Asn Thr Val Phe Leu Leu Thr Ala Leu Ile His Asn
      355         360         365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
      370         375         380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
      385         390         395         400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
      405         410         415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
      420         425         430

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<210> 9770

<211> 188

<212> PRT

<213> B.fragilis

<400> 9770

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Val Leu Phe Tyr Leu Ser Ser Ile Val Ser Leu Gly Tyr Ile Tyr Asn
1          5          10          15
Leu Pro Phe Thr Lys Leu Ala Ile Leu Asp Asn Gly Thr Asn Lys Lys
      20          25          30
Gln Ala Ile Phe Ala Leu Ser Ile Lys Leu Leu Gln Phe Ile Met Glu
      35          40          45
Lys Asp Phe Gln Ile Pro Thr Leu Glu Ala Ile Glu Ser Leu Met Gly

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50	55	60
Lys Gly Leu Tyr Gln Ile Trp Asn Ala Leu Cys Leu Leu Ile Glu His		
65	70	75
Lys Tyr Glu Met Glu Arg Leu Trp Asn Ser Gly Gly Arg Lys Trp Asn		80
	85	90
Tyr Glu Tyr Lys Tyr Arg Arg Gly Gly Lys Thr Leu Cys Ala Leu Tyr		95
	100	105
Ala Lys Glu Asn Ser Phe Gly Phe Met Val Ile Leu Gly Lys Gly Glu		110
	115	120
Arg Asp Lys Phe Glu Met Ser Arg Glu Leu Phe Ser Lys Glu Val Gln		125
	130	135
Arg Leu Tyr Asp Glu Ala Thr Val Tyr His Asp Gly Lys Trp Ile Met		140
	145	150
Phe Glu Leu Arg Asn Thr Gly Leu Phe Ser Asp Ile Glu Arg Leu Leu		155
	160	165
	165	170
Glu Ile Lys Arg Leu Pro Asn Arg Lys Ser Leu Ser		175
	180	185

<210> 9771

<211> 500

<212> PRT

<213> B.fragilis

<400> 9771

Leu Lys Phe Leu Asn Tyr Met Gln Ile Lys Lys Leu Phe Ile Ala Leu		
1	5	10
Gly Ile Val Leu Pro Leu His Met Gln Gly Gln Asn Phe Leu Ile Lys		15
	20	25
Asp Ala Pro Glu Val Ile Glu Ser Tyr Val Asn Gln Phe Asn Arg Glu		30
	35	40
Asp Asn Glu Leu Tyr Lys Gln Asp Ile Pro Asn Cys Gly Ala Ser Asp		45
	50	55
Phe Leu Arg Lys Asn Ile Pro Phe Phe Glu Cys Pro Asp Lys Glu Leu		60
	65	70
Glu Lys Thr Tyr Tyr Phe Arg Trp Trp Thr Tyr Arg Lys His Ile Lys		75
	85	90
Lys Thr Pro Asp Gly Phe Val Ile Thr Glu Phe Leu Pro Asp Val Pro		95
	100	105
Trp Ala Gly Lys Tyr Asn Thr Ile Ser Cys Ala Ala Asn His His Phe		110
	115	120
Tyr Glu Gly Arg Trp Leu Arg Asn Ala Glu Ile Leu Ser Asp Tyr Ala		125
	130	135
Ser Phe Trp Phe Ser Gly Ser Gly Ser Pro Arg Leu Tyr Ser Phe Gly		140
	145	150
Ala Ala Asp Ala Ile Tyr Asn Tyr Tyr Leu Ile His Asn Asp Lys Met		155
	160	165
	165	170
Leu Leu Ala Asp Leu Tyr Pro Lys Leu Lys Asp Asn Phe Ala Lys Trp		175
	180	185
Glu Glu Glu Lys Arg Asp Ser Thr Gly Met Phe Trp Gln Val Asp Asp		190
	195	200
Arg Asp Gly Met Glu Met Ser Val Ser Gly His Leu Ser Glu Gly Gly		205
	210	215
Arg Gly Tyr Arg Pro Thr Ile Asn Ser Tyr Met Tyr Gly Glu Ala Val		220
	225	230
Ala Leu Ala Lys Ile Ala Ser Ile Val Asp Arg Asp Met Glu Ala Arg		235
	240	245
	245	250
Thr Tyr Gln Lys Lys Ala Asp Lys Leu Lys Gly Ile Ile Asn Arg Arg		255
	260	265
	265	270
Leu Trp Asp Lys Gln Ala Asp Phe Tyr Lys Val Ile Pro Leu Asn Gly		

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      275              280              285
Lys Met Glu Phe Ser Tyr Ala Arg Glu Leu Leu Gly Tyr Ile Pro Trp
  290              295              300
Phe Tyr Asn Ile Pro Pro Asp Asp Tyr Ser Ile Ala Trp Lys Gln Leu
 305              310              315              320
Phe Asp Ser Lys Gly Phe Glu Ala Ala Tyr Gly Pro Thr Thr Val Glu
      325              330              335
Gln Arg Cys Thr Asp Phe Lys Ile Ser Tyr Glu Gly His Glu Cys Gln
      340              345              350
Trp Asn Gly Pro Ser Trp Pro Tyr Leu Thr Ser Met Thr Leu Thr Ala
      355              360              365
Met Ala Asn Tyr Phe Asn Ser Tyr Asp Ser Pro Ile Ile Thr Lys Lys
      370              375              380
Asp Tyr Leu Ser Leu Leu Asn Ile Tyr Ser Asn Ser His Arg Ile Leu
 385              390              395              400
Ser Val Asn Asn Asp Thr Ile Cys Trp Ile Asp Glu Asn Ile Asn Pro
      405              410              415
Tyr Thr Gly Asp Trp Ile Ser Arg Thr Arg Leu Lys Ser Trp Lys Asn
      420              425              430
Gly Thr Trp Asp Asp Ser Lys Gly Gly Val Glu Arg Gly Lys Asp Tyr
      435              440              445
Asn His Ser Ser Phe Cys Asn Leu Ile Ile Ser Gly Leu Met Gly Val
      450              455              460
Arg Pro Gln Glu Asp Gly Ser Ile Ile Ile Asn Pro Leu Val Pro Asp
 465              470              475              480
Gly Cys Trp Asp Tyr Phe Cys Leu Asp Asn Val Tyr Cys Gln Gly Lys
      485              490              495
Thr Ile Ile Pro
      500

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<210> 9772

<211> 301

<212> PRT

<213> B.fragilis

<400> 9772

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Val Tyr Tyr Tyr Val Leu Leu Phe Val Ile Ser Val Lys Leu Arg Phe
 1              5              10              15
Leu Asp Tyr Ile Cys Leu Met Lys Arg Glu Asn Leu His Gln Pro Phe
      20              25              30
Glu Ile Ser Phe Ser Glu Phe Asp Glu Ser Met Leu Lys Glu His Asp
      35              40              45
His Thr Phe Phe Glu Leu Val Tyr Ile Leu Ser Gly Thr Gly Ile Gln
      50              55              60
Trp Ile Asn Asn Asn Lys Phe Ser Tyr His Asp Gly His Leu Phe Met
      65              70              75              80
Ile Thr Pro Gly Asp Ser His Ser Phe Glu Ile His Ser Thr Thr Lys
      85              90              95
Phe Ile Asn Ile Lys Phe Asn Asp Ile Tyr Ile His Ser Ala Val Phe
      100              105              110
Gly Thr Glu Asn Ile Lys Arg Leu Glu Phe Ile Leu Gln His Ala Asn
      115              120              125
His Gln Pro Gly Cys Ile Leu Arg Asn Arg Thr Asp Lys Leu Leu Val
      130              135              140
Lys Pro Met Ile Glu Ala Ile Ile Arg Glu Tyr Val Asn Arg Asn Leu
      145              150              155              160
Tyr Ser Lys Glu Ile Ile Thr Gln Leu Ile Asn Thr Ile Ile Ile Val
      165              170              175
Val Ala Arg Asn Ile Ala Met Phe Leu Pro Glu Gln Val Asn Glu Cys

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<210> 9773
<211> 465
<212> PRT
<213> B.fragilis
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Ile	Thr	Leu	Tyr	Ser	Asn	Tyr	Leu	Lys	Phe	Met	Leu	Asn	Thr	Glu	Asn
1				5					10					15	
Ile	Gln	Pro	Leu	Ile	Asp	Ser	Gly	Glu	Gly	Tyr	Asn	Val	Glu	Phe	Lys
			20					25					30		
Val	Arg	Val	Pro	Ser	Lys	Val	Arg	Glu	Leu	Thr	Glu	Glu	Ile	Cys	Ala
		35					40					45			
Phe	Ala	Asn	Ala	Asp	Gly	Gly	Tyr	Leu	Leu	Ile	Gly	Val	Asp	Asn	Asn
	50					55					60				
Gly	Gln	Val	Ile	Asp	Ile	Asn	Leu	Glu	Asn	Asp	Lys	Arg	Ser	Ala	Ile
65				70					75						80
Gln	Gly	Ser	Ile	Ser	Glu	Ile	Ser	Pro	Ala	Leu	His	Cys	Glu	Leu	Tyr
			85						90					95	
Pro	Val	Asn	Val	Gly	Asn	Lys	Thr	Val	Trp	Val	Ile	Asp	Val	Pro	Ser
			100					105					110		
Gly	Lys	Asp	Lys	Pro	Tyr	Ile	Phe	Ser	Gly	Ser	Ile	Tyr	Val	Arg	Glu
		115					120					125			
Gly	Ala	Asn	Ser	Gln	Lys	Leu	Arg	Thr	Ala	Glu	Glu	Met	Arg	Ser	Phe
	130					135					140				
Phe	Gln	Glu	Cys	Asn	Lys	Ile	Phe	Phe	Asp	His	Ile	Pro	Cys	His	Trp
145				150					155						160
Phe	Asn	Ile	Tyr	Thr	Asp	Ala	Asp	Glu	Gln	Met	Ile	Lys	Asp	Phe	Arg
			165						170					175	
Thr	Glu	Ala	Lys	Leu	Ser	Ser	Ser	Thr	Pro	Asp	Lys	Gln	Ile	Phe	Glu
			180					185					190		
Asn	Leu	Glu	Leu	Phe	Thr	Glu	Asn	Gly	Thr	Ala	Lys	Asn	Gly	Ala	Ala
		195					200					205			
Met	Phe	Phe	Gly	Lys	Gln	Pro	Glu	Arg	Lys	Phe	Pro	His	Ala	Val	Thr
	210					215					220				
Arg	Cys	Val	Leu	Phe	Lys	Gly	Thr	Asn	Lys	Val	Tyr	Ile	Ile	Asp	Asp
225				230					235					240	
Lys	Thr	Phe	Gly	Gly	Ser	Leu	Tyr	Gln	Gln	Tyr	Leu	Gln	Ala	Met	Ser
			245						250					255	
Trp	Leu	Glu	Ser	Lys	Leu	Gln	Val	Ala	Tyr	Lys	Ile	Glu	Gly	Ala	Gly
			260					265					270		
Pro	Arg	Glu	Glu	Ile	Trp	Glu	Ile	Pro	Leu	Thr	Val	Phe	Lys	Glu	Ala
		275					280					285			
Ile	Ile	Asn	Ala	Leu	Ser	His	Arg	Asp	Tyr	Tyr	Glu	Gln	Gly	Ala	Ser

290		295		300
Ile Met Ile Glu Met Phe	Asp Asp Arg Val Glu	Ile Ser Asn Pro Gly		
305	310	315	320	
Gly Leu Leu Pro Ile Val	Ala Lys Asn Phe Gly	His Lys Ser Met Thr		
	325	330	335	
Arg Asn Pro Leu Ile Phe	Gly Leu Phe Thr Arg	Ile His Leu Val Glu		
	340	345	350	
Arg Val Ala Ser Gly Ile	Pro Arg Met Gln Glu	Ala Met Arg Glu Ala		
	355	360	365	
Asn Leu Pro Glu Pro Glu	Phe His Thr Glu Gly	Met Phe Thr Val Val		
	370	375	380	
Phe Lys Arg Ala Ile Ser	Ile Lys His Asp Thr	Val Asn Asp Thr Val		
385	390	395	400	
Asn Asp Thr Ile Asn Ser	Lys Glu Lys Glu Val	Leu Lys Ile Ile Lys		
	405	410	415	
Gln Tyr Pro Gly Leu Asn	Ser Ser Lys Ile Ala	Glu Leu Ile Asn Lys		
	420	425	430	
Ser Val Pro Thr Ala Lys	Arg Tyr Leu Asn Ser	Leu Val Arg Leu Asp		
	435	440	445	
Leu Ile Glu Phe Lys Gly	Ala Gln Lys Thr Gly	Gly Tyr Tyr Leu Lys		
	450	455	460	

Ile

465

<210> 9774

<211> 83

<212> PRT

<213> B.fragilis

<400> 9774

Val Pro Glu Gln Gln Lys	Val Ala Gln Asp Phe	Ala Met Ser Glu Phe
1	5	10
Ser Leu Ile Leu Val Leu	Gln Lys Glu Asn Lys	Gln Asn Ser Asn Met
	20	25
Thr Trp Gln Lys Tyr Lys	Leu Asn Leu Arg Asn	Ser His Leu Leu Glu
	35	40
Glu Phe Phe Gln Ser Trp	Arg Asn Leu Thr Pro	Cys Phe His Pro Leu
	50	55
Ser Thr Gln His Trp Val	Arg Asp Ala Ala Val	Ser Ser Asp Ile Ser
65	70	75
Ser Ala Arg		

<210> 9775

<211> 83

<212> PRT

<213> B.fragilis

<400> 9775

Val Pro Glu Gln Gln Lys	Val Ala Gln Asp Phe	Ala Met Ser Glu Phe
1	5	10
Ser Leu Ile Leu Val Leu	Gln Lys Glu Asn Lys	Gln Asn Ser Asn Met
	20	25
Thr Trp Gln Lys Tyr Lys	Leu Asn Leu Arg Asn	Ser His Leu Leu Glu
	35	40
Glu Phe Phe Gln Ser Trp	Arg Asn Leu Thr Pro	Cys Phe His Pro Leu
	50	55
Ser Thr Gln His Trp Val	Arg Asp Ala Ala Val	Ser Ser Asp Ile Ser
65	70	75

Ser Ala Arg

<210> 9776
 <211> 225
 <212> PRT
 <213> B.fragilis

<400> 9776
 Ile Lys Leu Asn Tyr Ser Val Ala Glu Leu Arg Val Ser Lys Ile Ser
 1 5 10 15
 Lys Glu Asp Ser Leu Val Leu Ile Ser Ala Val Ser Pro Ile Arg Asn
 20 25 30
 Asn Tyr Asn Glu Asn Cys Ile Leu Leu Thr Asn Asp Ala Asp Phe Asn
 35 40 45
 Ser Trp Tyr Glu Gln Ala Lys Asp Lys Ile Asp Asn Val Phe Thr Glu
 50 55 60
 Lys Ser Met Pro Lys Pro His Leu Lys His Ile Lys Ser Ala Gln Leu
 65 70 75 80
 Phe Asp Lys Gln Phe Asn Phe Thr Asp Asn Lys Leu Asp Ile Thr Gly
 85 90 95
 Phe Glu Val Tyr Ala Asn Lys Cys Ile Leu Ser Leu Leu Lys Asn Arg
 100 105 110
 Leu Lys Asp Phe Tyr Ile Gly Lys Ser Phe Thr Pro Tyr Gly Ala Cys
 115 120 125
 Pro Pro Gln Thr Phe Ala Phe Lys Ala Glu Lys Gly Val Tyr Leu His
 130 135 140
 Asn Gln Lys Tyr Val Thr Ile Ile Gly Lys Asp Leu Asn Phe Ile Leu
 145 150 155 160
 Thr Thr Asn Lys Gln Ile Asp Phe Trp His Lys Asn Ala Lys Ile Asp
 165 170 175
 Asp Gln Gly Ile Leu Val Ser Val Arg Asn Gln Ile Tyr Ser Phe Ile
 180 185 190
 Phe Pro Leu Ser Ala Asp Ile Leu Pro Asp Asp Ile Asp Ala Ile Phe
 195 200 205
 His Leu Ile Gln Thr Glu Gly His Phe Val Phe Tyr His Pro Asp Ser
 210 215 220
 Leu
 225

<210> 9777
 <211> 349
 <212> PRT
 <213> B.fragilis

<400> 9777
 Tyr Pro Tyr Leu Cys Phe Ser Leu Ser Val Gly Arg Gly Lys Ser Lys
 1 5 10 15
 Gly Lys Lys Gln Lys Met Asn Met Lys Lys Asn Val Ile Gln Thr Leu
 20 25 30
 Ile Ser Leu Thr Val Ile Ile Gly Ile Cys Ser Cys Thr Thr Ser Pro
 35 40 45
 Lys Lys Thr Ile Gln Lys Glu Glu Ala Thr Gly Lys Trp Val Lys Tyr
 50 55 60
 Glu Asn Asn Pro Val Leu Gly Gly Gly Asp Leu Gly Thr Val Phe Asp
 65 70 75 80
 Ile Cys Val Leu Lys Asp Ser Asp Ser Tyr Lys Met Tyr Ser Ser Trp
 85 90 95
 Arg Pro Gln Lys Ser Ile Ala Leu Ser Thr Ser Lys Asp Gly Lys Asn

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      100      105      110
Trp Ser Ala Pro Gln Ile Val Leu Pro Pro Val Glu Gly Ser Ser Trp
      115      120      125
Glu Ala Asp Met Asn Arg Pro Val Val Val Tyr Lys Asp Gly Leu Tyr
      130      135      140
His Met Trp Tyr Thr Gly Gln Asn Asp Gly Lys Ser Trp Ile Gly Tyr
      145      150      155      160
Ala Ile Ser Lys Asp Gly Tyr Asn Phe Glu Arg Gln Ser Lys Glu Pro
      165      170      175
Val Leu Ser Ala Glu Gln Pro Trp Glu Lys Val Ala Val Met Cys Pro
      180      185      190
His Val Ile Trp Asp Lys His Glu Asn Ile Phe Lys Met Trp Tyr Ser
      195      200      205
Gly Gly Glu Gln Tyr Glu Pro Asp Ala Ile Gly Tyr Ala Thr Ser Lys
      210      215      220
Asp Gly Leu His Trp Thr Lys Trp Asp Lys Asn Pro Ile Phe Lys Ala
      225      230      235      240
Asp Pro Ala Gln Ser Trp Glu Gln His Lys Val Thr Ala Cys Gln Val
      245      250      255
Ile Glu Arg Glu Asn Asp Tyr Leu Met Phe Tyr Ile Gly Phe Tyr Asp
      260      265      270
Ile Asn Phe Ala Gln Ile Gly Met Ala Arg Ser Lys Asp Gly Ile Asn
      275      280      285
Asp Trp Glu Arg Tyr Ser Glu Asn Pro Ile Ile Ser Pro Thr Glu Gly
      290      295      300
Gly Trp Asp Ala Ser Ala Thr Tyr Lys Pro Phe Ala Ile Gln Glu Lys
      305      310      315      320
Asp Cys Trp Met Leu Trp Tyr Asn Gly Arg Asn Glu His Leu Glu Gln
      325      330      335
Ile Gly Leu Ala Ile Tyr Asp Asn His Asp Leu Asn Phe
      340      345

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<210> 9778

<211> 71

<212> PRT

<213> B.fragilis

<400> 9778

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Ser Tyr Leu Asp Leu Tyr Pro Ile Arg Thr Gly Cys Ile Ile Ser Leu
1      5      10      15
Leu Leu Tyr Cys Phe Ala Gly Arg Ser Cys Gly Ala Ser Pro Asp Ser
      20      25      30
Asp Thr Ile Leu Ile Glu Met Ala Ile Ser Ser Gly Glu Asn Ile Tyr
      35      40      45
His Ala Leu Glu Asn Tyr Leu Ser Gly Met Tyr Tyr Leu Cys Glu Pro
      50      55      60
Thr Asn Ala Leu Tyr Leu Thr
65      70

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<210> 9779

<211> 390

<212> PRT

<213> B.fragilis

<400> 9779

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Arg Ser Ile Phe Leu Tyr Tyr His Thr Phe Glu Phe Lys Met Ser Lys
1      5      10      15
Arg Tyr Cys Gln Ser Cys Gly Met Pro Leu Arg Phe Asp Met Glu Glu
      20      25      30

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Trp Leu Gly Thr Asn Leu Asp Gly Ser Lys Ser Asp Thr Phe Cys Tyr
 35 40 45
 Tyr Cys Leu Lys Asp Gly Lys Tyr Thr Val Asp Val Ser Met His Glu
 50 55 60
 Met Ile Asp Ile Trp Leu Lys Tyr Val Asn Lys Tyr Asn Met Tyr Ala
 65 70 75 80
 His Thr Val Tyr Ser Pro Glu Glu Leu Lys Met Ile Leu Glu Lys Arg
 85 90 95
 Leu Pro Thr Leu Asn Arg Trp Lys Gln Lys Gln Asp Thr Lys Asn Val
 100 105 110
 His Asn Gln Ala Ile Gln Ser Ile Val Asn Tyr Ile Ser Asn His Leu
 115 120 125
 Phe Glu Asp Phe Asp Ile Ile Thr Leu Cys Gln Lys Cys Gly Met Ser
 130 135 140
 Glu Tyr His Phe Arg Arg Val Phe Lys Phe Ile Val Gly Glu Asn Ile
 145 150 155 160
 Gly Asn Tyr Ile Gln Arg Leu Arg Leu Glu Tyr Ala Ala His Leu Leu
 165 170 175
 Thr Ser Thr Glu Tyr Thr Leu Ser Arg Ile Ala Glu Leu Ala Gly Tyr
 180 185 190
 Gln Asn Lys Tyr Ser Ile Ala Lys Ala Phe Lys Lys His Phe Gly Val
 195 200 205
 Ser Thr Ser Leu Phe Lys Glu Arg Phe Thr Pro Arg Lys Arg Asn Ala
 210 215 220
 His Thr Ser Leu Thr Pro Arg Ile Ile Met Ile Asn Lys Met Phe Val
 225 230 235 240
 Ser Cys Leu Glu Val Gly Lys Ala Tyr Glu Asn Lys Phe Gln Tyr Lys
 245 250 255
 Met Val Trp Asp Lys Leu Leu Tyr Tyr Ala Arg Phe Asn Arg Ile Asp
 260 265 270
 Lys Lys His Thr Asn Phe Val Ser Leu Ser Leu Asp Asn Pro Ala Ile
 275 280 285
 Thr Pro Glu Asp Lys Cys Arg Phe Tyr Val Gly Ile Ile Met Asn Asp
 290 295 300
 Ile Pro Asp Ala Lys Leu Asn Thr Val Gln Ile Pro Asn Gly Arg Tyr
 305 310 315 320
 Ala Ile Phe Arg His Ile Gly Ser Tyr Asp Phe Leu Cys Asp Leu Tyr
 325 330 335
 Arg Ile Ile Tyr Glu Glu Trp Phe Pro Asp Ser Gln Tyr Tyr Pro Gln
 340 345 350
 Asn Thr Phe Ser Phe Glu Val Tyr Ile Asn Ser Pro Cys Asp Thr Asp
 355 360 365
 Val Pro Glu Leu Ile Thr Asp Ile Tyr Ile Pro Val Leu Lys Lys Lys
 370 375 380
 Ile Phe Thr Asp Ile Lys
 385 390

<210> 9780

<211> 118

<212> PRT

<213> B.fragilis

<400> 9780

Thr Val Ile Arg Glu Arg Thr Lys Leu Ser Arg His Cys Ile Phe Lys
 1 5 10 15
 Glu His Asn Asp Asn Cys Arg Lys Leu Ile Gly Thr Asp Tyr Ala Asn
 20 25 30
 Ile Thr Val Arg His Tyr Asp Asn Cys Leu Lys His Leu Met Lys Leu
 35 40 45

Val Lys Arg Asp Tyr Lys Val Asp Asp Met Leu Leu Arg Glu Val Asn
 50 55 60
 Gly Glu Leu Val Tyr Ile Leu Phe Val Met Phe Leu Ser Asp Lys Val
 65 70 75 80
 Cys Gln Ser Ile Lys Lys Leu Gly Gln Phe Ala Arg Leu Ser Leu Tyr
 85 90 95
 His Val Leu Met Leu Leu Val Thr Ile Ala Tyr Leu Asp Ile Glu Gln
 100 105 110
 Pro Phe Asn Pro Phe Gly
 115

<210> 9781

<211> 112

<212> PRT

<213> B.fragilis

<400> 9781

Lys Arg Phe Gly Met Ser Phe Phe Ile Lys Arg Ser Lys Leu Leu Lys
 1 5 10 15
 Asn Gly Glu Ala Ser Val Cys Val Arg Val Thr Tyr Asp Arg Leu Tyr
 20 25 30
 Val Glu Leu Gln Leu Lys Arg Ser Ile Lys Val Pro Leu Trp Leu Gln
 35 40 45
 Glu Lys Glu Lys Ser Thr Gly Lys Asp Leu Asn Ser Val Glu Leu Asn
 50 55 60
 Tyr Tyr Ile Asp Val Leu Arg Val Lys Phe Tyr Gln Ile Tyr Lys Asn
 65 70 75 80
 Leu Glu Pro Glu Gly Lys Ile Ile Ser Ala Arg Ala Ile Val Asn Arg
 85 90 95
 Tyr Gln Gly Lys Asp Glu Thr Phe Lys Thr Leu Tyr Ile Gln Gly Ala
 100 105 110

<210> 9782

<211> 157

<212> PRT

<213> B.fragilis

<400> 9782

Tyr Ser Met Gly Lys Ile Ser Glu Ile Ala Leu Phe Gln Gln Ser Glu
 1 5 10 15
 Thr Tyr Ala Leu Val Val Glu Ile Arg Thr Thr Val Lys Glu Ile Ala
 20 25 30
 Met Val Ile Gly Arg Ser Phe Met Glu Ile Glu Thr Leu Phe Lys Glu
 35 40 45
 Gln Asn Ala Val Met Ala Asp Val Pro Phe Val Glu Tyr Leu Asn Phe
 50 55 60
 Glu Ser Met Ser Glu Gly Ile His Met Ile Ile Gly Phe Lys Ser Ala
 65 70 75 80
 Lys Val Leu Cys Gly Lys Gly Asn Ile Arg Ala Ile Thr Ile Pro Gly
 85 90 95
 Arg Lys Ile Val Ser Cys Leu His Lys Gly Asn Tyr Thr Glu Leu Ala
 100 105 110
 Ser Leu Tyr Arg Glu Met Gln Glu Trp Ile Ala Ala Lys Gly Tyr Lys
 115 120 125
 Ser Ser Gly Ala Ser Ile Glu Tyr Tyr Tyr Ser Lys Pro Gly Thr Ser
 130 135 140
 Glu Glu Glu Leu Val Thr Lys Val Glu Met Pro Val Leu
 145 150 155

<210> 9783
 <211> 658
 <212> PRT
 <213> B.fragilis

<400> 9783

Lys	Arg	Lys	Gly	Met	Lys	Asn	Lys	Cys	Met	Leu	Val	Val	Ile	Leu	Leu
1				5					10					15	
Ile	Leu	Ser	Gly	Thr	Ala	Phe	Ala	Lys	Ile	Val	Leu	Pro	Pro	Ile	Phe
			20					25					30		
Ser	Asp	Asn	Met	Val	Leu	Gln	Gln	Gln	Thr	Asn	Ala	Pro	Ile	Trp	Gly
		35					40					45			
Glu	Ala	Gln	Pro	Met	Lys	Thr	Val	Lys	Val	Thr	Thr	Ser	Trp	Asp	Gly
	50					55					60				
Lys	Thr	Tyr	Ala	Val	Gln	Ala	Asp	Lys	Ala	Gly	Lys	Trp	Lys	Val	Thr
65					70					75				80	
Val	His	Thr	Pro	Val	Ala	Gly	Gly	Pro	Tyr	Glu	Ile	Ala	Leu	Thr	Asp
				85				90						95	
Gly	Lys	Lys	Val	Asn	Leu	Lys	Asn	Val	Met	Ile	Gly	Glu	Val	Trp	Ile
			100					105					110		
Cys	Ser	Gly	Gln	Ser	Asn	Met	Glu	Met	Pro	Leu	Gly	Gly	Trp	Gly	Lys
		115					120					125			
Ile	Thr	Asn	Tyr	Gln	Lys	Glu	Ile	Ala	Glu	Ala	Gly	His	Ser	Asn	Ile
	130					135					140				
Arg	Leu	Leu	Gln	Ile	Glu	Gln	Ile	Asn	Ser	Thr	Gln	Pro	Glu	Thr	Asn
145					150						155				160
Ile	Lys	Val	Arg	Asn	Asp	Ser	Trp	Gln	Val	Cys	Ser	Pro	Ile	Thr	Ile
				165					170					175	
Pro	Glu	Phe	Ser	Ala	Thr	Ala	Tyr	Phe	Phe	Gly	Arg	Glu	Ile	Ser	Glu
			180					185					190		
Lys	Gln	Asn	Val	Pro	Val	Gly	Leu	Ile	His	Thr	Ser	Trp	Gly	Gly	Thr
	195						200					205			
Asn	Val	Glu	Ser	Trp	Ile	Ser	Gly	Glu	Val	Leu	Lys	Glu	Met	Pro	Glu
	210					215						220			
Phe	Val	Lys	Thr	Val	Glu	Ser	Ile	Gln	Lys	Met	Pro	Gly	Asp	Lys	Lys
225					230						235				240
Ile	Leu	Lys	Ala	Glu	Tyr	Leu	Lys	Glu	Leu	Thr	Ala	Trp	Asn	Asn	Arg
				245					250					255	
Val	Asp	Glu	Gly	Phe	Ala	Glu	Gly	Lys	Pro	Val	Arg	Ala	Ala	Ala	Ser
			260					265					270		
Leu	Asp	Asp	Lys	Asp	Trp	Glu	Ser	Met	Asn	Phe	Pro	Gly	Glu	Val	Gly
		275					280					285			
Pro	Gln	Leu	Ala	Gly	Phe	Asp	Gly	Val	Met	Trp	Val	Arg	Lys	Glu	Ile
	290					295						300			
Glu	Ile	Pro	Ala	Ser	Trp	Ala	Gly	Lys	Asp	Val	Gln	Leu	Ser	Leu	Gly
305					310					315					320
Ala	Ile	Asp	Asp	Asn	Asp	Ile	Thr	Tyr	Trp	Asn	Gly	Ile	Glu	Ile	Gly
				325					330					335	
Arg	Thr	Asp	Gly	Pro	Thr	Leu	Gln	Arg	Lys	Tyr	Ile	Ile	Pro	Glu	Lys
			340					345					350		
Met	Val	Lys	Ala	Gly	Lys	Ala	Ile	Leu	Ala	Ile	Arg	Val	Leu	Asp	Thr
		355					360					365			
Gly	Gly	Asn	Cys	Gly	Ile	Trp	Gly	Asp	Leu	Tyr	Leu	Arg	Ser	Thr	Asn
	370					375					380				
Asp	Glu	Gln	Ile	Ser	Leu	Ser	Gly	Asp	Trp	Lys	Tyr	Gln	Val	Ala	Ala
385					390						395				400
Asp	Thr	His	Lys	Val	Gly	Ala	Leu	Pro	Val	Asp	Arg	Ser	Val	Asp	Pro
				405					410					415	
Asn	Leu	Pro	Thr	Ser	Leu	Tyr	Asn	Ala	Met	Ile	His	Pro	Leu	Ile	Ser

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      420      425      430
Tyr Gly Ile Arg Gly Ala Ile Trp Tyr Gln Gly Glu Asn Asn Ser Ser
      435      440      445
Arg Ala Tyr Gln Tyr Arg Glu Leu Phe Pro Leu Val Ile Glu Asn Trp
      450      455      460
Arg Arg Asp Trp Lys Gln Asp Phe Pro Phe Tyr Phe Val Gln Leu Ala
465      470      475      480
Asn Phe Met His Glu Val Ser Gln Pro Ala Glu Ser Glu Trp Ala Glu
      485      490      495
Leu Arg Glu Ala Gln Met Arg Ala Leu Ala Val Gly Asn Thr Gly Met
      500      505      510
Ala Val Ile Ile Asp Arg Gly Asp Ala Asn Asp Ile His Pro Lys Asp
      515      520      525
Lys Gln Thr Val Gly His Arg Leu Ala Leu Ile Ala Arg Ala Lys Thr
      530      535      540
Tyr Gly Glu Lys Val Pro Tyr Ser Gly Pro Ile Tyr Arg Ser His Gln
545      550      555      560
Ile Val Gly Asn Lys Ile Ile Leu Ser Phe Asp His Thr Asp Gly Gly
      565      570      575
Leu Lys Ser Ser Asp Gly Lys Glu Leu Lys Gly Phe Ala Ile Ala Gly
      580      585      590
Arg Asn His Glu Phe His Trp Ala Lys Ala Glu Ile Asp Gly Asp Lys
      595      600      605
Ile Ile Val Ser Ala Pro Glu Ala Val Pro Tyr Pro Val Ala Val Arg
      610      615      620
Tyr Ala Trp Ala Asn Asn Pro Val Cys Asn Leu Tyr Asn Gly Ala Gly
625      630      635      640
Leu Pro Ala Ser Pro Phe Arg Thr Asp Asp Trp Arg Gly Ile Thr Gln
      645      650      655
Lys Asp

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<210> 9784

<211> 514

<212> PRT

<213> B.fragilis

<400> 9784

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Lys Tyr Asn Ile Met Tyr Lys Ile Thr Leu Lys Asn Ile Lys Ala Ile
1      5      10      15
Thr Asn Leu Glu Phe His Phe Pro Glu Lys Asn Gly Val Tyr Leu Leu
      20      25      30
Thr Gly Thr Asn Gly Cys Gly Lys Thr Thr Leu Leu Ile Ala Leu Asn
      35      40      45
Arg Leu Gly Asp Asn Leu Ala Phe Ser Arg Asn Leu Arg Thr Ser Ser
      50      55      60
Ala Gly Phe Asp Ser Phe Lys Asp Ala Gln Ile Ile Tyr Ser Thr Gln
65      70      75      80
Asn Glu Ser Val Thr Tyr His Arg Thr Gly Ile Arg Trp Val Pro Thr
      85      90      95
Pro Lys Ser Lys Ser Asn Leu Ile Lys Thr Phe Pro Cys Gln Asn Ile
      100      105      110
Leu Tyr Leu Ser Thr Ser Gly Leu Arg Phe Tyr Ala Gln Glu Pro Lys
      115      120      125
Asp Leu Lys Asp Tyr His His Asn Thr Val Ser Asp Glu Ile Ile Asn
      130      135      140
Pro Leu Asn Asp Ile Leu Gln Thr Glu Lys Phe Arg Asn Leu Lys Tyr
145      150      155      160
Ile Lys Val Lys Asn Ile Lys Gly Lys Gln Arg Arg Leu His Arg Asn

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<400> 9785																
Arg	Ser	Asn	Ile	Leu	Asp	Lys	Phe	Ser	Leu	Ala	Ile	Pro	Phe	Pro	Glu	
1				5					10					15		
Leu	Asp	Ile	Gln	Lys	Ile	Asn	Asp	Trp	Phe	Ser	Thr	Phe	Asn	Ser	Ile	
			20					25					30			
Val	Ile	Ile	Pro	Leu	Ser	Gly	Val	Tyr	Leu	Lys	Ala	Leu	Asp	Ile	Lys	
		35					40					45				
Leu	Leu	Thr	Ile	Leu	Leu	Lys	Gln	Leu	Ile	Ser	Val	Phe	His	Ser	Met	

50 55 60
 Pro Gly Glu Ile Cys Asn
 65 70

<210> 9786
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 9786
 Tyr Ser Asp Met Lys Asn Leu Leu Glu Gln Arg Phe Phe Arg Leu Leu
 1 5 10 15
 Ser Glu Cys Ser Gln Arg Lys Val Ser Val Phe Glu Leu Ala Glu Ala
 20 25 30
 Ile Glu Glu Leu Ala Met His Val Ala Asn Phe Gly Ile Asn Glu Gln
 35 40 45
 Asp Tyr Ser Val Leu Leu Arg Tyr Phe Ser Phe Gly Leu His Arg Leu
 50 55 60
 Lys Ser Tyr Arg Met Arg Phe Glu Gln Glu Lys Asn Ala Leu Phe Ala
 65 70 75 80
 Phe Asn

<210> 9787
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 9787
 Thr Met Lys Ile Ala Lys Lys Leu Leu Leu Val Ile Ser Tyr Ile Ile
 1 5 10 15
 Tyr Leu Leu Ser Phe Val Lys Arg Arg Lys Glu Ile Ile Phe Val Leu
 20 25 30
 Ser Ile Leu His Glu Arg Thr Thr Ala Lys Ala His Ser Lys Leu Met
 35 40 45
 Arg Lys Phe Met Glu Tyr Ala Glu Ile Lys Glu Tyr Lys Ala Leu Asn
 50 55 60
 Ile Ser Val Val Thr Leu Gln Gly Glu Phe
 65 70

<210> 9788
 <211> 220
 <212> PRT
 <213> B.fragilis

<400> 9788
 Asn Cys Tyr Phe Leu Ile Asn Pro His Gly Arg Glu Arg Met Lys Thr
 1 5 10 15
 Glu Met Glu Lys Cys Leu Ala Gly Glu Trp Tyr Asp Cys His Ala Pro
 20 25 30
 Val Phe Leu Glu Leu Lys Gly Lys Thr His Arg Leu Leu Met Arg Tyr
 35 40 45
 Asn Ser Leu Ser Tyr Glu Gln Lys Glu Glu Lys Tyr Ala Ile Leu Lys
 50 55 60
 Glu Met Phe Gly Ser Ile Gly Thr Glu Val Ser Val Gly His Ser Phe
 65 70 75 80
 Leu Cys Asp Tyr Gly Cys Asn Ile His Ile Gly Asp Asn Val Thr Val
 85 90 95
 Asn Met Gly Cys Val Phe Val Asp Cys Asn Lys Ile Thr Val Gly Asn

100	105	110
Asn Val Leu Ile Ala Pro	Asn Val Gln Ile Tyr Thr	Ala Thr His Pro
115	120	125
Ile Asp Leu Asn Glu Arg	Leu Thr Pro Val Glu Ala	Pro Glu Gly Val
130	135	140
Arg Tyr Val Arg His Thr	Phe Ala Leu Pro Val Thr	Val Glu Asp Gly
145	150	155
Cys Trp Ile Gly Gly Val	Ile Ile Leu Pro Gly Val	Thr Ile Gly
165	170	175
Lys Gly Ser Val Ile Gly	Ala Gly Ser Val Val Thr	Thr Asn Val Pro
180	185	190
Ala Asn Ser Leu Ala Val	Gly Asn Pro Cys Arg Val	Ile Arg Gln Ile
195	200	205
Asn Lys Ser Glu Asn Tyr	Asp Pro Ala Gly Ser Phe	
210	215	220

<210> 9789

<211> 170

<212> PRT

<213> B.fragilis

<400> 9789

Asp Met Asn Phe Leu Glu Leu Thr Lys Lys Arg Phe Ser Val Arg Asn	
1 5 10 15	
Tyr Lys Ser Asp Arg Val Glu Gln Asp Lys Ile Asp Tyr Ile Ile Glu	
20 25 30	
Cys Ala Arg Leu Ala Pro Ser Ala Val Asn Tyr Gln Pro Trp His Phe	
35 40 45	
Met Val Val Val Ser Glu Glu Gln Lys Gln Asn Leu Arg Gln Cys Tyr	
50 55 60	
Asn Arg Glu Trp Phe Ala Arg Ala Pro Val Tyr Ile Val Val Cys Ala	
65 70 75 80	
Asp Lys Ser Ile Ala Trp Val Arg Lys Ser Asp Asn Lys Asn His Ala	
85 90 95	
Asp Ile Asp Ala Ala Ile Ala Thr Glu His Ile Cys Leu Ala Ala Ala	
100 105 110	
Glu Ile Gly Leu Gly Ser Cys Trp Val Cys Asn Phe Asp Pro Glu Leu	
115 120 125	
Phe Lys Ala Asn Phe Arg Leu Ser Ser Glu Arg Tyr Pro Val Ala Ile	
130 135 140	
Val Ser Leu Gly Tyr Ile Gln Glu Gln Pro Asp His Phe Thr Ile Arg	
145 150 155 160	
Lys Asp Lys Asp Glu Ile Val Thr Phe Leu	
165 170	

<210> 9790

<211> 260

<212> PRT

<213> B.fragilis

<400> 9790

Ser Arg Thr Val Val Lys Thr Lys Asp Thr Thr Val Val Phe Ile Lys	
1 5 10 15	
Pro Asn Ile Thr Leu Ser Gly Val Glu Lys Cys Ser Thr Gly Tyr Glu	
20 25 30	
Leu Ala Lys Gly Ala Asp Pro Asp Ala Asn Glu Gln Glu Thr Ile Ser	
35 40 45	
Gly Ser Ile Lys Gly Ser Ile Ile Phe Arg Tyr Ala Glu Ala Leu Leu	
50 55 60	

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Ile Tyr Ala Glu Ala Arg Ala Glu Leu Gly Asn Ile Thr Gln Asn Asp
65          70          75          80
Leu Asp Ile Thr Ile Asn Lys Leu Arg Asp Arg Val Gly Met Pro His
          85          90          95
Leu Thr Leu Ser Val Gly Tyr Thr Asp Pro Lys Gly Asp Phe Thr Ala
          100          105          110
Ala Arg Gly Tyr Glu Gly Val Pro Val Ser Asn Leu Leu Gln Glu Ile
          115          120          125
Arg Arg Glu Arg Arg Ile Glu Leu Ala Cys Glu Gly Tyr Arg His Asp
          130          135          140
Asp Leu Lys Arg Trp Arg Ala His His Leu Trp Asn His Asp Arg Ile
          145          150          155          160
Gln Gly Ala Asn Ala Ala Gln Phe Glu Asn Leu Asp Trp Leu Val Lys
          165          170          175
Tyr Phe Gln Asn Asp Phe His Ile Pro Ala Ala Ile Asn Lys Ala Asp
          180          185          190
Phe Met Glu Lys Val Gly His Trp Ser Pro Glu Arg Asn Gln Asp Asn
          195          200          205
Tyr Trp Val Asp Ser Glu Gly Tyr Phe Glu Pro Tyr Gln Arg His Ile
          210          215          220
Pro Asp Gly His Phe His Phe Asp Pro Thr Lys Ala Tyr Leu Gln Pro
          225          230          235          240
Ile Pro Thr Glu Gln Leu Val Leu Asn Pro Asp Leu Lys Gln Asn Pro
          245          250          255
Gly Trp Glu Lys
          260

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<210> 9791

<211> 174

<212> PRT

<213> B.fragilis

<400> 9791

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Pro Ile Leu Val Ser Thr Asn Arg Ile Thr Ala Phe Tyr Ser Asp Ile
1          5          10          15
Phe Pro Leu Val Tyr Ile Val Leu Asn Arg Thr Val Cys Gly Leu Ser
          20          25          30
Lys Lys Lys Met Pro Tyr Leu His Leu Ile Asp Glu Ala Ile Gly Leu
          35          40          45
Leu Asn Thr Glu Ile Arg Leu Ile Glu Trp Arg Ile Lys Tyr Thr Glu
          50          55          60
Gln Leu Gln Gln Arg Ala Asn Lys Gln Phe Leu Ser Pro Leu Phe Leu
          65          70          75          80
Ala Asp Lys Thr Thr Leu Ile Asn Ile Met Glu Met Val Ser Gly Leu
          85          90          95
Phe Leu Ser Lys Ser Ile Ile Tyr Gln Asn Gly Lys Pro Ala Tyr Trp
          100          105          110
Val Asp Leu Ser Lys Gly Val Glu Trp Leu Phe Asn Ile Lys Ile Gly
          115          120          125
Asp Cys Tyr Gln Lys His Glu Asp Val Ile Lys Arg Lys Pro Gly Lys
          130          135          140
Leu Thr Glu Phe Leu Asn Gly Leu Ala Asp Phe Ile Arg Lys Glu His
          145          150          155          160
Asp Lys Lys Asp Ile His Gln Phe Pro Val Tyr Leu Thr Gln
          165          170

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<210> 9792

<211> 654

<212> PRT

<213> B.fragilis

<400> 9792

Asn	Thr	Ser	Phe	Ser	Met	Lys	Lys	Gln	Leu	Leu	Leu	Leu	Leu	Ile	Phe
1				5					10					15	
Ser	Ile	Ser	Leu	Tyr	Ile	Gln	Gly	Gln	Asn	Ile	His	Lys	Leu	Ala	Ser
			20					25					30		
Pro	Asp	Gly	Asn	Ile	Gln	Ile	Ser	Val	Asn	Leu	Ser	Asp	Lys	Ile	Tyr
		35					40					45			
Tyr	Asp	Val	Ile	Cys	Arg	Asn	Glu	Thr	Leu	Leu	Lys	Gln	Cys	His	Leu
	50					55					60				
Ala	Met	Glu	Ile	Gly	Asp	Gln	Glu	Leu	Gly	Thr	Asn	Pro	Lys	Met	Thr
65					70					75					80
Lys	Val	Ser	His	Lys	Asn	Ile	Asp	Glu	Ser	Leu	Lys	Pro	Val	Ile	Pro
				85				90						95	
Leu	Lys	Phe	Ser	Ser	Val	Ser	Asn	Arg	Tyr	Asn	Gln	Leu	Leu	Leu	Asp
			100					105					110		
Phe	Lys	Gly	Gly	Tyr	Ser	Val	Glu	Phe	Arg	Ala	Phe	Asn	Asp	Gly	Ile
	115						120					125			
Ala	Tyr	Arg	Phe	Ile	Thr	Asn	Lys	Lys	Gly	Met	Ile	Asn	Val	Lys	Asn
130						135					140				
Glu	Thr	Leu	Gln	Val	Asn	Phe	Pro	Asp	Asn	Tyr	Leu	Leu	His	Met	Gln
145					150					155					160
Gln	Ser	Gly	Ser	Phe	Lys	Thr	Ala	Tyr	Glu	Glu	Glu	Tyr	Thr	His	Leu
				165					170					175	
Tyr	Ser	Lys	Glu	Trp	Lys	Ser	Ser	Ala	Ser	Met	Ala	Leu	Leu	Pro	Ile
			180					185					190		
Leu	Ile	Asp	Thr	Gln	Lys	Gly	Ser	Lys	Ile	Leu	Ile	Ser	Glu	Thr	Ser
	195						200					205			
Leu	Thr	Asp	Tyr	Pro	Ala	Val	Phe	Leu	Lys	Ser	Asn	Gly	Ser	Asn	Gly
210					215						220				
Met	Val	Ser	Val	Phe	Pro	Arg	Val	Pro	Leu	Glu	Phe	Gly	Glu	Asp	Gly
225					230					235					240
Asp	Arg	Ser	Val	Lys	Ile	Leu	Lys	Glu	Ala	Asp	Tyr	Ile	Ala	Gln	Thr
				245					250					255	
Ser	Gly	Lys	Arg	Asn	Phe	Pro	Trp	Arg	Tyr	Phe	Val	Ile	Ser	Thr	Glu
			260					265					270		
Asp	Ser	Gln	Leu	Ile	Glu	Asn	Thr	Met	Ser	Tyr	Arg	Leu	Ala	Glu	Lys
		275					280					285			
Asn	Ile	Leu	Glu	Asp	Thr	Ser	Trp	Ile	Lys	Pro	Gly	Leu	Ala	Ser	Trp
	290					295					300				
Glu	Trp	Trp	Asn	Gly	Ala	Thr	Pro	Tyr	Gly	Pro	Asp	Val	Asn	Phe	Val
305					310					315					320
Ala	Gly	Cys	Asn	Leu	Asp	Thr	Tyr	Lys	Tyr	Phe	Ile	Asp	Phe	Ala	Ala
			325						330					335	
Asn	Tyr	Gly	Ile	Pro	Tyr	Ile	Ile	Met	Asp	Glu	Gly	Trp	Ala	Met	Ser
			340					345					350		
Thr	Arg	Asp	Pro	Tyr	Thr	Pro	Asn	Pro	Ala	Val	Asp	Val	His	Glu	Leu
	355						360					365			
Ile	Arg	Tyr	Gly	Lys	Glu	Lys	Asn	Val	Gly	Ile	Val	Leu	Trp	Leu	Thr
	370					375					380				
Trp	Leu	Thr	Val	Glu	Asn	Asn	Phe	Gly	Leu	Phe	Glu	Thr	Phe	Glu	Lys
385					390					395					400
Trp	Gly	Val	Lys	Gly	Val	Lys	Ile	Asp	Phe	Met	Asp	Arg	Ser	Asp	Gln
			405						410					415	
Trp	Met	Val	Asn	Tyr	Tyr	Glu	Arg	Val	Ala	Arg	Glu	Ala	Ala	Lys	His
			420					425					430		
His	Leu	Phe	Val	Asp	Phe	His	Gly	Ala	Phe	Lys	Pro	Ala	Gly	Leu	Glu
	435						440						445		

Tyr Lys Tyr Pro Asn Val Leu Ser Tyr Glu Gly Val Arg Gly Met Glu
 450 455 460
 Gln Met Gly Gly Cys Arg Pro Asp Asn Ser Ile Tyr Leu Pro Phe Met
 465 470 475 480
 Arg Asn Ala Val Gly Ala Met Asp Tyr Thr Pro Gly Ala Met Leu Ser
 485 490 495
 Met Gln Pro Glu Ile Tyr Cys Ser Glu Arg Pro Asn Ser Ala Ser Ile
 500 505 510
 Gly Thr Arg Ala Tyr Gln Met Ala Leu Phe Val Ile Phe Glu Ser Gly
 515 520 525
 Leu Gln Met Met Ala Asp Asn Pro Thr Leu Tyr Tyr Arg Asn Asp Glu
 530 535 540
 Cys Thr Arg Tyr Ile Thr Gln Val Pro Gln Thr Trp Asp Glu Thr Ile
 545 550 555 560
 Ala Leu Lys Ala Lys Ala Gly Glu Tyr Val Ile Val Ala Lys Arg Lys
 565 570 575
 Gly Asp Lys Trp Tyr Ile Gly Gly Met Thr Asn Asn Arg Gln Gln Glu
 580 585 590
 Arg Thr Phe Glu Leu Asp Phe Asp Phe Leu Lys Glu Gly Gln Ser Tyr
 595 600 605
 Arg Met Thr Ser Phe Glu Asp Gly Val Asn Ala Asn Arg Gln Ala Met
 610 615 620
 Asp Tyr Arg Lys Lys Glu Tyr Thr Leu Lys Lys Gly Asp Lys Ile Ile
 625 630 635 640
 Val Arg Leu Ala Arg Asn Gly Gly Phe Ala Ser Val Ile Glu
 645 650

<210> 9793

<211> 118

<212> PRT

<213> B.fragilis

<400> 9793

Lys Ile Arg Thr His Cys Thr Glu Asp Ile Met Arg Ala Val Lys Ala
 1 5 10 15
 Ala Pro Phe Arg Asn Arg Pro Val Arg Arg Leu Asn Phe Ala Ala Trp
 20 25 30
 Cys Ser Ala Ile Ala Ala Thr Leu Leu Gly Leu Trp Val Ala Glu
 35 40 45
 Ala Val Ala Val Asp Pro Ile Leu Ser Ser Glu Val Thr Arg Ile Pro
 50 55 60
 Lys Pro Tyr Gln Glu Gln Thr Leu Thr Asp Glu Arg Asn Tyr Glu Arg
 65 70 75 80
 Leu Met Thr Gly Glu Lys Arg Glu Ile Phe Phe Ser Ala Ser Arg Ser
 85 90 95
 Arg Lys Lys Lys Met Phe Lys Arg Glu Arg Leu Tyr Thr Arg Tyr Glu
 100 105 110
 Gln Ile Met Lys Asn Glu
 115

<210> 9794

<211> 98

<212> PRT

<213> B.fragilis

<400> 9794

Glu Arg Arg Ala Ser Gly Gln Pro Asp Ala Leu Phe Phe Cys Tyr Ile
 1 5 10 15
 Leu Tyr Ala Asn Pro Ser Asn Val Asn Ser Met Lys His Leu Arg Ile

		20					25				30				
Ile	Cys	Ile	Pro	Thr	Leu	Thr	Phe	Ala	Arg	Leu	Leu	Met	Phe	Thr	Pro
		35					40					45			
Ser	Ile	Leu	Gln	Ala	Gln	Asp	Lys	Pro	Val	Phe	Pro	Ile	Asp	Ser	Leu
		50				55					60				
Ile	Thr	Val	Gly	Tyr	Ala	Ser	Gly	Asn	Lys	Lys	Asn	Ile	Ser	Gly	Ser
					70					75					80
Val	Glu	Lys	Ile	Thr	Glu	Leu	Gly	Met	Asn	Lys	Asp	Gln	Ile	Thr	Asp
				85					90					95	
Pro	Leu														

<210> 9795

<211> 788

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (782)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9795

Thr	Leu	Asn	Phe	Glu	Cys	Met	Lys	Gln	Val	Asn	Leu	Arg	Ile	Tyr	Gln
1				5					10					15	
Thr	Ile	Leu	Thr	Leu	Leu	Val	Gly	Leu	Phe	Leu	Ser	Ala	Gly	Ala	Tyr
			20					25					30		
Ala	Gln	Gln	Ile	Ser	Val	Arg	Gly	Ile	Val	Lys	Asp	Gln	Met	Gly	Glu
		35					40					45			
Pro	Val	Ile	Gly	Ala	Asn	Val	Leu	Val	Lys	Gly	Thr	Ser	Asn	Gly	Val
		50				55					60				
Ile	Thr	Asp	Ile	Asp	Gly	Lys	Phe	Ala	Leu	Ser	Ala	Ala	Lys	Asn	Asp
		65			70					75					80
Ile	Leu	Ile	Ile	Ser	Phe	Val	Gly	Phe	Met	Ser	Gln	Glu	Ile	Pro	Val
				85					90					95	
Thr	Gly	Lys	Asp	Leu	Met	Val	Thr	Leu	Lys	Glu	Asp	Thr	Gly	Leu	Leu
		100						105					110		
Asp	Glu	Val	Val	Val	Leu	Gly	Tyr	Gly	Ala	Asn	Ala	Arg	Lys	Gln	Asp
		115					120					125			
Leu	Ser	Ala	Ala	Val	Gly	Val	Leu	Ser	Asn	Thr	Asp	Asp	Leu	Thr	Val
		130				135					140				
Arg	Pro	Val	Ser	Ser	Thr	Glu	Ser	Leu	Leu	Gln	Gly	Gln	Leu	Ala	Gly
		145			150					155					160
Val	Thr	Val	Gln	Ser	Asn	Gly	Gly	Asp	Pro	Thr	Ser	Thr	Pro	Ser	Ile
				165				170						175	
Val	Ile	Arg	Gly	Gln	Gly	Ser	Gln	Asn	Gly	Asp	Asn	Val	Leu	Trp	Val
		180						185					190		
Val	Asp	Gly	Val	Pro	Gly	Ala	Pro	Ile	Ala	Ser	Met	Ser	Asp	Ile	Glu
		195					200					205			
Ser	Ile	Val	Val	Leu	Lys	Asp	Ala	Ala	Ser	Ala	Ala	Ile	Tyr	Gly	Ala
		210				215					220				
Gln	Ser	Gly	Ala	Gly	Gly	Val	Ile	Leu	Val	Thr	Thr	Lys	Lys	Ala	Lys
		225			230					235					240
Ala	Gly	Ile	Pro	Thr	Leu	Ser	Tyr	Glu	Gly	Thr	Tyr	Gly	Ile	Arg	Gln
				245				250						255	
Ala	Thr	Asn	Leu	Pro	Glu	Pro	Leu	Asn	Ala	Glu	Glu	Glu	Leu	Glu	Met
			260					265						270	
Arg	Lys	Arg	Ser	Tyr	Ala	Asn	Ala	Asn	Val	Thr	Leu	Pro	Asp	Gly	Trp
		275					280						285		

Asn	Ile	Glu	Lys	Asn	Pro	Trp	Ile	Gly	Thr	Thr	Arg	Thr	Asn	Trp	Met
290						295					300				
Asp	Glu	Ile	Phe	Arg	Thr	Ala	Phe	Tyr	Gln	Arg	His	Asn	Ile	Ala	Leu
305					310					315					320
Asn	Val	Gly	Thr	Asp	Asn	Tyr	Ser	Ser	Arg	Leu	Ser	Phe	Ser	Phe	Asp
				325					330					335	
Asn	Asp	Glu	Gly	Val	Leu	Ile	Asn	Thr	Tyr	Asn	Lys	Asn	Tyr	Ala	Ile
			340					345					350		
Arg	Tyr	Asn	Gly	Lys	Phe	Asp	Leu	Asn	Lys	Trp	Val	Ser	Ile	Ser	Glu
			355				360					365			
Asp	Leu	Val	Trp	Lys	Asn	Thr	Glu	Asn	Arg	Ser	Lys	Asp	Thr	Asn	Asp
						375					380				
Ala	Tyr	Thr	Gly	Pro	Val	Leu	Ser	Ala	Ile	Tyr	Met	Pro	Ala	Ser	Ala
385						390				395					400
Thr	Val	Tyr	Asn	Pro	Leu	Asp	Gly	Thr	Trp	Gly	Gly	Thr	Thr	Thr	Glu
				405					410					415	
Asp	Pro	Glu	Tyr	Ile	Ala	Lys	Tyr	Gly	Ser	Asn	Phe	Ala	Gly	Ala	His
			420					425					430		
Gly	Asp	Ala	Val	Asn	Pro	Val	Arg	Leu	Leu	Arg	Ala	Glu	Asn	Arg	Phe
			435				440					445			
Asn	Arg	Thr	Ser	Asp	Val	Trp	Ser	Thr	Thr	Ser	Leu	Gln	Ile	Ala	Asn
						455					460				
Ile	Ile	Gln	Gly	Leu	Lys	Phe	Thr	Ser	Arg	Phe	Thr	Tyr	Asn	Leu	Lys
465					470					475					480
Thr	Asn	Asn	Tyr	Lys	Asn	Phe	Arg	Pro	Ile	Gln	Asp	Glu	Pro	Gly	Lys
				485					490					495	
Pro	Asn	Asn	Ser	Asn	Ser	Leu	Asp	Val	Thr	Asn	Tyr	Arg	Thr	Asp	Ala
			500					505					510		
Trp	Lys	Thr	Glu	Asn	Thr	Leu	Thr	Tyr	Asp	Asn	Ser	Phe	Gly	Asn	His
			515				520					525			
Thr	Val	Gly	Ala	Leu	Phe	Ser	Thr	Thr	Ala	Asp	His	Tyr	Asn	Val	Arg
						535					540				
Gly	Leu	Lys	Val	Asn	Gly	Lys	Asn	Phe	Ala	Asp	Glu	Ser	Pro	Tyr	Leu
545					550					555					560
Gln	Tyr	Leu	Ala	Tyr	Ala	Gly	Thr	Thr	Ser	Ala	Thr	Asp	Tyr	Leu	Thr
				565					570					575	
Gly	Pro	Asp	Ala	Asn	Val	Ser	Leu	Val	Ala	Arg	Leu	Ala	Tyr	Ser	Tyr
			580					585					590		
Asp	Asp	Arg	Tyr	Phe	Val	Thr	Ala	Ser	Trp	Arg	Arg	Asp	Tyr	Ala	Gly
			595				600					605			
Arg	Leu	Pro	Lys	Glu	Asn	Asn	Phe	Gly	Asp	Phe	Pro	Ala	Ala	Thr	Leu
						615					620				
Ala	Trp	Lys	Ile	Ser	Asn	Glu	Lys	Phe	Phe	Lys	Lys	Ser	Asp	Phe	Ile
625					630					635					640
Gly</															

5700

755 760 765
 Thr Gly Thr Asp Arg Val Asn Lys Ile Phe Pro Thr Ser Xaa Pro Gly
 770 775 780
 Ile Phe His Ile
 785

<210> 9796

<211> 597

<212> PRT

<213> B.fragilis

<400> 9796

Asn Gln Thr Tyr Ile Leu Ile Asn Asn Ser Ile Glu Arg Met Lys Lys
 1 5 10 15
 Leu Pro Tyr Phe Val Ser Phe Ala Ala Ala Trp Leu Phe Ile Ala Val
 20 25 30
 Ala Ser Ala Gln Glu Asn Pro Val Asp Tyr Val Asn Pro Phe Val Gly
 35 40 45
 Thr Thr Asn Tyr Gly Thr Thr Asn Pro Gly Ala Ile Cys Pro Gln Gly
 50 55 60
 Met Met Ser Val Val Pro Phe Asn Val Met Gly Asp Lys Ser Val Gly
 65 70 75 80
 Asn Lys Ile Asp Lys Asp Ser Gln Trp Trp Ser Thr Pro Tyr Glu His
 85 90 95
 Thr Asn Thr Tyr Phe Thr Gly Phe Ser His Val Asn Leu Ser Gly Val
 100 105 110
 Gly Cys Pro Glu Leu Gly Ser Leu Leu Leu Met Pro Thr Thr Gly Lys
 115 120 125
 Leu Asn Val Asp Tyr Leu Gln Tyr Gly Ser Ala Tyr Lys Asp Glu Lys
 130 135 140
 Ala Thr Pro Gly Tyr Tyr Ser Asn Val Leu Thr Lys Tyr Gly Ile Lys
 145 150 155 160
 Asn Glu Val Ser Ala Thr Leu Arg Thr Gly Ile Ser Arg Phe Thr Phe
 165 170 175
 Pro Lys Gly Glu Ser Asn Ile Leu Leu Asn Leu Gly Glu Gly Leu Thr
 180 185 190
 Asn Glu Thr Gly Ala Thr Val Arg Phe Val Ser Asp Thr Glu Ile Glu
 195 200 205
 Gly Ser Lys Leu Leu Gly Thr Phe Cys Tyr Asn Pro Gln Ala Val Phe
 210 215 220
 Pro Ile Tyr Phe Val Met Arg Ile Asn Lys Thr Pro Arg Ala Arg Gly
 225 230 235 240
 Tyr Trp Lys Lys Met Arg Pro Met Thr Val Glu Ala Gln Trp Asp Asn
 245 250 255
 Thr Ser Gly Lys Asn Lys Leu Tyr Thr Ala Tyr Thr Lys Glu Met Ser
 260 265 270
 Gly Asp Asp Ile Gly Thr Trp Phe Thr Phe Asp Thr Asp Glu Gly Glu
 275 280 285
 Thr Ile Glu Val Ser Met Gly Val Ser Phe Val Ser Ile Ala Asn Ala
 290 295 300
 Arg Leu Asn Leu Glu Lys Glu Gln Ala Gly Lys Gly Phe Asp Gln Ile
 305 310 315 320
 Arg Ala Glu Ala Arg Ala Met Trp Gln Asn Asp Leu Ser Arg Ile Leu
 325 330 335
 Val Glu Gly Gly Thr Glu Glu Gln Lys Arg Val Phe Tyr Thr Ala Met
 340 345 350
 Tyr His Leu Leu Ile His Pro Asn Ile Leu Gln Asp Val Asn Gly Gln
 355 360 365
 Tyr Pro Ala Met Glu Gly Ser Glu Ile Leu Thr Thr Lys Gly Asn Arg

370 375 380
 Tyr Thr Val Phe Ser Leu Trp Asp Thr Tyr Arg Asn Val His Gln Leu
 385 390 395 400
 Met Thr Leu Leu Phe Pro Asp Arg Gln Leu Asp Met Val Arg Thr Met
 405 410 415
 Val Asp Met Tyr Lys Glu His Gly Trp Leu Pro Lys Trp Glu Leu Tyr
 420 425 430
 Gly Arg Glu Thr Leu Thr Met Glu Gly Asp Pro Ser Ile Pro Val Ile
 435 440 445
 Ala Asp Thr Trp Met Lys Gly Leu Arg Asp Phe Asp Val Gln Ala Ala
 450 455 460
 Tyr Glu Ala Met Tyr Lys Ser Ala Thr Thr Pro Gly Lys Asp Asn Leu
 465 470 475 480
 Met Arg Pro Asp Ile Asp Asp Tyr Ile Ala Lys Gly Tyr Val Pro Leu
 485 490 495
 Thr Glu Gln Tyr Asp Asn Ser Val Ser Tyr Ala Leu Glu Tyr Tyr Ile
 500 505 510
 Ala Asp Tyr Ala Leu Ser Arg Phe Cys Pro Arg Arg Trp Glu Arg Lys
 515 520 525
 Lys Met Arg Ser Tyr Ser Thr Thr Val Arg Trp Asp Ile Asn Ile Thr
 530 535 540
 Thr Ala Arg Ser Ser Val His Tyr Val Pro Phe Tyr Pro Thr Glu His
 545 550 555 560
 Ser Ile Leu His Ser Ile Arg Trp Lys Glu Pro Ile Leu Leu Arg Val
 565 570 575
 Pro Val Phe Met Arg Gly Thr Pro Gly Ile Ile His Phe Met Phe Pro
 580 585 590
 Met Ile Leu Gln Ala
 595

<210> 9797

<211> 188

<212> PRT

<213> B.fragilis

<400> 9797

Ala Met Glu Gln Asn Glu Ile Gln Val Leu Val Glu Lys Ser Arg Arg
 1 5 10 15
 Gln Asp Ala Ser Ala Phe Ala Leu Leu Val Ala Glu Tyr Gln Thr Phe
 20 25 30
 Val Phe Arg Leu Ala Phe Arg Leu Leu Cys Asp Glu Glu Glu Ala Arg
 35 40 45
 Asp Met Val Gln Glu Thr Phe Leu Arg Val Trp Leu Ser Leu Asp Lys
 50 55 60
 Tyr Arg Pro Glu Phe Arg Phe Ser Thr Trp Leu Tyr Arg Val Ala Cys
 65 70 75 80
 Asn Ile Cys Tyr Asp Arg Leu Arg Ala Leu Gln His Ser Pro Ala Gly
 85 90 95
 Ala Leu Ser Asp Ile Thr Phe Ala Glu Leu Pro Val Cys Ser Asp Asp
 100 105 110
 Asn Ile Glu Ala Thr Leu Val Asn Arg Glu Leu Lys Ala His Ile Leu
 115 120 125
 Tyr Phe Met His Gln Val Thr Pro Lys Gln Lys Leu Val Phe Pro Leu
 130 135 140
 Arg Asp Ile Glu Glu Leu Glu Ile Lys Glu Ile Glu Lys Ile Thr Gly
 145 150 155 160
 Phe Thr Ser Val Gln Ile Lys Ala Asn Leu Tyr Leu Ala Arg Lys Ser
 165 170 175
 Ile Arg Lys Lys Leu Asn Glu Ile Asn Lys Glu Arg

180

185

<210> 9798
 <211> 359
 <212> PRT
 <213> B.fragilis

<400> 9798

Lys	Gln	Met	His	Met	Lys	Thr	Asn	Arg	Leu	Leu	Ser	Ile	Leu	Leu	Leu
1				5					10					15	
Ala	Val	Ser	Met	Val	Ser	Cys	Thr	Thr	Tyr	Tyr	Gln	Val	Lys	Thr	Arg
			20					25					30		
Ile	His	Pro	Asp	Gly	Ser	Ala	His	Arg	Glu	Val	Tyr	Ala	Phe	Ala	Asp
		35					40					45			
Ser	Ala	Phe	Met	Ala	Gly	Asp	Pro	Met	Lys	Asn	Pro	Phe	Met	Phe	Ser
	50					55				60					
Leu	Asp	Ser	Gly	Trp	Val	Val	Thr	Arg	Phe	Asp	Ser	Val	Arg	Thr	His
65				70					75					80	
Asn	Tyr	Phe	Gly	Glu	Glu	Gly	Lys	Ile	Asn	Val	Cys	Ala	Gly	Arg	Glu
			85					90						95	
Glu	Pro	Ser	Val	Ser	Met	Phe	Ala	Glu	Gln	Val	His	Pro	Lys	Asp	Pro
			100					105					110		
Ile	Tyr	Arg	Pro	Leu	Val	Thr	Pro	Gln	Glu	Thr	Leu	Thr	Lys	His	Phe
		115					120					125			
Arg	Trp	Phe	Tyr	Thr	Tyr	Tyr	Thr	Tyr	Thr	Gly	Ile	Tyr	Pro	Glu	Leu
	130					135					140				
Ala	Asp	Lys	Gly	Pro	Val	Pro	Leu	Lys	Asn	Tyr	Leu	Asn	Glu	Ser	Glu
145					150				155					160	
Gln	Lys	Leu	Trp	Phe	Gln	Gly	Asp	Asp	Thr	Ala	Tyr	Arg	Gly	Met	Asn
				165					170					175	
Gly	Leu	Glu	Met	Lys	Glu	Leu	Leu	Asp	Arg	Leu	Glu	Lys	Lys	Phe	Tyr
			180					185					190		
Asp	Trp	Tyr	Asn	Arg	Ser	Leu	Tyr	Glu	Leu	Ser	Phe	Glu	Val	Ile	Arg
		195				200						205			
Pro	Phe	Ile	Ala	Glu	Ile	Asp	Arg	Gly	Lys	Tyr	Met	Ser	Arg	Leu	Asp
	210					215					220				
Glu	Val	Lys	Asp	Ser	Leu	Tyr	Leu	Gly	Tyr	Gln	Pro	Lys	Asp	Asp	Asp
225					230				235					240	
Pro	Asp	Pro	Asp	Pro	Glu	Leu	Ile	Cys	Gln	Leu	Leu	Asp	Thr	His	Tyr
				245				250						255	
His	Thr	Asp	Cys	Phe	Ser	Leu	Leu	Tyr	Lys	Glu	Lys	Gln	Gln	Glu	Val
		260						265					270		
Asp	Lys	Arg	Phe	Asp	Glu	Glu	Thr	Arg	Pro	Ile	Glu	Leu	Phe	Gly	Ala
		275					280					285			
Val	Ile	Gln	Tyr	Glu	Leu	Lys	Met	Pro	Gly	Gln	Met	Ile	Ser	Ala	Asn
	290					295					300				
Thr	Thr	Phe	Arg	Asp	Arg	Glu	Tyr	Leu	Val	Trp	Lys	Val	Asp	Ala	Tyr
305					310				315					320	
Arg	Leu	Leu	Ala	Gly	Glu	Tyr	Ser	Leu	Thr	Ala	Arg	Ser	Arg	Val	Pro
			325					330						335	
Asn	Val	Trp	Ala	Phe	Ile	Leu	Thr	Gly	Val	Leu	Ile	Leu	Leu	Gly	Ile
			340					345					350		
Gly	Phe	Trp	Ile	Lys	Lys	Arg									
			355												

<210> 9799
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 <212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (68)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9799

Asn	Lys	Asn	Lys	Ser	Ile	Met	Asn	Lys	Lys	Ile	Lys	Ile	Ala	Phe	Ala
1				5					10					15	
Ser	Met	Leu	Ala	Val	Pro	Leu	Leu	Ala	Cys	Ala	Gln	Val	Arg	Thr	Glu
			20					25					30		
Gln	Thr	Phe	Glu	Lys	Gly	Trp	Lys	Phe	Thr	Arg	Glu	Asp	Ser	Lys	Asp
		35					40					45			
Phe	Ser	Asn	Ser	Thr	Tyr	Asp	Asp	Ala	Lys	Trp	Gln	Ser	Val	Thr	Val
	50					55					60				
Pro	His	Asp	Xaa	Ala	Ile	Tyr	Gly	Pro	Phe	Ser	Ile	Asn	Asn	Asp	Lys
65					70					75				80	
Gln	Asn	Val	Ala	Ile	Ser	Gln	Asp	Gly	Gln	Lys	Glu	Ala	Met	Glu	His
				85					90					95	
Ala	Gly	Arg	Thr	Gly	Gly	Leu	Pro	Phe	Val	Gly	Val	Gly	Trp	Tyr	Arg
			100					105					110		
Leu	Asn	Phe	Asp	Ala	Pro	Ser	Phe	Ser	Lys	Gly	Lys	Lys	Ala	Thr	Leu
		115					120					125			
Val	Phe	Asp	Gly	Ala	Met	Ser	His	Ala	His	Val	Tyr	Ile	Asn	Gly	Gln
	130					135					140				
Glu	Ala	Gly	Tyr	Trp	Pro	Tyr	Gly	Tyr	Asn	Ser	Phe	Tyr	Val	Asp	Ala
145					150					155				160	
Thr	Pro	Tyr	Leu	Lys	Pro	Gly	Glu	Lys	Asn	Thr	Leu	Ala	Val	Arg	Leu
				165					170					175	
Glu	Asn	Glu	Asn	Glu	Ser	Ser	Arg	Trp	Tyr	Pro	Gly	Ala	Gly	Leu	Tyr
			180					185				190			
Arg	Asn	Val	His	Leu	Val	Val	Asn	Glu	Asp	Ala	His	Ile	Pro	Thr	Trp
		195					200					205			
Gly	Thr	Gln	Leu	Thr	Thr	Pro	Val	Val	Lys	Asp	Glu	Phe	Ala	Lys	Val
	210					215					220				
Asn	Leu	Lys	Thr	Lys	Leu	Asp	Val	Pro	Ala	Gly	Lys	Ala	Phe	Glu	Gly
225					230					235				240	
Tyr	Arg	Ile	Val	Thr	Glu	Leu	Lys	Asp	Lys	Asp	Gly	Lys	Val	Val	Ala
			245						250					255	
Ala	Asn	Glu	Lys	Lys	Gly	Gly	Pro	Phe	Asp	Asp	Asn	Val	Phe	Glu	Gln
			260					265					270		
Asp	Phe	Val	Val	Thr	Ser	Pro	Ala	Leu	Trp	Thr	Pro	Asp	Thr	Pro	His
		275					280					285			
Leu	Tyr	Ser	Ala	Val	Ser	Lys	Val	Tyr	Glu	Gly	Asn	Thr	Leu	Lys	Asp
	290					295					300				
Glu	Tyr	Thr	Thr	Ser	Phe	Gly	Ile	Arg	Ser	Ile	Glu	Ile	Ile	Pro	Asn
305					310					315				320	
Lys	Gly	Phe	Phe	Leu	Asn	Gly	Lys	Lys	Thr	Met	Phe	Lys	Gly	Val	Cys
			325						330					335	
Asn	His	His	Asp	Leu	Val	Pro	Leu	Val	Gly	Ile	Ala	Asn	Asp	Ala	Gly
			340					345					350		
Ile	Arg	Arg	Gln	Ile	Arg	Ile	Leu	Lys	Asp	Met	Gly	Cys	Asn	Ala	Ile
		355					360					365			
Arg	Thr	Ser	His	Asn	Met	Pro	Ala	Pro	Glu	Leu	Ile	Lys	Ala	Cys	Asp
	370					375					380				
Glu	Met	Gly	Met	Met	Ile	Met	Ala	Glu	Ser	Phe	Asp	Glu	Trp	Lys	Ala
385					390					395				400	
Ala	Lys	Val	Gln	Asn	Gly	Tyr	His	Lys	Val	Phe	Asp	Glu	Trp	Val	Glu
				405					410					415	

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Lys Asp Leu Val Asn Leu Ile His Gln Tyr Arg Asn Asn Pro Ser Val
 420 425 430
 Val Met Trp Cys Ile Gly Asn Glu Val Pro Asp Gln Trp Asn Gly Asp
 435 440 445
 Arg Gly Pro Lys Leu Ser Arg Phe Leu Gln Asp Ile Cys His Arg Glu
 450 455 460
 Asp Pro Thr Arg Pro Val Thr Gln Gly Met Asp Ala Pro Asp Ala Val
 465 470 475 480
 Val Asn Asn Asn Met Ala Ala Val Met Asp Val Ala Gly Phe Asn Tyr
 485 490 495
 Arg Pro His Lys Tyr Gln Glu Asn Tyr Lys Lys Leu Pro Gln Gln Ile
 500 505 510
 Ile Leu Gly Ser Glu Thr Ala Ser Thr Val Ser Ser Arg Gly Val Tyr
 515 520 525
 Lys Phe Pro Val Val Arg Arg Ala Met Gln Lys Tyr Asp Asp His Gln
 530 535 540
 Ser Ser Ser Tyr Asp Val Glu His Cys Gly Trp Ser Asn Leu Pro Glu
 545 550 555 560
 Asp Asp Phe Ile Gln His Glu Asp Leu Pro Tyr Cys Ile Gly Glu Phe
 565 570 575
 Val Trp Thr Gly Phe Asp Tyr Leu Gly Glu Pro Thr Pro Tyr Tyr Thr
 580 585 590
 Asp Trp Pro Ser His Ser Ser Leu Phe Gly Ile Ile Asp Leu Pro Gly
 595 600 605
 Leu Pro Lys Asp Arg Tyr Tyr Leu Tyr Arg Ser His Trp Asn Lys Asp
 610 615 620
 Lys Glu Thr Leu His Ile Leu Pro His Trp Asn Trp Glu Gly Arg Glu
 625 630 635 640
 Gly Glu Val Thr Pro Val Phe Val Tyr Thr Asn Tyr Pro Ser Ala Glu
 645 650 655
 Leu Phe Ile Asn Gly Lys Ser Gln Gly Lys Arg Thr Lys Asp Leu Ser
 660 665 670
 Val Thr Val Asn Asn Ser Gly Asp Ser Thr Ser Val Ala Asn Phe Lys
 675 680 685
 Arg Gln Gln Arg Tyr Arg Leu Met Trp Met Asp Thr Lys Tyr Glu Pro
 690 695 700
 Gly Thr Val Lys Val Val Ala Tyr Asp Lys Asp Gly Lys Ala Val Ala
 705 710 715 720
 Glu Lys Glu Ile His Thr Ala Gly Lys Pro Asp His Ile Glu Leu Val
 725 730 735
 Ala Asp Arg Ser Val Ile Asp Ala Asn Gly Lys Asp Leu Ser Phe Val
 740 745 750
 Thr Val Lys Val Val Asp Lys Glu Gly Asn Leu Cys Pro Leu Ala Asp
 755 760 765
 Asn Glu Ile Ser Phe Lys Val Lys Gly Ala Gly Thr Tyr Arg Ala Gly
 770 775 780
 Ala Asn Gly Asn Pro Ala Ser Leu Glu Ser Phe Gln Thr Pro Lys Met
 785 790 795 800
 Lys Val Phe Ser Gly Met Met Thr Ala Ile Val Gln Ser Thr Glu Lys
 805 810 815
 Ala Gly Lys Ile Thr Leu Glu Ala Thr Gly Lys Gly Leu Lys Lys Gly
 820 825 830
 Thr Leu Leu Ile Glu Ser Lys
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<210> 9800

<211> 292

<212> PRT

<213> B.fragilis

<400> 9800

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Lys Pro Leu Asn Gly Tyr Ala Met Lys Leu Ser Ile Asp Leu Gly Gly
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Thr Asn Val Arg Ile Ala Gln Val Glu Asn Gly Ile Cys Leu Asn Lys
20          25          30
Met Ser Val Pro Cys Leu Ala Gln Gln Asp Ala Ser Ala Val Leu Asp
35          40          45
Gln Leu Phe Gln Leu Ile Thr Gly Met Met Asn Val Gln Val Asp Gly
50          55          60
Ile Gly Ile Gly Val Pro Ser Ile Val Asp Val Glu Lys Gly Ile Val
65          70          75          80
Tyr Asn Val Ala Asn Ile Ser Ser Trp Lys Lys Ile His Leu Lys Asp
85          90          95
Ile Leu Glu Lys Arg Phe Met Val Pro Val Ala Ile Asn Asn Asp Ser
100         105         110
Asn Cys Phe Thr Leu Gly Glu Ser Met Phe Gly Glu Gly Lys Pro Tyr
115         120         125
Ala His Met Val Gly Val Thr Ile Gly Thr Gly Ile Gly Ala Gly Val
130         135         140
Ile Ile Asn His Arg Leu Tyr Cys Gly Gln Tyr Met Gly Ala Gly Glu
145         150         155         160
Ile Gly Ser Leu Pro Tyr Leu Asp Ser Asp Phe Glu His Tyr Cys Ser
165         170         175
Ser Ser Phe Phe Lys Arg His Asp Thr Thr Gly Val Val Val Ala Glu
180         185         190
Lys Ala Glu Arg Gly Asp Gly Ala Ala Leu Glu Ile Trp Arg Glu Phe
195         200         205
Gly Thr His Leu Gly Asn Leu Met Lys Val Ile Leu Phe Ser Tyr Ala
210         215         220
Pro Gln Ala Ile Ile Leu Gly Gly Ser Ile Val Ser Ala Phe His Phe
225         230         235         240
Phe Lys Asp Thr Met Lys Asp Ala Met Gln Asp Phe Pro Tyr Lys Ile
245         250         255
Leu Leu Asp Asn Val Lys Ile Ile Thr Ser Tyr Leu Lys Asp Ala Ser
260         265         270
Leu Leu Gly Ala Ser Ala Leu Phe Glu Lys Gln Tyr Leu Pro Ile Ser
275         280         285
Ile Ile Asn Asn
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<210> 9801

<211> 567

<212> PRT

<213> B.fragilis

<400> 9801

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His Ile Pro Asp Ser Ser Leu Phe Thr Lys Asn Val Tyr Leu Cys His
1          5          10          15
Arg Val Ile Leu Ile Ile Asn Lys Leu Arg Asn Asn Asn Arg Met Ile
20          25          30
Thr Val Ser Asn Val Ser Val Gln Phe Gly Lys Arg Val Leu Phe Asn
35          40          45
Asp Val Asn Leu Lys Phe Thr Ser Gly Asn Cys Tyr Gly Ile Ile Gly
50          55          60
Ala Asn Gly Ala Gly Lys Ser Thr Phe Leu Arg Thr Ile Tyr Gly Asp
65          70          75          80
Leu Asp Pro Thr Thr Gly Asn Ile Thr Leu Gly Pro Gly Glu Arg Leu
85          90          95

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Ser Val Leu Ser Gln Asp His Phe Lys Trp Asp Ala Phe Thr Val Met
 100 105 110
 Asp Thr Val Met Met Gly His Thr Val Leu Trp Asp Ile Met Lys Gln
 115 120 125
 Arg Glu Ala Leu Tyr Ala Lys Glu Asp Phe Thr Asp Glu Asp Gly Leu
 130 135 140
 Lys Val Ser Glu Leu Lys Glu Lys Phe Ala Glu Leu Asp Gly Trp Asn
 145 150 155 160
 Ala Glu Ser Asp Ala Ala Met Leu Leu Ser Gly Leu Gly Val Lys Glu
 165 170 175
 Asp Lys His Tyr Thr Leu Met Gly Glu Leu Ser Gly Lys Glu Lys Val
 180 185 190
 Arg Val Met Leu Ala Gln Ala Leu Tyr Gly Asn Pro Asp Asn Met Leu
 195 200 205
 Leu Asp Glu Pro Thr Asn Asp Leu Asp Met Glu Thr Val Thr Trp Leu
 210 215 220
 Glu Glu Tyr Leu Ser Asn Phe Glu His Thr Val Leu Val Val Ser His
 225 230 235 240
 Asp Arg His Phe Leu Asp Ser Val Cys Thr His Thr Val Asp Ile Asp
 245 250 255
 Tyr Gly Lys Ile Asn Leu Phe Ala Gly Asn Tyr Ser Phe Trp Tyr Glu
 260 265 270
 Ser Ser Gln Leu Ala Leu Arg Gln Gln Asn Gln Lys Ala Lys Ala
 275 280 285
 Glu Glu Lys Lys Lys Glu Leu Glu Glu Phe Ile Arg Arg Phe Ser Ala
 290 295 300
 Asn Val Ala Lys Ser Lys Gln Thr Thr Ser Arg Lys Lys Met Leu Glu
 305 310 315 320
 Lys Leu Asn Val Glu Glu Ile Lys Pro Ser Ser Arg Lys Tyr Pro Gly
 325 330 335
 Ile Ile Phe Thr Pro Glu Arg Glu Pro Gly Asn Gln Ile Leu Glu Val
 340 345 350
 Ser Gly Leu Ser Lys Lys Thr Glu Asp Gly Val Val Leu Phe Asn Asp
 355 360 365
 Val Asn Phe Asn Val Glu Lys Gly Asp Lys Ile Val Phe Ile Ser Arg
 370 375 380
 Asn Pro Arg Ala Met Thr Ala Phe Phe Glu Ile Ile Asn Gly His Met
 385 390 395 400
 Lys Pro Asp Ala Gly His Phe Asn Trp Gly Val Thr Ile Thr Thr Ala
 405 410 415
 Tyr Leu Pro Leu Asp Asn Thr Glu Tyr Phe Asn Thr Asp Leu Asn Leu
 420 425 430
 Val Asp Trp Leu Ser Gln Tyr Gly Glu Gly Asn Glu Val Tyr Met Lys
 435 440 445
 Gly Phe Leu Gly Arg Met Leu Phe Ser Gly Glu Glu Val Leu Lys Lys
 450 455 460
 Val Ser Val Leu Ser Gly Gly Glu Lys Met Arg Cys Met Ile Ala Arg
 465 470 475 480
 Met Gln Leu Arg Asn Ala Asn Cys Leu Ile Leu Asp Thr Pro Thr Asn
 485 490 495
 His Leu Asp Leu Glu Ser Ile Gln Ala Phe Asn Asn Asn Leu Lys Thr
 500 505 510
 Tyr Lys Gly Asn Ile Leu Phe Ser Ser His Asp His Glu Phe Ile Gln
 515 520 525
 Thr Val Ala Asn Arg Val Ile Glu Leu Thr Pro Asn Gly Ile Ile Asp
 530 535 540
 Lys Met Met Glu Tyr Asp Glu Tyr Ile Thr Ser Asp His Ile Lys Glu
 545 550 555 560
 Leu Arg Ala Lys Met Tyr Lys

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<210> 9802
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 9802
 Gly Ser Asp Glu Phe Pro Leu Gly Ser Met Ala Lys Arg Phe Gly Glu
 1 5 10 15
 Leu Val Arg Gln Pro His Lys Val Val Lys Ser Glu Ala Val Val Phe
 20 25 30
 Arg Asn Tyr Ala Trp Asn Gly Glu Ala Lys Asp Arg Tyr Ile Gly Tyr
 35 40 45
 Gln Ala His Ala Val Glu Glu Phe Glu Gly Trp Val Phe Thr Asn Lys
 50 55 60
 Ile Val Val Glu
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<210> 9803
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<400> 9803
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 1 5 10 15
 Glu Ser Thr Val Glu Glu Ile Lys Lys Ala Tyr Arg Lys Lys Ala Ile
 20 25 30
 Gln Tyr His Pro Asp Lys Asn Pro Gly Asp Lys Glu Ala Glu Glu Lys
 35 40 45
 Phe Lys Glu Ala Ala Glu Ala Tyr Asp Val Leu Ser Asn Pro Asp Lys
 50 55 60
 Arg Ala Arg Tyr Asp Gln Phe Gly His Ala Gly Met Ser Gly Ala Ala
 65 70 75 80
 Gly Asn Gly Gly Pro Phe Gly Gly Phe Ser Gly Gly Met Ser Met Asp
 85 90 95
 Asp Ile Phe Ser Met Phe Gly Asp Ile Phe Gly Gly His Ser Gly Gly
 100 105 110
 Gly Phe Gly Gly Gly Phe Gly Gly Phe Gly Gly Gly Gly Gly
 115 120 125
 Ser Gln Gln Arg Lys Phe Arg Gly Ser Asp Leu Arg Val Lys Val Lys
 130 135 140
 Leu Asn Leu Lys Glu Ile Ser Thr Gly Val Glu Lys Lys Phe Lys Leu
 145 150 155 160
 Lys Lys Tyr Val Pro Cys Ser His Cys His Gly Thr Gly Ala Glu Gly
 165 170 175
 Asn Ser Gly Ser Glu Thr Cys Pro Thr Cys Lys Gly Ser Gly Ser Val
 180 185 190
 Ile Arg Asn Gln Gln Thr Ile Leu Gly Thr Met Gln Thr Arg Thr Thr
 195 200 205
 Cys Pro Thr Cys Asn Gly Glu Gly Lys Ile Ile Lys Asp Lys Cys Lys
 210 215 220
 Val Cys Gly Gly Glu Gly Ile Glu Tyr Gly Glu Glu Val Val Thr Val
 225 230 235 240
 Lys Ile Pro Ala Gly Val Ala Glu Gly Met Gln Leu Ser Met Gly Gly
 245 250 255
 Lys Gly Asn Ala Gly Lys His Asn Gly Ile Pro Gly Asp Leu Leu Ile
 260 265 270

Leu Val Glu Glu Glu Pro His Pro Glu Leu Ile Arg Asp Glu Asn Asp
 275 280 285
 Leu Val Tyr Asn Leu Leu Leu Ser Phe Pro Thr Ala Ala Ile Gly Gly
 290 295 300
 Ala Val Glu Ile Pro Thr Ile Asp Gly Lys Val Lys Val Lys Ile Glu
 305 310 315 320
 Ala Gly Thr Gln Pro Gly Lys Val Leu Arg Leu Arg Gly Lys Gly Leu
 325 330 335
 Pro Ser Val Asn Gly Tyr Gly Thr Gly Asp Leu Leu Val Asn Val Ser
 340 345 350
 Val Tyr Val Pro Glu Thr Leu Ser Lys Glu Glu Lys Ser Thr Leu Glu
 355 360 365
 Lys Leu Glu Glu Ser Lys Asn Phe Lys Pro Ser Thr Ser Ile Lys Glu
 370 375 380
 Lys Ile Phe Lys Lys Phe Arg Ser Leu Phe Asp
 385 390 395

<210> 9804

<211> 544

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<213> B.fragilis

<400> 9804

Val Met Lys Ser Arg Tyr Ile Cys Met Phe Ala Cys Leu Trp Gly Leu
 1 5 10 15
 Gly Phe Leu Phe Ser Cys Asp Gly Phe Leu Asn Glu Asn Pro Lys Asp
 20 25 30
 Lys Ile Pro Glu Glu Asp Ala Tyr Lys Asn Leu Thr Asp Leu Tyr Tyr
 35 40 45
 Asn Ala Val Ala Ser Leu Tyr Asn Asn Ile Gly Gly Tyr Ser Asp Ser
 50 55 60
 Gln Gly Leu Gln Gly Thr Gly Arg Gly Ile Tyr Asp Leu Asn Thr Phe
 65 70 75 80
 Thr Thr Asp Glu Ala Ile Met Pro Thr Arg Gly Gly Asp Trp Tyr Asp
 85 90 95
 Gly Gly Phe Trp Gln Gly Leu Phe Leu His Arg Trp Gly Val Asp Asn
 100 105 110
 Asp Ala Ile Gln Ala Thr Trp Glu Tyr Leu Tyr Lys Val Val Ser Leu
 115 120 125
 Cys Asn Gln Ser Leu Glu Arg Ile Asp Thr Tyr Gln Gln Thr His Asn
 130 135 140
 Asp Glu Glu Leu Pro Val Tyr Arg Ala Glu Val Arg Ala Phe Arg Ala
 145 150 155 160
 Leu Tyr Tyr Tyr His Leu Met Asp Leu Phe Ala Arg Val Pro Leu Val
 165 170 175
 Leu Ser Ser Ser Thr Pro Leu Lys Glu Val Lys Gln Asn Ser Arg Lys
 180 185 190
 Glu Val Phe Asp Phe Val Val Lys Glu Leu Gln Glu Ser Glu Pro Leu
 195 200 205
 Leu Glu Thr Ala Tyr Ser Asn Arg Ser Gly Asn Tyr Tyr Gly Arg Ile
 210 215 220
 Thr Arg Pro Val Ala Cys Phe Leu Leu Ala Lys Leu Ala Leu Asn Ala
 225 230 235 240
 Glu Ile Tyr Thr Asp Asn Asn Trp Thr Asp Gly Gln Phe Pro Asp Gly
 245 250 255
 Lys Asp Ile Tyr Phe Glu Val Asp Gly Glu Arg Leu Asn Ala Trp Gln
 260 265 270
 Thr Val Glu Ala Tyr Cys Asp Ala Ile Thr Ala Met Gly Tyr Arg Leu
 275 280 285

Glu Asp Asn Tyr Glu Ala Asn Phe Ala Val Tyr Asn Glu Ser Ser Val
 290 295 300
 Glu Asn Ile Phe Thr Ile Pro Met Ser Lys Thr Leu Tyr Thr Asn Gln
 305 310 315 320
 Met Gln Tyr Leu Phe Arg Ser Arg His Tyr Asn His Ala Lys Ala Tyr
 325 330 335
 Gly Leu Gly Gly Glu Asn Gly Ser Ser Ala Thr Val Glu Val Leu Arg
 340 345 350
 Thr Phe Gly Tyr Asp Thr Glu Ala Val Asp Pro Arg Phe Asp Lys Cys
 355 360 365
 Tyr Phe Ala Gly Ile Val Tyr Asp Leu Lys Gly Lys Val Val Thr Leu
 370 375 380
 Asp Asp Gly Thr Gln Leu Glu Tyr Phe Pro Trp Lys Val Asp Val Asp
 385 390 395 400
 Ile Ser Asn Thr Pro Tyr Glu Lys Thr Ala Gly Ala Arg Met Lys Lys
 405 410 415
 Tyr Ala Ile Asp Glu Thr Ala Thr Lys Asp Gly Lys Leu Met Glu Asn
 420 425 430
 Asp Ile Val Leu Tyr Arg Tyr Ala Asp Val Leu Leu Met Lys Ser Glu
 435 440 445
 Ala Lys Val Arg Asn Gly Glu Asn Gly Asp Glu Glu Leu Asn Leu Val
 450 455 460
 Arg Ser Arg Val Asn Ala Pro Phe Arg Thr Ala Thr Leu Ala Asn Leu
 465 470 475 480
 Leu Ala Glu Arg Gln Leu Glu Phe Ala Trp Glu Gly Trp Arg Arg Gln
 485 490 495
 Asp Leu Ile Arg Phe Arg Gln Tyr Thr Arg Thr Tyr Thr Gly Arg Pro
 500 505 510
 Gln Leu Ser Gly Glu Lys Asn Gly Tyr Thr Thr Val Phe Pro Ile Pro
 515 520 525
 Glu Lys Val Arg Leu Met Asn Pro Asn Leu Thr Gln Asn Pro Gly Tyr
 530 535 540

<210> 9805

<211> 83

<212> PRT

<213> B.fragilis

<400> 9805

Phe Ile Gln Arg Val Pro Tyr Lys Met Leu Pro Gly Leu Thr Ser Pro
 1 5 10 15
 Asp Val Ala Arg Ala Ile Leu Tyr Leu Asn Lys Arg Thr Ile Tyr Leu
 20 25 30
 Ile Asn Arg Leu Phe Cys Tyr Asn Asp Gly Leu Ser Tyr Asp Leu Glu
 35 40 45
 Thr Ala Ala Ser Asn Phe Pro Ser Leu Leu Ala Gln Tyr Pro Gly Phe
 50 55 60
 Cys Val Arg Leu Gly Phe Ile Asn Arg Thr Phe Ser Gly Met Gly Asn
 65 70 75 80
 Thr Val Val

<210> 9806

<211> 841

<212> PRT

<213> B.fragilis

<400> 9806

Ala Ile Arg Gly Arg Val Pro Gly Leu Thr Ile Gln Lys Gly Thr Asn

1		5		10		15
Gly	Pro	Ala	Ala	Leu	Asp	Leu
		20		25		30
Thr	Ser	Gly	Asn	Asp	Pro	Leu
		35		40		45
Leu	Ser	Met	Leu	Thr	Ser	Ile
		50		55		60
Ile	Leu	Lys	Asp	Ala	Ser	Glu
		65		70		75
Ser	Gly	Val	Ile	Glu	Ile	Thr
		85		90		95
Arg	Val	Ser	Tyr	Asn	Gly	Ser
		100		105		110
Leu	Glu	Met	Leu	Ser	Gly	Asn
		115		120		125
Gly	Val	Ala	Ile	Leu	Asp	Lys
		130		135		140
Ile	Glu	Gln	Thr	Gly	Leu	Gln
		145		150		155
Gly	Thr	Asp	Ala	Ser	Tyr	Arg
		165		170		175
Gln	Gly	Ile	Ile	Leu	Asn	Glu
		180		185		190
Asn	Met	Thr	Gln	His	Val	Phe
		195		200		205
Met	Phe	Gly	Ser	Ile	Gln	Lys
		210		215		220
Thr	Phe	Tyr	Ser	Ala	Ala	Thr
		225		230		235
Asn	Pro	Glu	Thr	Asp	Ser	Trp
		245		250		255
Thr	Asn	Pro	Leu	Ala	Trp	Met
		260		265		270
His	Ile	Ser	Thr	His	Ala	Arg
		275		280		285
Lys	Leu	Ile	Leu	Phe	Gly	Ser
		290		295		300
Gln	Tyr	Leu	Pro	Thr	Ala	Val
		305		310		315
Thr	Arg	Lys	Met	Glu	Ser	Leu
		325		330		335
Lys	Lys	Trp	Asn	Lys	His	Tyr
		340		345		350
Gln	Lys	Glu	Thr	Tyr	Ser	Gly
		355		360		365
Thr	Asp	Gln	Phe	Gly	Tyr	Asn
		370		375		380
Trp	Glu	Gly	Thr	Asn	Ser	Tyr
		385		390		395
Leu	Gly	Arg	Phe	Asn	Tyr	Thr
		405		410		415
Asn	Ala	Arg	Thr	Asp	Ala	Ser
		420		425		430
Gly	Phe	Ser	Pro	Ser	Val	Ser
		435		440		445
Phe	Met	Lys	Arg	Ile	Pro	Leu
		450		455		460
Tyr	Gly	Leu	Ala	Gly	Asn	Gln
		465		470		475
						480

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Asn Leu Val Lys Pro Asn Gly Val Val Pro Val Gly Ser Ser Gln Val
485 490 495
Val Thr Leu Gly Asn Met Arg Asn Thr Asn Pro Asp Leu Lys Trp Glu
500 505 510
Val Lys Arg Thr Phe Asn Ala Gly Val Asp Leu Gly Met Phe Gly Asn
515 520 525
Arg Leu Leu Phe Ser Leu Asn Tyr Tyr Asn Ser Lys Thr Ser Asp Met
530 535 540
Leu Tyr Leu Tyr Asn Val Ser Val Pro Pro Phe Thr Tyr Asn Thr Leu
545 550 555 560
Leu Ala Asn Ile Gly Ser Met Arg Asn Ser Gly Thr Glu Ile Ala Val
565 570 575
Gly Leu Thr Pro Leu Lys Thr Gln Asp Met Glu Leu Asn Val Asn Val
580 585 590
Asn Val Thr Phe Gln Gln Asn Lys Leu Leu Ser Leu Ser Gly Met Tyr
595 600 605
Gly Gly Glu Asn Ile Ser Ala Pro Glu Tyr Lys Ser Leu Ala Ser Leu
610 615 620
Asp Gly Ala Gly Phe His Gly Gly Tyr Asn His Ile Val Tyr Gln Met
625 630 635 640
Val Gly Gln Pro Leu Gly Val Phe Tyr Leu Pro His Cys Lys Gly Leu
645 650 655
Ile Ala Asp Gly Asn Gly Gly Tyr Thr Tyr Asp Ile Ala Asp Leu Asn
660 665 670
Gly Gly Gly Val Ser Leu Glu Asp Gly Glu Asp Arg Tyr Val Ala Gly
675 680 685
Gln Ala Val Pro Lys Thr Leu Leu Gly Ser Asn Ile Ser Phe Arg Tyr
690 695 700
Lys Arg Phe Asp Leu Ser Val Gln Val Asn Gly Ala Phe Gly His Lys
705 710 715 720
Ile Tyr Asn Gly Thr Ser Leu Thr Tyr Met Asn Met Asn Ile Phe Pro
725 730 735
Asp Tyr Asn Val Met Lys Lys Ala Pro Gly Arg Asn Ile Lys Asp Gln
740 745 750
Thr Ala Thr Asp Tyr Trp Leu Glu Lys Gly Asp Tyr Ile Asn Phe Asp
755 760 765
Tyr Val Thr Val Gly Trp Asn Val Pro Val Thr Lys Trp Lys Lys Tyr
770 775 780
Val Gln Ser Phe Arg Leu Ala Phe Thr Val Asn Asn Leu Ala Thr Ile
785 790 795 800
Thr Gly Tyr Ser Gly Leu Ser Pro Met Ile Asn Ser Ser Thr Val Asn
805 810 815
Ser Thr Leu Gly Val Asp Asp Lys Arg Ala Tyr Pro Leu Ala Arg Thr
820 825 830
Tyr Thr Leu Gly Leu Ser Ile Asn Phe
835 840

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<210> 9807

<211> 347

<212> PRT

<213> B.fragilis

<400> 9807

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Ser Thr Met Gly Arg Lys Tyr Leu Gln Ser Phe Tyr Val Leu Ala Leu
1 5 10 15
Ile Ile Ser Ala Leu Phe Phe Pro Ala Phe Ser Gly Asp Asn Asn Ile
20 25 30
Lys Thr Ala Gly Ala Asn Met Ser Tyr Gly Asn Arg Leu Val Met Gln
35 40 45

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Thr Gly His Lys Ser Ala Asn Leu Val Ser Gly Val Glu Lys Val Glu
 50          55          60
Trp Met Lys Val Leu Gln Asp Thr Leu Pro Val Cys Lys Ile Ser Ile
65          70          75          80
Pro Gly Thr His Asp Ser Gly Ser Thr Lys Gly Gly Cys Met Leu Lys
          85          90          95
Thr Gln Thr Ala Asp Ile Pro Ala Gln Leu Gln Lys Gly Ile Arg Ala
          100          105          110
Phe Asp Ile Arg Leu Lys Glu Lys Asn Gly Lys Leu Gly Val Phe His
          115          120          125
Ser His Ala Phe Gln Asp Ile Tyr Trp Glu Glu Asp Val Leu Leu Ala
          130          135          140
Phe Ile Ser Phe Leu Gln Ala His Pro Ser Glu Thr Leu Ile Val Ser
145          150          155          160
Leu Lys Lys Glu Gly Gly Glu Ile Lys Asp Tyr Ala Ser Leu Leu Ser
          165          170          175
Ala Ser Leu Asn Thr Pro Ala Tyr Gln Arg Tyr Phe Ile Ala Asp Phe
          180          185          190
His Pro Glu Leu Thr Leu Lys Ser Cys Arg Gly Lys Ile Leu Phe Leu
          195          200          205
His Arg Asp His Ala Met Asp Asn Tyr Pro Gly Ala Ala Cys Ile Gly
210          215          220
Trp Asp Asp Asn Thr Thr Cys Leu Leu Thr Leu Arg Asn Lys Asp Gly
225          230          235          240
Lys Glu Ala Thr Val Phe Leu Gln Asp Glu Tyr Gln Tyr Asn Ser Gly
          245          250          255
Lys Glu Ala Gly Lys Lys Ile Ala Ala Cys Ile Arg Asn Phe Asp Arg
          260          265          270
Ile Cys Glu Glu Gln Thr Phe Ser Arg Arg Trp Gly Ile Ser Phe Val
          275          280          285
Ser Ala Thr Gly Leu His Ser Gly Ile Pro Leu Val Phe Ala Asn Lys
290          295          300
Val Asn Lys Pro Val Ala Asp Tyr Leu Lys Glu Asn Arg Lys Arg Asn
305          310          315          320
Cys Gly Ile Val Phe Ile Asp Phe Ile Glu Ser Ser Gly Gly Gln Lys
          325          330          335
Leu Val Glu Tyr Leu Ile Gly Gly Asn Ile Tyr
          340          345

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<210> 9808

<211> 85

<212> PRT

<213> B.fragilis

<400> 9808

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Leu Met Glu Gly His Leu Val Leu Lys Val Arg Trp Phe Val Pro Tyr
1          5          10          15
Trp Gln His Phe Leu His Tyr Ser Leu Ser Gly Gly Ser Asn Ile His
          20          25          30
His Arg Gly Cys Gly Gly Ile Lys Val Ile Ala Trp Ile Leu Phe Phe
          35          40          45
Phe Arg Ile Trp Lys Tyr Glu Met Thr Ile Val Lys Phe Gln Leu Ser
          50          55          60
Val Leu Tyr Gly Leu Ala Ser Ala Asn Asp Ile Leu Lys Glu Leu Leu
65          70          75          80
His Ile Cys Ala Lys
          85

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<210> 9809

<211> 353
 <212> PRT
 <213> B.fragilis

<400> 9809

Thr Phe Ile Ile Asn Met Lys Ile Lys His Leu Phe Ile Gly Ile Ala
 1 5 10 15
 Leu Thr Ala Asn Leu Phe Ala Ala Thr Ala Gln Glu Val Lys Lys Thr
 20 25 30
 Tyr Phe Val Ser Lys Pro Gly Thr Leu Ile Ser Met Met Thr Glu Glu
 35 40 45
 Glu Ala Asn Gln Val Thr His Leu Thr Leu Thr Gly Lys Ile Asn Ala
 50 55 60
 Val Asp Phe Arg His Leu Arg Asp Glu Phe Lys Asn Leu Gln Val Leu
 65 70 75 80
 Asp Ile Ala Asn Ala Ser Ile Ser Met Tyr Ser Gly Lys Glu Gly Thr
 85 90 95
 Tyr Pro Asp Lys Phe Tyr Ile Tyr Met Pro Asn Phe Val Pro Ala Tyr
 100 105 110
 Ala Phe Cys Lys Met Glu Asn Gly Thr Ala Lys Gly Lys Ser Thr Leu
 115 120 125
 Lys Lys Ile Ile Leu Ser Glu Lys Ile Lys Asn Ile Glu Asp Ala Ala
 130 135 140
 Phe Met Gly Cys Glu Asn Leu Asn Ile Cys Gln Ile Lys Lys Lys Thr
 145 150 155 160
 Pro Pro Asn Leu Leu Pro Glu Ala Leu Ala Asp Ser Ile Thr Ala Ile
 165 170 175
 Phe Val Pro Leu Gly Ala Ser Asp Glu Tyr Arg Leu Lys Asn Arg Trp
 180 185 190
 Asp Asn Phe Ala Phe Ile Glu Gly Glu Pro Leu Glu Ala Lys Ile Glu
 195 200 205
 Val Gly Ala Leu Ser Thr Leu Glu Asn Glu Ile Gln Lys Ala Gly Leu
 210 215 220
 Gln Pro Lys Glu Ile Asn Phe Leu Thr Ile Glu Gly Lys Leu Asp Ala
 225 230 235 240
 Ala Asp Phe Lys Leu Ile Arg Asp Tyr Met Pro Asn Leu Val Ala Val
 245 250 255
 Asp Ile Glu Lys Thr Asn Ala Thr Ala Ile Pro Asp Phe Thr Phe Ser
 260 265 270
 Gln Lys Lys Tyr Leu Leu Arg Ile Arg Leu Pro His Gly Leu Lys Ser
 275 280 285
 Ile Gly Gln Arg Ala Phe Ser Asn Cys Gly Arg Leu Cys Gly Thr Val
 290 295 300
 Glu Leu Pro Glu Ser Ile Thr Ala Ile Glu Tyr Gly Ala Phe Met Gly
 305 310 315 320
 Cys Asp Arg Leu Arg Tyr Val Val Ala His Gly Asp Lys Ile Thr Thr
 325 330 335
 Ile Gly Asp Asn Leu Phe Gly Glu Gly Lys Asn Lys Leu Ile Tyr Lys
 340 345 350
 Arg

<210> 9810
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 9810

Ile Asn Lys Met Glu Gln Gln Asp His Glu Ser Phe Phe Ser Pro Lys

1		5		10		15									
Gly	Ile	Pro	Ala	Phe	Ala	Ser	Ile	Ile	Ile	Phe	Leu	Val	Ser	Phe	Phe
		20						25					30		
Ile	Val	Met	Ser	Leu	Phe	His	Ser	Val	Leu	Asn	Leu	Phe	Ser	Val	Val
		35					40					45			
Arg	Gly	Tyr	Gly	Met	Gly	Tyr	Phe	Phe	Ile	Gly	Glu	Gly	Ile	Met	Leu
	50					55					60				
Leu	Ser	Val	Phe	Ile	Val	Thr	Phe	Leu	Met	Met	Arg	Phe	Leu	Asp	Arg
65					70					75					80
Arg	Pro	Phe	Ser	Asp	Leu	Gly	Phe	Ser	Leu	Lys	Gly	Arg	Gly	Lys	Asp
			85						90				95		
Ile	Leu	Tyr	Gly	Phe	Leu	Val	Ala	Val	Leu	Ile	Tyr	Ala	Ile	Gly	Phe
		100						105					110		
Gly	Val	Cys	Leu	Leu	Thr	Gly	Gln	Ile	Glu	Val	Val	Ser	Val	His	Leu
		115					120					125			
His	Trp	Ser	Asp	Leu	Leu	Leu	Ser	Gly	Leu	Phe	Phe	Ala	Met	Val	Ala
	130					135						140			
Ile	Val	Glu	Glu	Thr	Met	Met	Arg	Gly	Tyr	Val	Leu	Gly	Arg	Leu	Leu
145					150					155					160
Arg	Thr	Arg	Leu	Asn	Lys	Phe	Ile	Ser	Leu	Leu	Ile	Ser	Ser	Leu	Leu
			165						170				175		
Phe	Ala	Leu	Leu	His	Leu	Met	Asn	Pro	Asn	Val	Ala	Phe	Leu	Pro	Met
		180						185					190		
Leu	Asn	Leu	Val	Leu	Gly	Gly	Leu	Leu	Leu	Gly	Ala	Ser	Tyr	Leu	Tyr
	195						200					205			
Thr	Arg	Asn	Leu	Trp	Phe	Pro	Val	Ser	Leu	His	Phe	Phe	Trp	Asn	Trp
	210					215						220			
Ile	Gln	Gly	Pro	Val	Leu	Gly	Tyr	Glu	Val	Ser	Gly	Asn	Arg	Phe	Cys
225					230					235					240
Glu	Thr	Leu	Phe	Ser	Leu	Arg	Leu	Pro	Ala	Asn	Asn	Leu	Ile	Asn	Gly
			245						250				255		
Gly	Ala	Phe	Gly	Phe	Glu	Gly	Ser	Leu	Val	Cys	Thr	Val	Leu	Ala	Thr
		260					265					270			
Leu	Phe	Thr	Leu	Phe	Ile	Ile	Trp	Trp	Phe	Glu	His	Ser	Ser	Gln	Gly
	275					280						285			
Met	Arg	Arg	Tyr												
	290														

<210> 9811

<211> 261

<212> PRT

<213> B.fragilis

<400> 9811

Phe	Cys	Ile	Val	Cys	Thr	Gly	Ile	Leu	Tyr	Ser	Arg	Leu	Cys	Ala	Leu
1				5				10					15		
Thr	Phe	Leu	Pro	Gln	Ala	Leu	Gly	Lys	Lys	Glu	Asp	Ala	Lys	Leu	Phe
		20						25					30		
Tyr	Asp	Arg	Ser	Leu	Gly	Tyr	Lys	His	Tyr	Tyr	Cys	Lys	Glu	Phe	Gly
	35						40					45			
Thr	Leu	Arg	Pro	Ile	Leu	Pro	Asp	Gly	Thr	Phe	Tyr	Ser	Pro	Phe	Asp
	50					55					60				
Pro	Met	Glu	Gly	Ala	Asn	Phe	Ala	Pro	Ser	Pro	Gly	Phe	His	Glu	Gly
65					70					75					80
Asn	Ser	Trp	Asn	Tyr	Thr	Phe	Tyr	Val	Pro	His	Asp	Ile	Ala	Gly	Leu
			85						90				95		
Thr	Arg	Leu	Met	Gly	Gly	Lys	Lys	Lys	Phe	Val	Asp	Lys	Leu	Gln	Lys
		100						105					110		
Val	Phe	Asp	Glu	Gly	Leu	Tyr	Asp	Pro	Ala	Asn	Glu	Pro	Asp	Ile	Ala

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<210> 9812
<211> 255
<212> PRT
<213> B.fragilis
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<400>	9812															
Thr	Phe	Leu	Val	Asn	Asn	Glu	Leu	Ser	Gly	Met	Cys	Gln	Ser	Asp	Ile	
1				5					10					15		
Lys	Val	Leu	Pro	Leu	Leu	Arg	Phe	Leu	Ala	Lys	Gln	Thr	Asn	Trp	Gln	
			20					25					30			
Ser	Phe	Cys	Cys	Lys	Ala	Ser	Thr	Ser	Lys	Cys	Arg	Ile	Asp	Met	Lys	
		35				40						45				
Leu	Asn	Pro	Phe	Asn	Lys	Asn	Lys	Asn	Arg	Ile	Asp	Met	Asp	Pro	Lys	
	50					55					60					
Glu	Lys	Lys	Thr	Lys	Gln	Glu	Glu	Glu	Leu	Lys	Val	Asp	Asp	Ile	Gln	
65				70						75					80	
Asp	Thr	Val	Glu	Gly	Gln	Ser	Gln	Asn	Glu	Glu	Ala	Thr	Glu	Ala	Thr	
			85						90					95		
Glu	Pro	Leu	Thr	Ala	Glu	Glu	Lys	Leu	Glu	Lys	Glu	Leu	Lys	Glu	Ala	
			100					105					110			
Gln	Ala	Gln	Ile	Glu	Asp	Gln	Lys	Asp	Lys	Tyr	Leu	Arg	Leu	Ser	Ala	
		115				120						125				
Glu	Phe	Asp	Asn	Tyr	Arg	Lys	Arg	Thr	Val	Lys	Glu	Lys	Ala	Glu	Leu	
	130					135					140					
Ile	Leu	Asn	Gly	Gly	Glu	Lys	Ser	Ile	Lys	Ser	Ile	Leu	Pro	Val	Ile	
145				150						155					160	
Asp	Asp	Met	Glu	Arg	Ala	Leu	Thr	Thr	Met	Glu	Thr	Ala	Thr	Asp	Val	
			165						170					175		
Asn	Ala	Val	Lys	Glu	Gly	Val	Glu	Leu	Ile	Tyr	Asn	Lys	Phe	Leu	Ser	
			180				185						190			
Ile	Leu	Ser	Gln	Asp	Gly	Val	Lys	Val	Ile	Glu	Thr	Lys	Asp	Gln	Pro	
		195				200						205				
Leu	Asp	Thr	Asp	Tyr	His	Glu	Ala	Ile	Ala	Val	Ile	Pro	Ala	Pro	Thr	
	210					215					220					
Glu	Glu	Gln	Lys	Gly	Lys	Ile	Leu	Asp	Cys	Val	Gln	Thr	Gly	Tyr	Thr	
225				230						235					240	
Leu	Asn	Gly	Lys	Val	Ile	Arg	His	Ala	Lys	Val	Val	Val	Gly	Glu		
			245						250					255		

<210> 9813
 <211> 297
 <212> PRT
 <213> B.fragilis

<400> 9813

His	Ile	Cys	Ser	Phe	His	Ala	Ile	Asn	Arg	Phe	Leu	Ser	Ser	Val	Ile
1				5					10					15	
Lys	Tyr	Pro	Gln	Ile	Leu	Ser	Ser	Leu	Ser	Leu	Ile	Tyr	Ile	Tyr	Val
			20					25					30		
His	Pro	Lys	Asn	Glu	Met	Glu	Arg	Glu	Phe	Asn	Asn	Asp	Met	Leu	Asn
		35					40					45			
Arg	Ala	Glu	Ala	Ile	Arg	Cys	Ile	Arg	Val	Gln	Ser	Leu	Ile	Asn	Lys
	50					55					60				
Lys	Phe	Asp	Phe	Leu	Asp	Lys	His	Lys	Met	Lys	Ala	Asp	Phe	Ile	Asp
65					70					75				80	
Tyr	Phe	Ala	Lys	Met	Met	Gln	Ile	Lys	Asp	Gln	Lys	Trp	Lys	Met	Val
				85					90					95	
Tyr	Ala	His	Phe	Ser	Asn	Phe	Val	Gln	Gly	Lys	Cys	Asn	Phe	Gly	Glu
			100					105					110		
Val	Asn	Val	Asp	Leu	Cys	Lys	Arg	Phe	Arg	Ala	Tyr	Leu	Leu	Asn	Ala
		115					120					125			
Lys	Gln	Leu	Lys	His	Thr	Thr	Arg	Lys	Val	Ser	Leu	Asn	Ser	Ala	Ala
	130						135				140				
Gly	Tyr	Tyr	Ser	Thr	Phe	Arg	Gly	Leu	Ser	Lys	Ile	Ala	Tyr	Arg	Asp
145					150					155					160
Lys	Leu	Leu	Arg	Glu	Asn	Ile	Asn	Asp	Phe	Leu	Glu	Lys	Ile	Glu	Tyr
				165					170					175	
Glu	Asp	Val	Lys	Lys	Glu	Tyr	Leu	Thr	Leu	Asp	Glu	Val	Lys	Gln	Leu
			180					185					190		
Ala	Ala	Thr	Pro	Cys	Asp	Ile	Pro	Val	Leu	Lys	Ala	Val	Ser	Leu	Phe
		195					200					205			
Ser	Cys	Leu	Thr	Gly	Phe	Arg	Ile	Ser	Asp	Ile	Met	Asn	Leu	Gln	Trp
	210					215					220				
Ser	Asp	Phe	Gly	Ile	Ala	Pro	Asp	Gln	Gly	Tyr	Cys	Ile	Arg	Ile	Arg
225					230					235					240
Thr	Gln	Lys	Thr	Lys	Thr	Gly	Ala	Thr	Leu	Pro	Ile	Ser	His	Glu	Ala
				245					250					255	
Phe	Glu	Leu	Cys	Gly	Glu	Val	Gly	Thr	Gly	Lys	Val	Phe	Lys	Gly	Leu
			260					265					270		
Gly	Arg	Ser	Met	Ile	Asn	Tyr	Pro	Leu	Lys	Asn	Trp	Leu	Lys	Gln	Thr
		275					280					285			
Lys	Ile	Leu	Lys	His	Ile	Ile	Phe	His							
	290					295									

<210> 9814
 <211> 573
 <212> PRT
 <213> B.fragilis

<400> 9814

Val	Arg	Leu	Ser	Ile	Gly	Leu	His	Thr	Lys	Ser	Cys	Tyr	Lys	Thr	Ser
1				5					10					15	
Ala	Cys	Asp	Gly	Leu	Phe	Ser	Phe	Glu	Pro	Ile	Leu	Thr	Leu	Arg	Leu
			20					25					30		
Lys	Pro	Ser	Tyr	Leu	Leu	Val	Val	Val	His	Cys	Asn	Gly	Ile	Thr	Asp
		35					40					45			
Arg	Asp	Met	Phe	Gly	Lys	Ser	Asp	Asp	Leu	Lys	Asp	Met	Arg	Lys	Trp
	50						55					60			

Arg	Val	Trp	Lys	Leu	Lys	Leu	Ile	Asp	Ala	Arg	Leu	Tyr	Phe	Val	Ser
65					70					75					80
Ile	Phe	Val	Gly	Leu	Leu	Thr	Gly	Leu	Val	Ala	Val	Pro	Tyr	His	Tyr
			85						90					95	
Leu	Leu	Gln	Leu	Phe	Phe	Asn	Thr	Arg	Arg	Asp	Phe	Phe	Asp	Ser	His
			100					105					110		
Pro	His	Trp	Tyr	Trp	His	Ile	Pro	Ile	Phe	Leu	Ser	Leu	Trp	Gly	Ile
		115					120					125			
Leu	Leu	Phe	Val	Met	Trp	Leu	Val	Lys	Lys	Met	Pro	Leu	Ile	Thr	Gly
	130					135					140				
Gly	Gly	Ile	Pro	Gln	Thr	Arg	Gly	Val	Ile	Asn	Gly	Arg	Ile	Ser	Tyr
145					150					155					160
Lys	His	Pro	Phe	Ile	Glu	Leu	Val	Ser	Lys	Phe	Val	Gly	Gly	Val	Leu
				165					170					175	
Ala	Leu	Ser	Ala	Gly	Leu	Ser	Leu	Gly	Arg	Glu	Gly	Pro	Ser	Val	Gln
			180					185					190		
Ile	Gly	Ser	Tyr	Val	Gly	Cys	Leu	Val	Ser	Lys	Trp	Gly	Arg	Val	Leu
	195						200					205			
Ala	Gly	Glu	Arg	Lys	Gln	Leu	Leu	Ala	Ala	Gly	Ala	Gly	Ala	Gly	Leu
	210					215					220				
Ala	Ala	Ala	Phe	Ala	Ala	Pro	Leu	Ala	Ser	Ser	Leu	Leu	Val	Ile	Glu
225					230					235					240
Ser	Ile	Glu	Arg	Phe	Asp	Ala	Pro	Lys	Thr	Ala	Ile	Thr	Thr	Leu	Leu
				245					250					255	
Ala	Gly	Val	Val	Ala	Gly	Gly	Val	Ala	Ser	Met	Ile	Phe	Pro	Ile	Asn
			260					265					270		
Pro	Tyr	Phe	Gln	Ile	Asp	Ala	Ile	Ser	Pro	Gly	Leu	Thr	Phe	Phe	Ser
		275					280					285			
Gln	Val	Lys	Leu	Phe	Leu	Leu	Leu	Ala	Ala	Val	Ile	Ser	Val	Ser	Gly
	290					295					300				
Lys	Ile	Tyr	Ser	Val	Ile	Thr	Val	Trp	Phe	Lys	Arg	Leu	Tyr	Pro	Ala
305					310					315					320
Ile	Lys	His	Pro	Ala	Tyr	Val	Lys	Met	Leu	Tyr	Leu	Leu	Phe	Ile	Ala
				325					330					335	
Tyr	Leu	Ile	Ser	Leu	Thr	Glu	Val	Asn	Leu	Thr	Gly	Gly	Gly	Glu	Gln
			340					345					350		
Phe	Leu	Leu	Gly	Gln	Ala	Met	His	Ala	Asp	Thr	His	Ile	Met	Trp	Ile
		355					360					365			
Val	Gly	Met	Met	Ile	Leu	His	Phe	Val	Phe	Ser	Val	Leu	Ser	Phe	Ser
	370					375					380				
Ser	Gly	Leu	Pro	Gly	Gly	Ser	Phe	Ile	Pro	Thr	Leu	Val	Thr	Gly	Gly
385					390					395					400
Leu	Ile	Gly	Gln	Ile	Val	Ala	Leu	Ile	Leu	Val	Arg	Gln	Gly	Ile	Ile
				405					410					415	
Gly	Tyr	Glu	Asn	Ile	Ser	Tyr	Val	Met	Leu	Ile	Cys	Met	Ser	Ala	Phe
			420					425					430		
Leu	Val	Ala	Val	Ile	Arg	Thr	Pro	Leu	Thr	Ala	Ile	Val	Leu	Ile	Thr
		435					440					445			
Glu	Ile	Thr	Gly	His	Leu	Glu	Val	Phe	Tyr	Pro	Ser	Ile	Val	Val	Gly
	450					455					460				
Gly	Leu	Thr	Tyr	Tyr	Phe	Thr	Glu	Met	Leu	Gln	Ile	Gln	Pro	Phe	Asn
465					470					475					480
Val	Thr	Leu	Tyr	Asp	Asp	Met	Ile	Asn	Ser	Pro	Glu	Phe	Gln	Glu	Glu
				485					490					495	
Lys	Arg	Tyr	Thr	Leu	Ser	Val	Glu	Val	Met	Ser	Gly	Ser	Tyr	Phe	Asp
			500					505					510		
Gly	Lys	Thr	Val	Asn	Glu	Ile	Gln	Leu	Pro	Glu	Arg	Cys	Glu	Ile	Ile
		515					520					525			
Asn	Ile	His	Arg	Asp	Arg	Lys	Asp	Ile	Pro	Pro	Ala	Lys	Gln	Lys	Leu

530		535		540
Val Pro Gly Asp Gln	Val Gln Ile Glu Met Asp	Ala Gln Asp Ile Glu		
545	550	555		560
Lys Leu Tyr Glu Pro	Leu Val Ser Met Ala Asn Ile Tyr			
	565	570		

<210> 9815
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9815
Cys Val Met Phe Ala Met Glu Ser Ala Cys Ser Leu Gly Asn Phe Cys
1 5 10 15
Ala Gly Arg Ser Glu Phe Leu Leu Ile Arg Ser Arg Leu Cys Arg Ile
20 25 30
Thr His Val Asn Ser Ile Gly Arg Ile Leu Lys Tyr Phe His Arg Tyr
35 40 45
Met Glu Ile Ile Phe Asp Phe Asn Phe Ile Val Ser
50 55 60

<210> 9816
 <211> 80
 <212> PRT
 <213> B.fragilis

<400> 9816
Cys Phe Ser Thr Glu Thr Thr Ile Tyr Asn Ser Tyr Leu Thr Phe Glu
1 5 10 15
Asp Ile Leu Phe Lys Tyr Leu Asn Leu Leu Tyr Thr Lys Val Tyr Met
20 25 30
Asn Ile Leu Gly Val Asn Gln Val Ser Leu Phe Phe Thr Tyr Ala Ser
35 40 45
Ile Thr Leu Leu Phe Leu Gly Val Phe Ser Ile Ala Asp Thr Leu Arg
50 55 60
Val Arg Ala Leu Lys Ile Asn Ala Thr Gly Lys Thr Val Phe Gln Asn
65 70 75 80

<210> 9817
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 9817
Thr Leu Ser Thr Glu Ser Asn Trp Asn Asn Asn Leu Ala Met Asn Arg
1 5 10 15
Glu Gln Lys Ile Leu Ser Leu Leu Asp Gln Phe Lys Gly Leu Gly Ile
20 25 30
Asp Gln Gln Ile Asp Tyr Asn Lys Phe Tyr Leu Tyr Ser Ile Ile Thr
35 40 45
His Ser Thr Ala Ile Glu Gly Ser Thr Val Thr Glu Ile Glu Asn Gln
50 55 60
Leu Leu Phe Asp Glu Gly Ile Ser Ala Lys Gly Arg Ser Met Thr Glu
65 70 75 80
Gln Leu Met Asn Leu Asp Leu Lys Ala Ala Tyr Glu Gln Ser Ile Val
85 90 95
Phe Ala Lys Ser His Ser Asp Ile Ser Val Asp Met Leu Lys Lys Leu
100 105 110
Ser Ser Ile Val Leu Lys Asn Thr Gly Thr Ile Tyr Asn Thr Pro Leu

115	120	125
Gly Glu Phe Ser Ser Ala Asn Gly Asp Leu Arg Leu Leu Asn Val Thr		
130	135	140
Ala Gly Thr Gly Gly Cys Ser Tyr Thr Asn Tyr Ser Lys Val Pro Thr		
145	150	155
Lys Leu Ala Glu Leu Cys Glu Asn Ile Asn Gln Arg Arg Lys Ser Leu		
165	170	175
Ser Lys Thr Asp Ile Ile Glu Cys Tyr Lys Leu Ser Phe Asp Thr His		
180	185	190
Phe His Leu Ala Thr Ile His Pro Trp Ala Asp Gly Asn Gly Arg Met		
195	200	205
Ser Arg Leu Leu Met Asn Arg Leu Gln Phe Glu Leu Asp Ile Ile Pro		
210	215	220
Phe Asn Ile Asn Lys Asp His Lys Thr Glu Tyr Ile Glu Ala Phe Ile		
225	230	235
Ala Thr Arg Glu Asn Asp Asp Ile Glu Leu Phe Arg Gly Phe Met Phe		
245	250	255
Asp Glu His Ile Arg Asn Leu Glu Gln Thr Ile Arg Asn Tyr Arg Asp		
260	265	270
Ser Pro Ser Asp Cys Val Asn Lys Lys Leu Gln Asp Phe Ser Arg Ser		
275	280	285
Phe Leu Leu Thr Leu Tyr Phe Glu His Phe Leu Leu Asn Gln Thr Ile		
290	295	300

<210> 9818
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 9818
Lys Thr Thr Thr Asn Ser Ile Arg Phe Tyr Leu Leu Ile Ser Met Met
1 5 10 15
Tyr Gln Tyr Asn Val Lys Ala Leu Lys Lys Ala Ile Lys Arg Thr Phe
20 25 30
Gly Asn Arg His Thr Glu Tyr Lys Ile Asp Thr Met Phe Phe Arg Ala
35 40 45
Glu Tyr Pro Asp Asn Ala Gly Met Gln Ile Arg Trp Lys Gly Phe Ile
50 55 60
His Lys Ile Thr Ser Arg Ser Glu Leu Ser Phe Ser Asp Val Val Arg
65 70 75 80
Tyr Leu

<210> 9819
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 9819
Lys Gln Asp Thr Asn Asp Met Thr Val Phe Leu Ser Phe Arg Ala Phe
1 5 10 15
Arg Leu Tyr Ser Ser Ile Ser Tyr Phe Val Lys Leu Thr Ile Glu Ala
20 25 30
Thr Ile Ala Ala Ile Glu Ala Met Glu Leu Leu Met Pro Thr Ala Pro
35 40 45
Ala Val Val Ile Phe Phe Arg Ser Pro Leu Leu Gly Thr Ile Ile Ser
50 55 60
His Pro Gly Ser Met Ala Phe Ala Val Phe Leu Leu Asn Arg Glu Thr
65 70 75 80

Val Pro Phe Ile Tyr Thr Thr
85

<210> 9820

<211> 547

<212> PRT

<213> B.fragilis

<400> 9820

Val	Cys	Ala	Thr	Gln	Leu	Ile	Cys	Asn	Pro	Met	Lys	Ile	Tyr	His	Lys
1				5					10					15	
Phe	Phe	Leu	Tyr	Gln	Asn	Lys	Leu	Leu	Gln	Pro	Tyr	Val	Arg	Leu	Leu
			20					25					30		
Leu	Arg	Leu	Met	Ala	Ile	Ile	Thr	Tyr	Leu	Ala	Ser	Ile	Met	Leu	Ile
		35					40					45			
Val	Gly	Val	Ile	Tyr	Glu	His	Gly	Phe	Thr	Leu	Ser	Ala	His	Glu	Val
	50					55					60				
Thr	Lys	Ile	His	Leu	Leu	Tyr	Lys	Thr	Val	Trp	Ile	Ile	Phe	Leu	Ile
65					70					75					80
Asp	Val	Thr	Leu	His	Ile	Leu	Leu	Glu	Tyr	Arg	Asp	Thr	Lys	Lys	Asn
				85					90					95	
Phe	Arg	Lys	Leu	Ala	Trp	Ile	Leu	Ser	Trp	Leu	Leu	Tyr	Leu	Thr	Leu
			100					105					110		
Ile	Pro	Val	Ile	Phe	His	Arg	Pro	Glu	Glu	Gly	Gly	Ala	Ile	Leu	His
		115					120					125			
Leu	Trp	Glu	Phe	Leu	His	Gly	Tyr	Phe	Tyr	His	Ile	Val	Leu	Leu	Leu
	130					135						140			
Leu	Phe	Ser	Leu	Leu	Asn	Leu	Ser	Asn	Gly	Leu	Val	Arg	Leu	Leu	Gly
145					150					155					160
Arg	Arg	Thr	Asn	Pro	Ser	Leu	Ile	Leu	Ala	Ala	Ser	Phe	Leu	Val	Ile
				165					170					175	
Ile	Leu	Ile	Gly	Ala	Gly	Leu	Leu	Met	Leu	Pro	Arg	Cys	Thr	Val	Asp
			180					185					190		
Gly	Val	Thr	Leu	Ser	Trp	Val	Asp	Ala	Leu	Phe	Thr	Ser	Thr	Ser	Ala
		195					200					205			
Val	Cys	Val	Thr	Gly	Leu	Val	Pro	Val	Asp	Val	Ser	Ala	Thr	Phe	Thr
	210					215					220				
Pro	Ala	Gly	Leu	Thr	Val	Ile	Ile	Leu	Leu	Ile	Gln	Ile	Gly	Gly	Leu
225					230					235					240
Gly	Val	Met	Thr	Leu	Thr	Ser	Phe	Phe	Ala	Met	Phe	Phe	Met	Gly	Asn
			245						250					255	
Thr	Ser	Leu	Tyr	Asn	Gln	Leu	Val	Val	Arg	Asp	Met	Val	Ser	Ser	Asn
			260						265					270	
Ser	Leu	Gly	Ser	Leu	Leu	Ser	Thr	Leu	Leu	Tyr	Ile	Leu	Gly	Phe	Thr
		275					280					285			
Leu	Val	Ile	Glu	Gly	Val	Gly	Met	Leu	Ser	Ile	Trp	Phe	Ser	Ile	His
	290					295					300				
Gly	Thr	Leu	Gly	Met	Asp	Val	Gln	Asp	Glu	Leu	Ala	Phe	Ser	Ala	Phe
305				310						315					320
His	Ser	Ile	Ser	Ala	Phe	Cys	Asn	Ala	Gly	Phe	Ser	Thr	Leu	Pro	Gly
				325					330					335	
Asn	Leu	Gly	Asn	Pro	Met	Val	Met	Thr	Asn	His	Asn	Trp	Leu	Tyr	Ile
			340					345					350		
Thr	Val	Ser	Leu	Leu	Ile	Ile	Phe	Gly	Gly	Ile	Gly	Phe	Pro	Ile	Leu
		355					360					365			
Val	Asn	Phe	Lys	Asp	Ile	Ile	Val	Tyr	His	Ala	Arg	Arg	Phe	Trp	Arg
	370					375					380				
Leu	Ile	Arg	Thr	Arg	Gln	Trp	Asp	Asn	His	Arg	Val	His	His	Leu	Phe
385					390					395					400


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Asn Leu Asn Thr Lys Ile Val Leu Ile Met Thr Val Leu Leu Leu Val
      405                      410                      415
Phe Gly Thr Val Ala Ile Ala Ile Phe Glu Trp Asn His Ser Phe Ala
      420                      425                      430
Gly Met Ser Ile Ala Asp Lys Trp Thr Gln Ala Phe Phe Asn Ala Thr
      435                      440                      445
Cys Pro Arg Thr Ala Gly Phe Ser Ser Val Asp Leu Thr Ser Leu Ser
      450                      455                      460
Ile Gln Thr Ile Met Leu Tyr Ile Val Leu Met Trp Ile Gly Gly Ala
      465                      470                      475                      480
Ala Gln Ser Thr Ala Gly Gly Val Lys Val Asn Ala Phe Ala Val Ala
      485                      490                      495
Ser Leu Asn Leu Ile Ala Val Leu Arg Gly Thr Glu Arg Val Glu Val
      500                      505                      510
Phe Gly Arg Glu Leu Ser His Asp Ser Ile Arg Arg Ser Asn Ala Ala
      515                      520                      525
Val Val Val Ser Ser Leu Ile Pro Gln His Tyr Asn Leu Thr Leu Phe
      530                      535                      540
Ile Ser Ser
545

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<210> 9821

<211> 208

<212> PRT

<213> B.fragilis

<400> 9821

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Tyr Lys Ile Ala Ser Lys Met Lys Asn Met Thr Leu Gln Glu Leu Tyr
1      5      10      15
Asp Tyr Leu Asn Ser Pro Glu Phe Gln Asn Val Lys Ser Gly Asn Ile
      20      25      30
Phe Tyr Asn Tyr Tyr Ile Tyr Gln Tyr Pro Ala Thr Lys Glu Tyr Glu
      35      40      45
Met Arg Arg Gln Ile Leu Val Phe Lys Gln Asn Leu Glu Arg Pro Ser
      50      55      60
Ser Phe Ile Asn Ala Met Leu Leu Asp Leu Phe Gln Val Phe Cys Asp
      65      70      75      80
Tyr Leu Lys Ala Glu Lys Phe Gly Met Asp Ser Leu Phe Asp Leu Thr
      85      90      95
Leu Glu Asp Asp Lys Val Gln Pro Asp Ile Val Thr Thr Glu Leu Thr
      100     105     110
Asn Glu Ala Asn Ser Asp His Phe Ile Gln Tyr Val His Arg Arg Ile
      115     120     125
Asp Glu Tyr Met Gln Val Asn Asp Gly Leu Asn Lys Pro Tyr Ile Phe
      130     135     140
Ile His Gly Ile Gly Lys Met Phe Pro Tyr Leu Arg Thr Asn Arg Phe
      145     150     155     160
Leu Thr Arg Tyr Glu Lys Tyr Asn Asp Thr Ser Leu Tyr Lys Ile Ile
      165     170     175
Leu Phe Tyr Pro Gly His Gln Glu Gly Asn Ser Phe Ser Leu Phe Asp
      180     185     190
Thr Leu Glu Asp Ser His Thr Tyr Arg Ala Thr Leu Leu Val Asn Lys
      195     200     205

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<210> 9822

<211> 76

<212> PRT

<213> B.fragilis

<400> 9822

Cys Trp Leu Ala Ala Pro Lys Trp His Ile Tyr His Asp Glu Tyr Arg
 1 5 10 15
 Pro Tyr Tyr Leu Asp Gly Ile Phe Lys Tyr Phe Val Val Cys Ser Thr
 20 25 30
 Ala Leu Leu Leu Asp Phe Arg Arg Ser Asp Glu Ser Ile Pro Ile Phe
 35 40 45
 Ser Tyr Val His Ile Lys Arg Tyr Leu Ser Asn Val Leu Gln Asp Val
 50 55 60
 Glu Ser Val Val Leu Phe Tyr Gly Asn Asn Tyr Ile
 65 70 75

<210> 9823

<211> 68

<212> PRT

<213> B.fragilis

<400> 9823

Lys Glu Gly Ala Leu Met Tyr Ala Tyr Glu Arg Leu Ser Ala His Pro
 1 5 10 15
 Thr Leu Asp Ile Asn Phe Leu Gly Ala Asn Ile Asn Asn Tyr Gly Glu
 20 25 30
 Ile Ile Ile Ser Ala Phe Lys Glu Ile Cys Ala Met Pro Cys Glu Glu
 35 40 45
 Asp Lys Asn Ser Val Asn Phe Asp Leu Ser His Ile Thr Ala Gln Asn
 50 55 60
 Ile Thr Glu Phe
 65

<210> 9824

<211> 431

<212> PRT

<213> B.fragilis

<400> 9824

Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
 1 5 10 15
 Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
 20 25 30
 Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
 35 40 45
 Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
 50 55 60
 Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
 65 70 75 80
 Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
 85 90 95
 Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
 100 105 110
 Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
 115 120 125
 Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
 130 135 140
 Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
 145 150 155 160
 Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
 165 170 175
 Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
 180 185 190

Arg	Phe	His	Gln	Ala	Asp	Thr	His	Lys	Arg	Phe	Phe	Ala	Leu	Leu	Glu
	195						200					205			
Ser	Gln	Asn	Ile	Arg	Val	Asn	Arg	Phe	Arg	Ala	Asp	Cys	Gly	Ser	Cys
	210					215					220				
Ser	Lys	Glu	Ile	Val	Ser	Glu	Ile	Glu	Lys	His	Cys	Lys	His	Phe	Tyr
225					230					235					240
Ile	Arg	Ala	Asn	Arg	Cys	Ser	Ser	Leu	Tyr	Asn	Asp	Ile	Phe	Ala	Leu
			245						250					255	
Arg	Gly	Trp	Lys	Thr	Glu	Glu	Ile	Asn	Gly	Ile	Gln	Phe	Glu	Leu	Asn
			260					265					270		
Ser	Ile	Leu	Val	Glu	Lys	Trp	Glu	Gly	Lys	Cys	Tyr	Arg	Leu	Val	Ile
	275						280					285			
Gln	Arg	Gln	Arg	Arg	Asn	Ser	Gly	Asp	Leu	Asp	Leu	Trp	Glu	Gly	Glu
	290				295					300					
Tyr	Thr	Tyr	Arg	Cys	Ile	Leu	Thr	Asn	Asp	Tyr	Lys	Ser	Ser	Thr	Arg
305					310					315					320
Asp	Ile	Val	Glu	Phe	Tyr	Asn	Leu	Arg	Gly	Gly	Lys	Glu	Arg	Ile	Phe
				325					330					335	
Asp	Asp	Met	Asn	Asn	Gly	Phe	Gly	Trp	Ser	Arg	Leu	Pro	Lys	Ser	Phe
		340						345					350		
Met	Ala	Glu	Asn	Thr	Val	Phe	Leu	Leu	Thr	Ala	Leu	Ile	His	Asn	
	355						360				365				
Phe	Tyr	Lys	Thr	Ile	Met	Ser	Arg	Leu	Asp	Thr	Lys	Ala	Phe	Gly	Leu
	370					375					380				
Lys	Lys	Thr	Ser	Arg	Ile	Lys	Ala	Phe	Val	Phe	Arg	Phe	Ile	Ser	Val
385					390					395					400
Pro	Ala	Lys	Trp	Ile	Met	Thr	Ala	Arg	Gln	Tyr	Val	Leu	Asn	Ile	Tyr
				405					410					415	
Thr	Glu	Asn	Arg	Ala	Tyr	Ala	Lys	Pro	Phe	Lys	Thr	Glu	Phe	Gly	
			420					425					430		

<210> 9825

<211> 194

<212> PRT

<213> B.fragilis

<400> 9825

Phe	Cys	His	Phe	Asn	Ala	Gly	Val	Ile	Cys	Val	Leu	Tyr	Met	Asp	Asp
1				5					10					15	
Met	Tyr	Leu	Phe	Arg	Phe	Lys	Asn	Ser	Glu	Tyr	Thr	Ser	Ala	Ala	Arg
		20					25					30			
Cys	Gly	Gly	Ala	Arg	Glu	Thr	Glu	Ala	Leu	Ile	Leu	Leu	Asn	Ser	Val
	35					40					45				
Phe	Val	Ala	Tyr	Ala	Ser	Val	Phe	Asp	Ile	Met	Ala	Lys	Ile	Ala	Ile
	50					55					60				
Glu	Gln	Phe	Glu	Phe	Thr	Lys	Tyr	Asn	Phe	Gly	Asn	Tyr	Arg	Lys	Met
65					70					75				80	
Lys	Ser	Ala	Asp	Thr	Ile	Tyr	Lys	Lys	Ser	Leu	Asn	Asn	Ile	Asp	Pro
			85						90				95		
Ser	Leu	Lys	Thr	Glu	Gly	Met	Leu	Phe	Ser	Glu	Pro	Pro	Ile	Ile	Arg
			100					105					110		
Lys	Ile	Gly	Thr	Phe	Arg	Asn	Glu	Phe	Val	His	Asn	Gly	Pro	Trp	Asp
	115					120						125			
Leu	Arg	Cys	Ser	Val	Tyr	Asn	Thr	Ala	Val	Asp	Gly	Lys	Pro	Ala	Asp
	130					135					140				
Val	Ile	Ile	Tyr	Ser	Pro	Asp	Met	Asp	Glu	Ile	Gly	Asn	Ile	Ile	Ser
145					150					155					160
Ser	Gly	Ser	Arg	Asn	Lys	Phe	Tyr	Ser	Gln	Ala	Asn	Arg	Ile	Asn	Ile
				165					170					175	

Gln Leu Pro Asn Met Ile Gln Glu Ala Thr Ile Val Leu Lys Asn Thr
 180 185 190
 Ile Glu

<210> 9826

<211> 1198

<212> PRT

<213> B.fragilis

<400> 9826

Tyr Asn Asn Phe Val Arg Arg Asn Lys Met Glu Thr Asn Arg Leu Lys
 1 5 10 15
 Arg Phe Ala Ser Glu Ala Arg Asn Ile Leu Met Ser Gly Val Lys Gln
 20 25 30
 Arg Leu Ser Ala Leu Gly Phe Gln Thr Asp Gly Ser Leu Ser Thr Lys
 35 40 45
 Leu Pro Glu Leu Met Gly Gly Gly Ser Val Phe Met Gly Glu Val Gln
 50 55 60
 Ser Glu Asp Phe Tyr His Lys Trp Met Ser Leu Tyr Gln Arg Ile Gln
 65 70 75 80
 Ser His Ser Tyr Arg Glu Val Ala Glu Glu Ala Ala Tyr Thr Trp Phe
 85 90 95
 Asn Arg Leu Met Ala Ile Arg Ile Met Val Lys Asn Glu Leu Val Pro
 100 105 110
 Ala Val Leu Glu Tyr Glu Ser Asp Glu Val Arg Ile Pro Leu Leu Val
 115 120 125
 Ser Glu Ala Arg Gln Arg Arg Phe Pro Gln Met Asn Glu Glu Ser Arg
 130 135 140
 Gln Lys Leu Glu Val Leu Leu Asn Asn Asp Ala Leu Thr Asp Glu Gln
 145 150 155 160
 Phe Ala Val Leu Ile Val Ala Tyr Cys His Ser Asn Pro Ile Ile His
 165 170 175
 Lys Cys Phe Gly Thr Ile Ser Asp Tyr Thr Glu Leu Leu Leu Pro Ser
 180 185 190
 Asn Ile Leu Ala Lys Asp Gly Phe Ile Asp Lys Leu Asn Ala Asp Glu
 195 200 205
 Tyr Ile Ser Asp Glu Asp Tyr Arg Ser Pro Glu Leu Ile Gly Trp Leu
 210 215 220
 Tyr Gln Phe Tyr Ile Ser Glu Arg Lys Asp Glu Val Phe Ala Lys Lys
 225 230 235 240
 Gly Lys Phe Glu Ala Asp Glu Ile Pro Ala Ala Thr Gln Ile Phe Thr
 245 250 255
 Pro Asn Trp Ile Val Lys Tyr Met Val Gln Asn Thr Val Gly Arg Ile
 260 265 270
 Tyr Leu Asp Asn Asn Pro Tyr Thr Asp Ile Lys Lys Glu Met Gln Tyr
 275 280 285
 Leu Val Glu Pro Ala Glu Pro Thr Pro Ala Asp Ala Ile Tyr Gln Phe
 290 295 300
 Asp Asn Ile His Asp Leu Thr Cys Ala Asp Leu Ala Cys Gly Ser Gly
 305 310 315 320
 His Ile Leu Asn Glu Cys Phe Asp Leu Leu Tyr Gln Ile Tyr Ile Glu
 325 330 335
 Glu Gly Tyr Asn Arg Arg Lys Ala Ile Glu Asp Ile Phe Gln Tyr Asn
 340 345 350
 Leu Thr Gly Ile Asp Ile Asp Thr Arg Ala Lys Gln Leu Ala Thr Phe
 355 360 365
 Ala Leu Leu Met Lys Ala Cys Gln Lys Asp Asn Ser Phe Ser Asp Ala
 370 375 380

His	Cys	Met	Pro	Arg	Val	Leu	Asp	Met	Pro	Ile	Pro	Tyr	Ala	Glu	Ala
385					390					395				400	
Val	Gly	Lys	Thr	Phe	Asp	Asn	Thr	Asp	Glu	Glu	Arg	Thr	Phe	Thr	Lys
			405					410					415		
Thr	Leu	Leu	Ser	Glu	Tyr	Ile	Met	Gly	Gly	Asn	Ala	Glu	Val	Leu	Asp
		420					425					430			
Glu	Leu	Thr	Asp	Ala	Val	Leu	Leu	Met	Asn	Asp	Ala	Gln	Thr	Leu	Gly
	435					440					445				
Ser	Ile	Met	Lys	Phe	Thr	Ile	Ser	Glu	Arg	Thr	Arg	Asn	Val	Ile	Ala
450					455					460					
Val	Arg	Thr	Ala	Glu	Tyr	Glu	Gln	Gln	Glu	Val	Leu	Pro	Glu	Asp	Ile
465				470					475					480	
Arg	Lys	Met	Leu	Pro	Tyr	Met	Gln	Ile	Ile	Leu	Thr	Leu	Thr	Gln	Asn
		485							490					495	
Tyr	Ala	Thr	Leu	Val	Met	Asn	Pro	Pro	Tyr	Met	Gly	Gly	Gly	Asn	Met
		500						505				510			
Asn	Glu	Val	Leu	Ser	Arg	Tyr	Val	Lys	Asp	Asn	Tyr	Glu	Asp	Ser	Lys
	515						520					525			
Ala	Asp	Leu	Phe	Ser	Val	Phe	Met	Glu	Leu	Ala	Ile	Asp	Arg	Leu	Lys
530					535					540					
Gln	Glu	Gly	Lys	Tyr	Gly	Met	Ile	Asn	Met	Gln	Ser	Trp	Met	Phe	Leu
545			550							555				560	
Ser	Ser	Phe	Glu	Lys	Leu	Arg	Lys	Lys	Val	Leu	Asp	Asn	Tyr	Gln	Ile
		565						570						575	
Asp	Ser	Met	Leu	His	Leu	Gly	Pro	Arg	Thr	Phe	Asp	Glu	Leu	Ser	Gly
		580						585				590			
Glu	Val	Val	Gln	Asn	Thr	Ala	Phe	Val	Ile	Ser	Arg	Asn	His	Lys	Glu
	595					600						605			
Asp	Val	Asn	Gly	Ile	Tyr	Phe	Arg	Leu	Val	Glu	Gly	Lys	Ser	Cys	Lys
610					615					620					
Glu	Lys	Glu	Gln	Met	Phe	Leu	Asn	Tyr	Ser	Glu	Gln	Gly	Ala	Lys	Ile
625				630						635				640	
Tyr	Tyr	Pro	Ala	Ile	Pro	Gln	Ser	Asn	Phe	Glu	Lys	Ile	Pro	Gly	Cys
		645							650					655	
Pro	Ile	Gly	Tyr	Trp	Val	Ser	Glu	Asn	Val	Leu	Lys	Thr	Phe	Asn	Gln
		660						665					670		
Lys	Asn	Leu	Ile	Ser	Glu	Lys	Ser	Ile	Ala	Arg	Ser	Gly	Phe	Ser	Thr
	675						680					685			
Gly	Asn	Asn	Glu	Arg	Tyr	Val	Arg	Gln	Trp	Tyr	Glu	Val	Pro	Leu	Glu
	690					695					700				
Lys	Ile	Gly	Phe	Ser	Leu	Ser	Ser	Asn	Asp	Asp	Phe	Leu	Ser	Ser	Asn
705				710						715				720	
Tyr	Lys	Tyr	Val	Pro	Phe	Thr	Lys	Gly	Gly	Thr	Phe	Arg	Arg	Trp	Tyr
		725							730					735	
Gly	Asn	Leu	Glu	Ser	Val	Val	Asp	Trp	Thr	Asn	Pro	Asn	Thr	Met	His
	740						745					750			
Arg	Pro	Arg	Thr	Thr	Tyr	Met	Asn	Leu	Tyr	Tyr	Lys	Pro	Ala	Ile	Thr
	755						760					765			
Trp	Asn	Ala	Ile	Cys	Ser	Gly	Lys	Leu	Ser	Cys	Arg	Phe	Tyr	Asp	Arg
	770					775					780				
Gly	Phe	Leu	Phe	Glu	His	Ala	Ala	Ala	Ser	Leu	Phe	Val	Asn	Asn	Asp
785				790						795				800	
Tyr	Gln	Phe	Glu	Ser	Phe	Leu	Ala	Tyr	Leu	Asn	Thr	Pro	Val	Phe	Gln
		805							810					815	
Phe	Ile	Leu	Ser	Ile	Leu	Asn	Pro	Thr	Leu	Asn	Thr	Gly	Ala	Glu	Val
		820						825				830			
Val	Ser	Ser	Ile	Pro	Ile	Ile	Ile	Pro	Ser	Ser	Gly	Ile	His	Gln	Lys
	835						840					845			
Ile	His	Gln	Asn	Ile	Ser	Ile	Ser	Lys	Gln	Asp	Trp	Asp	Ala	His	Glu

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

850	855	860
Thr Ser Trp Asp Phe Gln Thr Asn Glu Leu Ile Gln Leu Ser Ile Asp		
865	870	875
Gly Val Gly His Ile Gln Ala Thr Ile Asn Glu Lys Thr Ile Gln Asp		880
	885	890
Tyr Tyr Ser Ile Glu Leu Leu Leu Thr Glu Tyr Lys Thr Lys Trp Glu		895
	900	905
Asp Leu Phe Asn Arg Leu His Ala Asn Glu Glu Glu Leu Asn Arg Gln		910
	915	920
Phe Ile Glu Ile Tyr Gly Leu Gln Asp Glu Leu Thr Ser Asp Val Pro		925
	930	935
Leu Asn Glu Ile Thr Ile Leu Gln Gln Gly Glu Ile Ser Ile Glu Gly		940
945	950	955
Asp Lys Leu Arg Trp Asn Asp Asp Val Leu Met Lys Gln Leu Ile Ser		960
	965	970
Tyr Ala Val Gly Cys Met Met Gly Arg Tyr Ser Ile Asp Arg Pro Gly		975
	980	985
Leu Ile Leu Ala Asn Gln Gly Asp Ser Gln Lys Glu Tyr Glu Ala Leu		990
	995	1000
Val Pro Asn Ser Arg Phe Ala Ile Asp Asp Asp Gly Ile Ile Pro Leu		1005
1010	1015	1020
Met Ser Ala Asn Thr Glu Phe Thr Asp Asn Ile Thr Leu Arg Phe Lys		
1025	1030	1035
Thr Trp Leu Gly Ile Thr Phe Gly Glu Glu Ser Leu Met Asp Asn Leu		1040
	1045	1050
Asn Phe Ile Glu Arg Ser Leu Gly Lys Arg Leu Asp Asp Tyr Phe Val		1055
	1060	1065
Lys Asp Phe Trp Lys Asp His Lys Lys Met Tyr Gln Asn Arg Pro Ile		1070
1075	1080	1085
Tyr Trp Leu Phe Ser Ser Lys Lys Gly Ser Phe Gln Cys Ile Ala Tyr		
1090	1095	1100
Met His Arg Met Asn Ala Tyr Thr Ala Glu Lys Ile Arg Ala Asn Tyr		1105
1105	1110	1115
Leu Leu Pro His Ile Glu Trp Leu Phe Asn Lys Gln Asn Glu Met Gln		1120
	1125	1130
Ala Asn Ala Ala Asn Leu Ser Thr Arg Glu Arg Lys Glu Leu Asp Ser		1135
	1140	1145
Ile Gly Lys Gln Ile Glu Glu Cys Arg Glu Tyr His Asp Arg Leu His		1150
1155	1160	1165
Val Val Ala Asp Gln Gln Ile Gly Phe Asp Leu Asp Asp Gly Val Val		
1170	1175	1180
Val Asn Tyr Ala Lys Phe Gly Asp Val Leu Ala Lys Leu Lys		
1185	1190	1195

<210> 9827

<211> 490

<212> PRT

<213> B.fragilis

<400> 9827

Asn Gln Asn Tyr Met Glu Asn Lys Lys Leu Thr Ala Ala Asn Gly Arg
1 5 10 15
Pro Ile Ala Asp Asn Gln Asn Ser Gln Thr Ala Gly Pro Arg Gly Pro
20 25 30
Ile Met Leu Gln Asp Pro Trp Leu Ile Glu Lys Leu Ala His Phe Asp
35 40 45
Arg Glu Val Ile Pro Glu Arg Arg Met His Ala Lys Gly Ser Gly Ala
50 55 60
Tyr Gly Thr Phe Thr Val Thr His Asp Ile Thr Lys Tyr Thr Arg Ala

65		70		75		80									
Ala	Ile	Phe	Ser	Gln	Val	Gly	Lys	Gln	Thr	Glu	Cys	Phe	Val	Arg	Phe
			85					90						95	
Ser	Thr	Val	Ala	Gly	Glu	Arg	Gly	Ala	Ala	Asp	Ala	Glu	Arg	Asp	Ile
		100						105					110		
Arg	Gly	Phe	Ala	Met	Lys	Phe	Tyr	Thr	Glu	Glu	Gly	Asn	Trp	Asp	Leu
	115						120					125			
Val	Gly	Asn	Asn	Thr	Pro	Val	Phe	Phe	Leu	Arg	Asp	Pro	Leu	Lys	Phe
	130					135					140				
Pro	Asp	Leu	Asn	His	Ala	Val	Lys	Arg	Asp	Pro	Arg	Asn	Asn	Met	Arg
145					150					155				160	
Ser	Ala	Asn	Asn	Asn	Trp	Asp	Phe	Trp	Thr	Leu	Leu	Pro	Glu	Ala	Leu
			165						170					175	
His	Gln	Val	Thr	Ile	Thr	Met	Ser	Pro	Arg	Gly	Ile	Pro	Ala	Ser	Tyr
		180						185					190		
Arg	His	Met	His	Gly	Phe	Gly	Ser	His	Thr	Tyr	Ser	Phe	Leu	Asn	Ala
	195						200					205			
Glu	Asn	Lys	Arg	Ile	Trp	Val	Lys	Phe	His	Leu	Lys	Thr	Met	Gln	Gly
	210					215					220				
Ile	Lys	Asn	Leu	Thr	Asp	Gln	Glu	Ala	Glu	Ala	Ile	Ile	Ala	Lys	Asp
225					230					235					240
Arg	Glu	Ser	His	Gln	Arg	Asp	Leu	Tyr	Glu	Ser	Ile	Glu	Arg	Gly	Asp
			245						250					255	
Phe	Pro	Lys	Trp	Lys	Phe	Gln	Ile	Gln	Leu	Met	Thr	Glu	Glu	Glu	Ala
		260						265					270		
Asp	Asn	Tyr	Arg	Ile	Asn	Pro	Phe	Asp	Leu	Thr	Lys	Val	Trp	Pro	His
	275						280					285			
Lys	Asp	Phe	Pro	Leu	Gln	Asp	Val	Gly	Ile	Leu	Glu	Leu	Asn	Arg	Asn
	290					295					300				
Pro	Glu	Asn	Tyr	Phe	Ala	Glu	Val	Glu	Gln	Ser	Ala	Phe	Asn	Pro	Met
305					310					315					320
Asn	Ile	Val	Glu	Gly	Ile	Gly	Phe	Ser	Pro	Asp	Lys	Met	Leu	Gln	Gly
			325						330					335	
Arg	Leu	Phe	Ser	Tyr	Gly	Asp	Ala	Gln	Arg	Tyr	Arg	Leu	Gly	Val	Asn
		340						345					350		
Ser	Glu	Gln	Ile	Pro	Val	Asn	Lys	Pro	Arg	Cys	Pro	Phe	His	Ala	Phe
	355						360					365			
His	Arg	Asp	Gly	Ala	Met	Arg	Val	Asp	Gly	Asn	Tyr	Gly	Ser	Ala	Lys
	370					375					380				
Gly	Tyr	Glu	Pro	Asn	Ser	Tyr	Gly	Glu	Trp	Gln	Asp	Ser	Pro	Glu	Lys
385					390					395					400
Lys	Glu	Pro	Pro	Leu	Lys	Val	His	Gly	Asp	Val	Phe	Asn	Tyr	Asn	Glu
			405						410					415	
Arg	Glu	Tyr	Asp	Asp	Asp	Tyr	Tyr	Ser	Gln	Pro	Gly	Asp	Leu	Phe	Arg
		420						425					430		
Leu	Met	Pro	Ala	Asp	Glu	Gln	Gln	Leu	Leu	Phe	Glu	Asn	Thr	Ala	Arg
		435						440				445			
Ala	Met	Gly	Asp	Ala	Glu	Leu	Phe	Ile	Lys	Gln	Arg	His	Val	Arg	Asn
	450					455					460				
Cys	Tyr	Lys	Ala	Asp	Pro	Ala	Tyr	Gly	Thr	Gly	Val	Ala	Gln	Ala	Leu
465					470					475					480
Gly	Ile	Asp	Leu	Glu	Glu	Ala	Leu	Lys	Glu						
			485						490						

<210> 9828

<211> 1167

<212> PRT

<213> B.fragilis

<400> 9828

Asn Val Ile Tyr Met Thr Glu Asn Thr Asn Tyr Ile Phe Glu Glu Leu
 1 5 10 15
 Leu Lys Ala Val Gln Pro Asn Arg Gly Leu Phe Val Ile Pro Leu Pro
 20 25 30
 Thr Gly Ala Gly Lys Thr Tyr Asn Ser Cys Leu Met Met Ala Glu Glu
 35 40 45
 Leu Lys Lys Glu Asp Ala Arg Arg Ile Ile Tyr Val Thr Asp Ala Lys
 50 55 60
 Lys Gln Leu Asp Ala Thr Ile Glu Asp Ile Glu Lys Asn Leu Lys Lys
 65 70 75 80
 Thr Gly Leu Lys Leu Lys Met Tyr Asp Ile Leu Arg Val Tyr Ser Gln
 85 90 95
 Glu Glu Gln Trp Glu Arg Ala Phe Thr Asp Pro Asp Ile Arg Met Arg
 100 105 110
 Met Glu Ala Ser Lys Leu Phe Gln Gly Glu Arg Ala Phe Thr Asn Leu
 115 120 125
 Lys Arg Leu Tyr Ser Tyr Thr Asp Val Thr Asp Glu Val Ala Glu Glu
 130 135 140
 Ile Ser Lys Asn Arg Leu Arg Leu Met Glu Lys Val Arg Lys Glu Val
 145 150 155 160
 Phe Thr Pro Ile Arg Gln Thr Tyr Lys Lys Glu Ser Asp Glu Val Ile
 165 170 175
 Ala Ser His Ile Val Thr Glu Tyr Pro Ile Leu Glu Glu Leu Tyr Pro
 180 185 190
 Glu Leu Leu Phe Tyr Lys Ser Lys Ile Ile Val Leu Thr Ala Ser Lys
 195 200 205
 Leu His Thr Thr Ala Ser Pro Lys Leu Val Arg Lys Gly Thr Gln Pro
 210 215 220
 Tyr Trp Lys His Ile Glu Asn Ser Leu Val Ile Val Asp Glu Ser Asp
 225 230 235 240
 Arg Val Lys Glu Ala Ala Met Lys Arg Leu Phe Asp Cys Glu Cys Gly
 245 250 255
 Arg Arg Arg Arg Phe Asn Phe Trp Gly Leu Cys Tyr Phe Ile Cys Leu
 260 265 270
 His Tyr Gln Glu Val Met Asp Met Gln Lys Met Pro Glu Trp Ala Asp
 275 280 285
 His Lys Met Asn Ile Gln Asp Met Leu Lys Ala Ile Arg Thr Lys Lys
 290 295 300
 Glu Glu Leu Ile Asp Asp Ile Asp Pro Gln Lys Ile Leu Cys Gly Leu
 305 310 315 320
 Glu Leu Lys Glu Asn Val Asn Arg Gly Asn Phe Ile Phe Tyr Asp Glu
 325 330 335
 Asp Gln Thr Phe Ser Ala Glu Asn Val Val Leu Ser Val His Asn Asn
 340 345 350
 Lys Glu Glu Tyr Thr Ser Tyr Leu Leu Gln Ser Lys Lys Thr Lys Asp
 355 360 365
 Gln Asn Asp Lys Thr Leu Ser Phe Val Ala Asn Arg Ile Met Leu Phe
 370 375 380
 Leu Lys Gly Phe Val Gln Ile Val Asp Lys His Ala Glu Val Tyr Ala
 385 390 395 400
 Ser Ile Glu Asn Glu Leu Arg Lys Lys Gly Thr Asp Thr Thr Val
 405 410 415
 Asp Leu Glu Gly Glu Leu Ala Phe Tyr His Ile Ile Lys Tyr Met Gly
 420 425 430
 Val Asn Glu Gly Asn Thr Glu Tyr Arg Ser Ala Leu Gln Glu Leu Arg
 435 440 445
 Asn Arg Thr Thr Phe Gln Thr Pro Arg Ser Asn Asn Ser Glu Glu Thr
 450 455 460

Asp	Gly	Lys	Ser	Ile	Tyr	Asp	Lys	Gly	Ile	Ser	Phe	Ile	Glu	Ile	Tyr
465					470					475					480
Ser	His	Asp	Asn	Asp	Arg	Tyr	Ser	Cys	Cys	Phe	Asp	Tyr	His	Glu	Met
			485						490					495	
Arg	Cys	Met	Pro	Glu	Asn	Val	Leu	Leu	Asp	Met	Val	Asn	His	Asn	Arg
			500					505					510		
Val	Ile	Met	Cys	Ser	Ala	Thr	Ala	Asp	Cys	Gln	Thr	Pro	Ile	His	Asn
		515					520					525			
Tyr	Asp	Phe	Asn	Tyr	Ile	Ala	Lys	Gln	Gly	Val	Lys	Val	Glu	Lys	Met
	530					535					540				
Gly	Asn	Asp	Ala	Leu	His	Lys	Ile	Glu	Lys	Tyr	Ile	Ala	Leu	Asn	Tyr
545					550					555					560
Ala	Asn	Pro	Lys	Val	Glu	Phe	Ser	Leu	Tyr	Asn	Glu	Glu	Glu	Thr	Glu
			565						570					575	
Pro	Lys	Glu	Ile	Leu	Glu	Asp	Tyr	Leu	Gly	Lys	Cys	Ser	Leu	Ala	Leu
			580					585					590		
Lys	Asp	Cys	Leu	Asp	Phe	Val	Met	Asp	Gly	Lys	Asn	Lys	Phe	Asn	Lys
	595						600					605			
Asn	Asn	Ser	Ala	Arg	Ile	Val	Asn	Met	Leu	Asn	His	Tyr	Met	Asp	Phe
	610					615					620				
Met	Lys	Lys	Pro	Glu	Ala	Lys	Ala	Trp	Leu	Tyr	Phe	Gln	Pro	Phe	Ser
625					630					635					640
Tyr	Thr	Gly	Asn	Ser	Ser	Ile	Gly	Ile	Lys	Lys	Val	Leu	Asn	Ile	Leu
			645						650					655	
Gln	Gln	Ala	Arg	Val	Thr	Lys	Arg	Gly	Glu	Val	Tyr	Glu	Val	Ser	Val
			660					665					670		
Met	Asp	Pro	Tyr	Val	Ile	Asp	Asp	Gly	Thr	Thr	Ser	Arg	Arg	Ala	Asp
	675						680					685			
Ile	Tyr	Pro	Lys	Leu	Asn	Val	Cys	Phe	Leu	Ser	Gly	Glu	Tyr	Phe	Lys
	690				695						700				
Asp	Asp	Leu	Glu	Ala	Val	Glu	Lys	Leu	Leu	Ala	Glu	Gln	Pro	Glu	Leu
705					710					715					720
Lys	Met	Phe	Cys	Phe	Val	Cys	Tyr	Gln	Ser	Gly	Ala	Val	Gly	Val	Asn
			725					730					735		
Tyr	Leu	Phe	Asp	Thr	Asp	Ala	Lys	Tyr	Arg	Lys	Lys	Cys	Cys	Leu	Lys
	740						745						750		
Ala	Pro	Asn	Thr	Lys	Asp	Arg	Lys	Asp	Thr	Arg	Cys	Asn	Phe	Asp	Gly
	755						760					765			
Ile	Ile	Met	Asp	Lys	Pro	Thr	Asn	Phe	Ile	Pro	Leu	Leu	Asp	Val	Asn
	770					775					780				
Asp	Tyr	Leu	Lys	Ala	Cys	Ile	Ser	Leu	Ser	Ile	Leu	Gly	Thr	Asp	Asn
785					790					795					800
Gln	Leu	Thr	Leu	Lys	Glu	Lys	Ser	Asp	Phe	Gln	Arg	Asp	Leu	Leu	Arg
			805						810				815		
Arg	Arg	His	His	Cys	Ile	Thr	Asp	Asp	Leu	Asn	Glu	Leu	Lys	Asn	Arg
		820						825					830		
Glu	Ile	Gln	Ile	Lys	Ala	Val	Leu	Lys	Gly	Thr	Pro	Ala	Tyr	Asp	Ala
	835						840					845			
Phe	Cys	Leu	Lys	Trp	Ala	Val	Gln	Ala	Leu	Gly	Arg	Ile	Thr	Arg	Ser
	850				855						860				
Thr	Val	Phe	Asn	Lys	Ile	Ile	His	Val	Ala	Ile	Gly	Lys	Asp	Met	Ala
865				870					875						880
Tyr	Ser	Met	Ile	Ile	Ala	Arg	Lys	Pro	Glu	Val	Gln	Thr	Glu	Leu	Leu
			885						890					895	
Lys	Tyr	Val	Leu	Gln	Ser	Ile	Asp	Lys	Asp	Pro	Cys	Ile	Leu	Asp	Arg
		900						905					910		
Ile	Asn	Gly	Lys	Glu	Ser	Glu	Val	Asn	Ile	Ala	Phe	Lys	Asn	Gly	Glu
	915						920					925			
His	Arg	Arg	Glu	Arg	His	Ile	Ser	Glu	Leu	Ile	Gly	Ile	Ser	Phe	Lys

930 935 940
 Gly Thr Asp Lys Tyr Ala Arg Gln Ala Arg Asn Arg Val His Lys Ile
 945 950 955 960
 Arg Glu Tyr Val Met Lys His Pro Glu Phe Gly Asn Arg Glu Asp Ile
 965 970 975
 Glu Thr Ser Met Arg Met Tyr Tyr Val Gln Ala Glu Glu Val Lys Lys
 980 985 990
 Met Asn Leu Asn Tyr Thr Asp Ser Cys Val His Met Asp Ala Ile Met
 995 1000 1005
 Arg Gln Arg Phe Ile Arg Asn Tyr Phe Glu Lys Asn Gly Tyr Cys Thr
 1010 1015 1020
 Ala Trp Lys Gly Lys Ala Trp Val Ile Ser Pro Gln Ile Ile Gln Gln
 1025 1030 1035 1040
 Val Tyr Thr Gly Tyr Phe Gly Glu Gln Val Phe Lys Ala Ile Leu Glu
 1045 1050 1055
 Asn Ala Gly Cys Thr Ile Thr Ser Leu Lys Glu Glu Ile Trp Glu Arg
 1060 1065 1070
 Ala Asp Trp Val Val Asn Asn Gln Leu Tyr Val Asp Val Lys Tyr Met
 1075 1080 1085
 Val Asp Gly Asp Phe Asn Arg His Val Lys Ser Gln Ala Trp Glu Arg
 1090 1095 1100
 Lys Ile Lys Asp Cys Gly Gly Asp Tyr Val Ile Val Asn Val Pro Arg
 1105 1110 1115 1120
 Tyr Val Gly Asn Tyr Ser Tyr Ser His Ser Leu Pro Leu Glu Ser Gly
 1125 1130 1135
 Thr Gln Leu Pro Val Ile Asn Gly Leu Ile Asp Val Glu Thr Gly Ala
 1140 1145 1150
 Ile Ile Asp Asn Asn Val Gln Asn Ile Leu Asn Ile Leu Ala Val
 1155 1160 1165

<210> 9829

<211> 334

<212> PRT

<213> B.fragilis

<400> 9829

Met Lys His Tyr Arg Leu Phe Leu Leu Leu Ile Gly Leu Leu Val Leu
 1 5 10 15
 Ala Phe Leu Ala Asp Ile Ala Ile Gly Ser Val Ser Leu Ser Ile Arg
 20 25 30
 Asp Val Trp Asn Thr Phe Ile Gly Ser Asn Asp Asn Leu Ile Tyr Arg
 35 40 45
 Glu Ile Ile Leu Asn His Arg Leu Pro Lys Ala Leu Thr Ala Ile Leu
 50 55 60
 Ala Gly Ala Ser Leu Ser Val Ala Gly Val Leu Met Gln Thr Leu Phe
 65 70 75 80
 His Asn Pro Leu Ala Gly Pro Asp Val Leu Gly Val Thr Ser Gly Ala
 85 90 95
 Ser Leu Gly Val Ala Leu Leu Thr Leu Gly Thr Ser Ser Leu Pro Leu
 100 105 110
 Trp Leu Ile Thr Gly Trp Gly Gln Val Thr Ala Ala Ile Ile Gly Ala
 115 120 125
 Ile Gly Val Leu Leu Leu Val Ile Ile Val Ser Ile Lys Ile Pro Gln
 130 135 140
 Thr Ile Ser Leu Leu Ile Ile Gly Met Met Phe Gly Asn Phe Ala Gly
 145 150 155 160
 Ala Ile Val Ser Ile Leu Gln Ser Met Ser Asn Pro Asp Thr Leu Lys
 165 170 175
 Leu Phe Ile Thr Trp Thr Phe Gly Ser Leu Ser Ser Val Gly Trp Glu


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      260      265      270
Gly Gly Gly Ser Asn Phe Gly Gly Ile Ala Phe Pro Phe Met Arg His
      275      280      285
Asn Ile Leu Glu Gly Lys Lys Thr Arg Phe Ile Ala Ala Glu Pro Ala
      290      295      300
Ser Cys Pro Lys Leu Thr Arg Gly Lys Phe Gln Tyr Asp Phe Gly Asp
305      310      315      320
Glu Ala Gly Tyr Thr Pro Leu Leu Pro Met Phe Thr Leu Gly His Asn
      325      330      335
Phe Ala Pro Ala Asn Ile His Ala Gly Gly Leu Arg Tyr His Gly Ala
      340      345      350
Gly Val Ile Val Ser Gln Leu Leu Lys Asp Lys Leu Met Glu Ala Val
      355      360      365
Asp Ile Ser Gln Leu Glu Ser Phe Glu Ala Gly Cys Leu Phe Ala Gln
      370      375      380
Val Glu Gly Ile Ile Pro Ala Pro Glu Ser Cys His Ala Ile Ala Ala
385      390      395      400
Thr Ile Arg Glu Ala Asn Lys Cys Lys Glu Ser Gly Glu Glu Lys Val
      405      410      415
Ile Leu Phe Asn Leu Ser Gly His Gly Leu Ile Asp Met Ala Ser Tyr
      420      425      430
Asp Lys Tyr Leu Ser Gly Asp Leu Val Asn Tyr Ser Leu Thr Asp Asp
      435      440      445
Asp Ile Gln Lys Asn Leu Asp Glu Ile Gly Asn Leu Ala
      450      455      460

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<210> 9831

<211> 203

<212> PRT

<213> B.fragilis

<400> 9831

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Ile Phe Leu Tyr Leu Cys Asn Leu Cys Asn Lys Tyr Cys Phe Phe Ser
1      5      10      15
Leu Gln Gln Asp Asn Ser Met Lys Lys Asp Gly Phe Ser Glu Ile Tyr
      20      25      30
Asp Ile Tyr Phe Pro Lys Leu Leu Arg Phe Thr Arg Thr Tyr Leu Ile
      35      40      45
Ser Glu Asp Glu Ser Glu Asn Ile Val Gln Glu Ile Phe Ile Tyr Leu
      50      55      60
Trp Glu His Arg Asp Ile Ile Glu Thr Leu Gln Asn Leu Asn Ala Tyr
65      70      75      80
Leu Phe Thr Leu Ala Lys Asn Arg Cys Ile Asp Tyr Phe Arg Lys Glu
      85      90      95
Met Val Arg Glu Val Arg Lys Gly Ser Leu Ser Glu Ile Glu Asn Arg
      100      105      110
Glu Leu Gln Leu Lys Leu Tyr Ser Leu Glu Ala Phe Asp Asn Asp Arg
      115      120      125
Leu Ser Asp Ala Asp Ile Glu Glu Ile Leu Asn Asn Ala Ile Asn Arg
      130      135      140
Leu Pro Glu Arg Cys Arg Glu Ile Phe Ile Met Ser Arg Leu Gln Asn
145      150      155      160
Leu Arg Tyr Lys Glu Ile Ala Glu Lys Leu Asn Val Ser Pro Asn Thr
      165      170      175
Val Glu Asn Gln Ile Val Ile Ala Leu Arg Lys Leu Lys Glu Asp Leu
      180      185      190
Lys Asp Tyr Phe Pro Leu Phe Val Phe Ile Ile
      195      200

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<210> 9832
 <211> 278
 <212> PRT
 <213> B.fragilis

<400> 9832

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Ile Gln Leu Tyr Ile Met Gly Lys Thr Val Thr Thr Tyr Leu Ile Asp
1           5           10           15
Gly Asp Pro Lys Gly Ser Gln Tyr Val Phe Ile Ser Asn Lys Ile Cys
          20           25           30
Gln Met Phe Val Ile Pro Arg Ala Ser Leu Ser Ile Leu Asn Glu Arg
          35           40           45
Lys Asp Leu Gln Thr Pro Ala Phe Tyr Ile Leu Leu Gly Glu Asp Glu
          50           55           60
Asn Ile Lys Pro Lys Ala Tyr Ile Gly Glu Thr Glu Asn Phe Arg Glu
65           70           75           80
Arg Val Lys Ser His Asp Ser Lys Lys Ser Phe Trp Gln Lys Ala Leu
          85           90           95
Ile Phe Ile Ser Lys Asp Ala Ala Met Thr Lys Ala Asp Val Gln Tyr
          100          105          110
Leu Glu His Arg Ala Ile Ala Asp Ala Lys Lys Ala Asn Val Phe Met
          115          120          125
Leu Asp Glu Asn Lys Gln Ile Pro Lys Ser Pro Asn Leu Pro Glu Tyr
          130          135          140
Gln Lys Asp Ser Met Asp Glu Phe Tyr Asp Asp Ile Lys Phe Leu Thr
145          150          155          160
Ser Phe Ile Gly Cys Asn Ile Phe Glu Ile Ile Glu Pro Lys Asp Lys
          165          170          175
Pro Ile Phe Gln Ile Val Ser Lys Lys Cys Asp Ala Lys Gly Phe Tyr
          180          185          190
Asp Thr Ser Gly Phe Thr Val Leu Lys Gly Ser Arg Ile Ser Asp Lys
          195          200          205
Ser Thr Asp Ser Leu Ser Trp Arg Asp Lys Arg Thr Lys Leu Ile Glu
          210          215          220
Glu Tyr Ala Asn Asn Lys Asn Phe Val Ile Asn Glu Asp Ile Thr Phe
225          230          235          240
Ser Ser Pro Ser Lys Ala Ala Asp Phe Cys Leu Gly Ser Ser Ser Asn
          245          250          255
Gly Trp Ile Met Trp Lys Thr Glu Arg Gly Gln Thr Leu Asp Ser Val
          260          265          270
Tyr Arg Lys Lys Gln Leu Glu
          275

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<210> 9833
 <211> 305
 <212> PRT
 <213> B.fragilis

<400> 9833

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Val Ile Thr Tyr Ile Val Met Gly Gln Asn Ile Tyr Cys Tyr Gly Asn
1           5           10           15
Val Ile Phe Ala Asp Lys Ser Lys Lys Arg Ile Met Lys Tyr Ile Gly
          20           25           30
Ala His Val Ser Ala Ser Gly Gly Val Glu Phe Ala Pro Val Asn Ala
          35           40           45
His Glu Ile Gly Ala Asn Ala Phe Ala Leu Phe Thr Lys Asn Gln Arg
          50           55           60
Gln Trp Val Ser Lys Pro Leu Thr Glu Asp Ser Ile Arg Leu Phe Lys
65           70           75           80

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Glu Asn Cys Glu Lys Phe Gly Phe Ala Pro Glu Tyr Ile Leu Pro His
 85 90 95
 Asp Ser Tyr Leu Ile Asn Leu Gly His Pro Glu Glu Glu Gly Leu Thr
 100 105 110
 Lys Ser Arg Ala Ala Phe Leu Asp Glu Met Gln Arg Cys Glu Gln Leu
 115 120 125
 Glu Leu Lys Leu Leu Asn Phe His Pro Gly Ser His Leu Asn Lys Ile
 130 135 140
 Ser Val Glu Glu Cys Leu Asp Arg Ile Ala Glu Ser Ile Asn Leu Ala
 145 150 155 160
 Leu Glu Lys Thr Lys Gly Val Thr Ala Val Ile Glu Asn Thr Ala Gly
 165 170 175
 Gln Gly Ser Asn Leu Gly Asn Glu Phe Trp Gln Leu Lys Tyr Ile Ile
 180 185 190
 Asp Arg Val Glu Asp Lys Ser Arg Val Gly Val Cys Leu Asp Thr Cys
 195 200 205
 His Thr Phe Thr Ala Gly Tyr Asp Phe Leu Asn Asp Tyr Asp Asp Val
 210 215 220
 Phe Gly Glu Phe Gly Glu Val Val Gly Phe Glu Tyr Leu Arg Gly Met
 225 230 235 240
 His Leu Asn Asp Ser Lys Lys Glu Leu Gly Ser Arg Val Asp Arg His
 245 250 255
 Asp Ser Ile Gly Lys Gly Leu Ile Gly Phe Ala Phe Phe Glu Lys Leu
 260 265 270
 Met Lys Asp Pro Arg Phe Asp Asn Met Pro Leu Ile Leu Glu Thr Ile
 275 280 285
 Asp Glu Thr Leu Trp Pro Glu Glu Ile Ala Trp Leu Arg Glu Gln Thr
 290 295 300
 Gln
 305

<210> 9834

<211> 855

<212> PRT

<213> B.fragilis

<400> 9834

Ser Asn Glu Tyr Met Asn Thr Ser Gln Gln Lys Ile Tyr Asn Tyr Phe
 1 5 10 15
 Glu Arg Glu Pro Glu Leu Lys Val Leu Phe Ile Phe Asn Asp Val Phe
 20 25 30
 Leu Ala Asp Glu Leu Ser Val Val Glu Trp Lys Ala Gly Tyr Arg Tyr
 35 40 45
 Val Asp Phe Lys Gly Asp Trp Phe Thr Thr Lys Tyr Lys Leu Asp Thr
 50 55 60
 Glu Trp Ala Asp Glu Lys Val Ile Leu Tyr Phe His Gln Pro Ser Pro
 65 70 75 80
 Leu Gln Ile Lys Ser Leu Gln Glu Lys Phe Pro Leu Leu Asp Leu Leu
 85 90 95
 Val Ala Asn Met Glu Tyr His His Gln Asp Tyr Ala Ala Tyr Met Gln
 100 105 110
 Gln Tyr Gly Leu Pro Ser Asn Met Thr Leu Phe Val Glu Lys Asn Ile
 115 120 125
 Gln Gln Leu Gln Ser Asp Arg Met Leu Arg Leu Leu Gln Ser His Tyr
 130 135 140
 Ala Asp Gly Ser Ile Ser Ile Asp Val Ala Val Arg Ala Phe Leu Ser
 145 150 155 160
 Ser Tyr Phe Gln Gln Gln Arg Val Leu Asp Trp Asp Tyr Ile Ile Leu
 165 170 175

Arg	Ile	Leu	Leu	Gln	Gly	Cys	Ser	Ser	Glu	Arg	Ser	Arg	Gln	Thr	Asp
		180						185					190		
Phe	Tyr	Ser	Arg	Leu	Lys	Val	Ala	Pro	Met	Val	Lys	Ala	Ala	Leu	Asp
		195					200					205			
Glu	Arg	Leu	Lys	Ser	Ile	Phe	Gly	Cys	Thr	Val	Asp	Leu	Asn	Thr	Glu
		210				215					220				
Ala	Lys	Val	Glu	Lys	Leu	Ile	Gln	Val	Leu	Lys	Tyr	Asn	Ser	Ile	Val
225					230					235					240
Gln	Asn	Leu	Ala	Pro	Val	Asn	Ala	Asp	Asn	Tyr	Lys	Thr	Asn	Arg	Ile
				245					250					255	
Ala	Asp	Ser	Leu	Ala	Leu	Gln	Gln	Met	Asn	Arg	Ile	Leu	Glu	Leu	Ala
			260					265					270		
Leu	Ser	Ser	Ser	Lys	Thr	Ala	Ala	Ala	Leu	Gln	Glu	Val	Met	Ile	Glu
		275					280					285			
Leu	Gly	Ser	Asp	Ile	His	Asp	Asp	Glu	Leu	Ile	Lys	Trp	Tyr	Gly	Thr
	290					295					300				
Glu	Ala	Asp	Tyr	Tyr	Phe	Leu	Pro	Asp	Gln	Leu	Cys	Ile	Pro	Ile	Leu
305					310					315					320
Arg	Thr	Leu	Met	Glu	His	Ser	Ile	Ala	Thr	Glu	Pro	Gln	Lys	Val	Ile
				325					330					335	
Asn	Arg	Leu	Glu	Glu	Leu	Ile	Ile	Lys	His	Ser	Gly	Asn	Glu	Asp	Leu
		340						345					350		
Asn	Ile	Val	Met	Asp	Tyr	Asn	Leu	Val	Ala	Arg	Phe	Tyr	Glu	Gly	
		355					360					365			
Ala	Leu	Ser	Leu	Gly	Ser	Leu	Thr	Leu	Asn	Thr	Pro	Asp	Glu	Tyr	Leu
		370					375					380			
Glu	Cys	Tyr	Arg	Asn	Val	Tyr	Tyr	Leu	Thr	Asp	Gln	Leu	Tyr	Arg	Leu
385					390					395					400
Ser	Ile	Glu	Asn	Tyr	Tyr	Lys	Ile	Ser	Pro	Ser	Ile	Val	Leu	Tyr	Glu
				405					410					415	
Thr	Ile	Gln	Lys	Val	Lys	Tyr	Ala	Leu	Asp	Ile	Tyr	Tyr	Ala	Lys	Leu
			420					425					430		
Cys	Asn	Arg	Ile	Asn	Leu	Glu	Trp	Ile	His	Cys	Val	Lys	Glu	Ser	Gly
		435					440					445			
Gly	Leu	Ser	Ser	Val	His	Ala	Leu	Arg	Gln	Glu	Asn	Phe	Tyr	Glu	Asn
	450					455					460				
Gln	Ile	Lys	Pro	Ile	Gln	Lys	Lys	Val	Val	Val	Ile	Ile	Ser	Asp	Ala
465					470					475					480
Leu	Arg	Tyr	Glu	Val	Ala	Gln	Glu	Leu	Ile	Gly	Ala	Leu	Ala	Arg	Arg
				485					490					495	
Lys	His	Ile	Ala	His	Leu	Asn	Thr	Ala	Ile	Ala	Met	Leu	Pro	Thr	Glu
			500					505					510		
Thr	Lys	Phe	Cys	Lys	Pro	Ala	Leu	Leu	Pro	His	Arg	Glu	Leu	Arg	Leu
		515					520					525			
Tyr	Ser	Glu	Val	Asp	Gly	Glu	Gln	Asn	Met	Gly	Val	Asp	Asn	Arg	Ile
	530					535					540				
Leu	Asn	Ser	Thr	Val	Lys	Arg	Thr	Glu	Gln	Val	Asn	Ala	Tyr	Arg	Thr
545					550					555					560
Gly	Ala	Ile	Cys	Ile	Asp	Tyr	Asp	Glu	Val	Ala	Lys	Tyr	Asp	Gln	Val
				565					570					575	
Lys	Asn	Arg	Glu	Ile	Phe	Lys	His	Pro	Leu	Val	Tyr	Val	Met	His	Asp
		580						585					590		
Thr	Ile	Asp	Asp	Lys	Ser	His	Gly	Ala	Thr	Ala	Lys	Glu	Val	Val	Asn
		595					600					605			
Ser	Cys	Arg	Asp	Ala	Ile	Asn	Glu	Leu	Glu	Met	Leu	Val	His	Lys	Ile
		610				615					620				
His	Glu	Thr	Tyr	Asn	Val	Thr	Glu	Val	Tyr	Ile	Thr	Ala	Asp	His	Gly
625					630					635					640
Phe	Leu	Phe	Asn	Asp	Gln	Gln	Phe	Glu	Glu	Lys	Asp	Lys	His	Lys	Val

Thr Gly Val Asn Gly Asn Gly Lys Thr Thr Leu Leu Arg Asp Ile Ile
 50 55 60
 Ala Asp Thr Asn Ala Thr Lys Lys Pro Lys Cys Ala Ile Thr Ile Gln
 65 70 75 80
 Asp Asp Lys Gly Leu Asn Thr Phe Leu Leu Pro Leu Gln Ser Glu Asn
 85 90 95
 Glu Arg Tyr Glu Glu Ala Phe Ser Lys Val Ser Phe Tyr Gln Thr Arg
 100 105 110
 Asp Asn Ser Ser Val Glu Lys Leu Gln Lys Asp Ile Val Ser Tyr Val
 115 120 125
 Asp Lys Val Val Tyr Glu Ile Gly Lys Thr Ser Phe Asp Ala Tyr Val
 130 135 140
 Glu Ile Gln Arg Met Leu Asp Asp Ile Phe Cys Gly Phe Asn Leu Gln
 145 150 155 160
 Ile Arg Phe Lys Ser Leu Asn Arg Glu Lys Lys Leu Ile Phe Thr Asn
 165 170 175
 Thr Arg Gln Glu Glu Phe Gly Ile Asp Gly Leu Ser Ser Gly Glu Leu
 180 185 190
 Gln Ile Leu Ser Lys Val Phe Val Leu Phe Thr Asp Asp Met Lys Gly
 195 200 205
 His Val Ile Leu Ile Asp Glu Pro Glu Ser Ser Leu His Pro Ser Trp
 210 215 220
 Gln Thr Arg Ile Leu Pro Val Leu Arg His Cys Ser Glu Thr Asn Asp
 225 230 235 240
 Cys Gln Ile Ile Val Ala Thr Gln Ser Pro Leu Val Ile Asp Ser Ala
 245 250 255
 Tyr Lys Asp Glu Ile Arg Phe Leu Thr Arg Asp Asn Glu Gly Tyr Val
 260 265 270
 Lys Ala Glu Ile Ala Ser Val Thr Leu Ser Ala Glu Gln
 275 280 285

<210> 9837

<211> 194

<212> PRT

<213> B.fragilis

<400> 9837

Asn Met Asn Leu Asn Asp Asn Tyr Ile Phe Thr Leu Ser Phe Pro Glu
 1 5 10 15
 Ala Lys Ser Ile Val Ala Ser Gly Asp Ile His Gly Asp Phe Ile Gln
 20 25 30
 Leu Val Phe Lys Leu Cys Val Gln Tyr Gln Met Lys Asp Thr Ile Leu
 35 40 45
 Ile Val Ala Gly Asp Cys Gly Phe Gly Phe Glu Lys Lys Glu Ser Tyr
 50 55 60
 Glu Asn Met Val Lys Gln Asn Val Lys Arg Met Asn Glu Ala Asn Asn
 65 70 75 80
 Trp Ile Val Phe Ile Arg Gly Asn His Asp Asn Pro Ala Tyr Phe Asp
 85 90 95
 Gly Tyr Thr Phe Lys Tyr Lys Arg Phe Ile Ala Ile Pro Asp Tyr Thr
 100 105 110
 Ile Leu Gln Ala Arg Ser His Thr Val Leu Cys Val Gly Gly Gly Ile
 115 120 125
 Ser Ile Asp Arg Gln Tyr Arg Leu Gln Ala Trp Glu Lys Lys Gln Val
 130 135 140
 Arg Ser Val Ser Glu Ser Ser Thr Asp Lys Leu Ala Arg Asn Val Tyr
 145 150 155 160
 Arg Ser Thr Glu Ala Pro Val Phe Asp Lys Glu Lys Met Val Thr Ile
 165 170 175

Ser Ala Lys Tyr Thr Val Asp Ala Ala Ile Thr His Thr Ala Pro Ser
 180 185 190
 Phe Cys

<210> 9838
 <211> 161
 <212> PRT
 <213> B.fragilis

<400> 9838
 Ile Cys Arg Gln Gly Asn Met Val Cys Ile Arg Arg Gly Ile Tyr Ala
 1 5 10 15
 Thr Leu Glu Gln Leu Ala Asn Thr Met Ile Asp Leu Glu Val Ala Val
 20 25 30
 Pro Asp Gly Ile Leu Cys Leu Phe Ser Ala Trp Asn Ile His Gly Leu
 35 40 45
 Thr Thr Ser Leu Pro Gln Ala Tyr His Val Ala Ile Lys Arg Gly Lys
 50 55 60
 Lys Ile Arg Leu Pro Glu Tyr Pro Pro Ile Ala Leu His Phe Leu Ala
 65 70 75 80
 Glu Ser Ile Leu Glu Leu Gly Ala Glu Glu Lys Val Val Ser Asn Tyr
 85 90 95
 Glu Ile Lys Val Tyr Asn Val Glu Leu Ser Val Cys Asp Ala Ile Lys
 100 105 110
 Phe Arg Asn Lys Ile Gly Ile Asp Val Cys Ser Lys Val Val Asn Asn
 115 120 125
 Tyr Leu Ala Leu Pro Asn Arg Asp Leu Thr Leu Leu Met Asp Asn Ala
 130 135 140
 Asn Lys Leu Arg Ile Ala Lys Thr Leu Glu Lys Tyr Leu Glu Ile Lys
 145 150 155 160
 Leu

<210> 9839
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 9839
 Thr Glu Thr Gln Asp Lys His Leu Ser Thr Tyr Glu Asp Cys Thr Gly
 1 5 10 15
 Cys Arg Phe Leu Ile Val Asp Val Tyr Ser Lys Phe Ile Gly Phe Tyr
 20 25 30
 Trp Trp Val Trp Phe Ala Cys Ile Thr Gly Lys Asp Arg Ile Asn Asp
 35 40 45
 Thr Gln Leu Ile Tyr Tyr Gly Leu Arg Leu Val Val Arg Leu Phe Ala
 50 55 60
 Leu
 65

<210> 9840
 <211> 82
 <212> PRT
 <213> B.fragilis

<400> 9840
 Glu Gly Lys His Tyr Ile Cys Thr Tyr Ile Ser Arg Met Tyr Asn Met
 1 5 10 15

Glu Lys Lys Asp Met Asn Arg Leu Lys Val Val Leu Ala Glu Lys Lys
 20 25 30
 Arg Thr Asn Lys Trp Leu Ala Glu Leu Arg Lys Asp Pro Ala Thr
 35 40 45
 Val Ser Lys Trp Cys Thr Asn Ser Ala Gln Pro Asn Leu Glu Asn Leu
 50 55 60
 Ile Glu Ile Ala Lys Cys Leu Glu Val Ser Val Asn Glu Leu Ile Arg
 65 70 75 80
 Asn Glu

<210> 9841
 <211> 83
 <212> PRT
 <213> B.fragilis

<400> 9841
 Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 9842
 <211> 124
 <212> PRT
 <213> B.fragilis

<400> 9842
 Leu Leu Ile Asn Met Thr Ala Lys Lys Thr Asp Tyr Ile Ile Ile Tyr
 1 5 10 15
 Thr Phe Leu Cys Ala Ser Ile Leu Ser Ile Ala Val Leu Val Arg Met
 20 25 30
 Phe Ala Val Ala Glu Leu Lys Met Asp Glu Phe Ser Ala Phe Met Ala
 35 40 45
 Phe Phe Val Thr Cys Leu Leu Leu Gly Gly Ile Tyr Phe Ser Phe Gln
 50 55 60
 Ser Ile Leu Asn Asp Cys Leu Leu Pro Ile Met Glu Arg Ile Phe Ser
 65 70 75 80
 Lys Lys His Leu His Ile Glu Pro Glu Leu Lys Val Thr Leu Ile Ala
 85 90 95
 Glu Thr Leu Gln Glu Lys Pro Ser Ile Pro Lys Tyr Gly Glu Tyr Lys
 100 105 110
 Gln Thr Ala Gln Asp Lys Leu Ala Gln Lys Gln Ala
 115 120

<210> 9843
 <211> 70
 <212> PRT
 <213> B.fragilis

<400> 9843

Asn Leu Asn Lys Thr Phe Leu Leu Ser Ile His Tyr Ser Pro Lys Asp
 1 5 10 15
 Val Phe Leu Asn Val Arg Leu Lys Thr His Gln Lys Arg Val Ile Tyr
 20 25 30
 Tyr Glu Lys Gly Tyr Ile Lys Met Lys Arg Glu Asn Ile Asn Pro Asn
 35 40 45
 Asn Tyr His Leu Phe Glu Asn Glu Val Ile Ser Ile Lys Ile Glu Val
 50 55 60
 Lys Asn Lys Ser Phe Tyr
 65 70

<210> 9844

<211> 849

<212> PRT

<213> B.fragilis

<400> 9844

His Lys Tyr Asn Met Lys His Leu Thr Val Tyr Phe Leu Leu Ala Leu
 1 5 10 15
 Gln Gly Val Leu Phe Ser Phe Ser Leu Ser Ala Ala Thr Pro Gln Asn
 20 25 30
 Ala Ile Ala Tyr His Asp Gly Asn Val Arg Phe Ser Val Leu Thr Asp
 35 40 45
 Gly Val Ile Arg Met Glu Trp Ser Pro Ser Gly Ser Phe Thr Asp Asp
 50 55 60
 Pro Ser Phe Val Ala Ile His Arg Asn Leu Pro Ile Pro Lys Tyr Thr
 65 70 75 80
 Val Gln Asn Lys Asn Ala Thr Val Val Ile Ser Thr Ala Arg Met Lys
 85 90 95
 Leu Lys Tyr Lys Lys Gly Gln Gly Pro Phe Thr Lys Asp Asn Leu Thr
 100 105 110
 Ile Thr Ser Ala Lys Gly Met Phe Pro Phe Gln Trp Thr Pro Gly Thr
 115 120 125
 Ile Gln Lys Gly Asn Leu Lys Gly Thr Asp Arg Thr Leu Asp Gly Phe
 130 135 140
 Glu Gly Asp His Asn Ile Tyr Ser His Gln Asp Met Lys Leu Glu Asp
 145 150 155 160
 Gly Leu Leu Ser Thr Asp Gly Trp Thr Leu Ile Asp Asp Ser Lys Asn
 165 170 175
 Phe Leu Phe Asp Asn Ser Glu Trp Ala Trp Val Lys Ala Arg Glu His
 180 185 190
 Lys Asp Gly Gln Asp Trp Tyr Phe Met Ala Tyr Gly His Asp Tyr Lys
 195 200 205
 Ala Ala Leu Lys Asp Phe Thr Val Phe Ala Gly Lys Val Pro Leu Pro
 210 215 220
 Pro Arg Tyr Ala Phe Gly Tyr Trp Trp Ser Arg Tyr Trp Ser Tyr Ser
 225 230 235 240
 Asp Lys Glu Met Arg Gln Leu Val Asp Asn Phe His Thr Tyr Asn Ile
 245 250 255
 Pro Leu Asp Val Leu Val Val Asp Met Asp Trp His Tyr Thr Asp Pro
 260 265 270
 Gly Phe Gly Gly Trp Thr Gly Trp Thr Trp Asn Arg Arg Leu Phe Pro
 275 280 285
 Asn Pro Ala Lys Phe Leu Gly Tyr Leu Lys Ser Asn Asp Leu Lys Ile
 290 295 300
 Thr Leu Asn Leu His Pro Ala Asp Gly Val Ala Pro Tyr Glu Glu Lys
 305 310 315 320
 Tyr Pro Glu Met Ala Gln Trp Met Gly Val Asp Thr Ala Lys Gln Glu
 325 330 335

Arg Ile Pro Trp Val Val Ser Asp Lys Arg Phe Ile Asn Gly Met Phe
 340 345 350
 Asn Lys Val Leu Arg Pro Met Glu Lys Gln Gly Val Asp Phe Trp Trp
 355 360 365
 Leu Asp Trp Gln Gln Trp Met Tyr Asp Lys Lys Val Asp Ser Leu Ser
 370 375 380
 Asn Thr Trp Trp Ile Asn Tyr Val Phe Phe Ser Asp Met Glu Arg Asn
 385 390 395 400
 Arg Asp Thr Arg Pro Met Leu Tyr His Arg Trp Gly Gly Leu Gly Asn
 405 410 415
 His Arg Tyr Gln Ile Gly Phe Ser Gly Asp Ala Val Ile Ser Trp Lys
 420 425 430
 Ser Leu Glu Phe Gln Pro Tyr Phe Thr Asn Cys Ala Ser Asn Val Leu
 435 440 445
 Tyr Gly Tyr Trp Ser His Asp Ile Gly Gly His Met Phe Lys Gly Gly
 450 455 460
 Asp Lys Glu Ile Leu Asp Pro Glu Leu Phe Thr Arg Trp Met Gln Tyr
 465 470 475 480
 Gly Ala Leu Thr Pro Val Met Arg Thr His Ser Thr Lys Asn Ser Val
 485 490 495
 Leu Asn Lys Glu Leu Trp Asn Phe Lys Gly Asp Tyr Phe Glu Ala Leu
 500 505 510
 Arg Asn Ser Ile Leu Phe Arg Tyr Gln Leu Ala Pro Tyr Ile Tyr Thr
 515 520 525
 Met Ala Arg Glu Thr Tyr Asp Asn Gly Ile Ser Ile Cys Arg Pro Met
 530 535 540
 Tyr Tyr Asp Tyr Pro Glu Ala Lys Glu Ala Tyr Asp Phe Lys Ser Glu
 545 550 555 560
 Tyr Met Phe Gly Asp Gln Ile Leu Val Ala Pro Ile Thr Thr Pro Met
 565 570 575
 Gln Asn Gly Leu Ser Thr Val Lys Val Trp Leu Pro Glu Gly Asn Asp
 580 585 590
 Trp Phe Glu Trp Thr Thr Gly Thr Leu Leu Lys Gly Gly Gln Ile Ile
 595 600 605
 Glu Arg Ser Phe Thr Leu Thr Glu Tyr Pro Val Tyr Val Lys Ala Gly
 610 615 620
 Ser Val Leu Pro Leu Tyr Asn Arg Val Lys Asn Leu Asn Ser Asn Ser
 625 630 635 640
 Glu Glu Ile Ile Val Asn Ile Phe Pro Gly Glu Asn Gly Ser Phe Thr
 645 650 655
 Phe Tyr Glu Asp Asn Gly Asn Asp Lys Tyr Tyr Ala Asn Glu Tyr Ala
 660 665 670
 Arg Thr Arg Met Tyr Thr Glu Arg Lys Glu Asn His Leu Thr Val Thr
 675 680 685
 Val Gly Pro Arg Gln Gly Lys Tyr Arg Asn Met Pro Thr Asp Arg Gln
 690 695 700
 Phe Lys Ile Lys Val Leu Gly Ser Ala Ile Pro Glu Thr Ile Thr Ile
 705 710 715 720
 Asn Gly Asn Arg Ala Glu Tyr Glu Tyr Ile Gly Asp Glu Leu Ala Leu
 725 730 735
 Leu Ile Thr Ile Pro Gln Thr Ala Cys Asp Gln Glu Lys Thr Ile Glu
 740 745 750
 Ile Gln Tyr Ser Thr Ser Ile Pro Glu Leu Asn Asp Gly Ile Val Ser
 755 760 765
 Gln Phe Lys Arg Phe Ser Lys Ala Ile Thr Ala Leu Lys Tyr Arg Asp
 770 775 780
 Ala Gly Ile Val Leu Thr Pro Ala Met Gly Ala Thr Glu Ala Thr Ser
 785 790 795 800
 Ile Ala Leu Thr Tyr Ser Pro Glu Arg Phe Asn Glu Leu Ile Glu Thr

				805						810				815	
Phe	Lys	Arg	Asn	Tyr	Ser	Gln	Met	Pro	Glu	Met	Leu	Lys	Glu	Gln	Lys
			820					825					830		
Leu	Asn	Glu	Ala	Asn	Ser	Gln	Trp	Phe	Met	Lys	Ala	Ile	Gly	Trp	Lys
		835					840					845			
Lys															

<210> 9845
 <211> 962
 <212> PRT
 <213> B.fragilis

<400> 9845

Lys	Asn	Asn	Lys	Val	Leu	Thr	Leu	Leu	His	Cys	Lys	Ser	Met	Lys	Lys
1				5					10					15	
Asn	Leu	Leu	Leu	Leu	Ser	Tyr	Ala	Ile	Lys	Gln	Arg	Glu	Ile	Ile	Gln
		20						25					30		
Ile	Leu	Arg	Ile	Met	Lys	Cys	Thr	Val	Leu	Leu	Leu	Phe	Leu	Leu	Ile
		35					40					45			
Leu	Gln	Ala	His	Ala	Ser	Val	Ser	Ser	Gln	Asn	Ala	Arg	Val	Asn	Met
	50					55					60				
Ser	Arg	Asn	Gln	Leu	Pro	Leu	Lys	Glu	Phe	Met	Ala	Glu	Ile	Glu	Lys
65					70					75					80
Gln	Thr	Asp	Tyr	Leu	Phe	Ile	Tyr	Ser	Asp	Ala	Glu	Ile	Asn	Ala	Ser
				85					90					95	
Arg	Gln	Val	Thr	Val	Lys	Lys	Gly	Thr	His	Arg	Val	Ala	Asp	Leu	Leu
			100					105					110		
Arg	Glu	Val	Leu	Ser	Lys	Asn	Asn	Ile	Ser	Tyr	Asn	Phe	Ala	Asp	Asn
		115					120					125			
Tyr	Ile	Ser	Leu	His	Val	Arg	Lys	Glu	Ala	Asp	Val	Gln	Ser	Leu	Ala
		130				135					140				
Val	Ser	Pro	Gln	Gln	Lys	Lys	Asn	Thr	Val	Leu	Val	Ser	Gly	Thr	Ile
145					150					155					160
Val	Asp	Thr	Ala	Gly	Glu	Pro	Ile	Ile	Gly	Ala	Asn	Ile	Lys	Leu	Lys
			165						170					175	
Gly	Ala	Gln	Gly	Thr	Gly	Thr	Ile	Thr	Asp	Val	Glu	Gly	Asn	Phe	Lys
		180						185					190		
Leu	Glu	Val	Pro	Thr	Asn	Gly	Val	Leu	Ile	Val	Ser	Phe	Ile	Gly	Tyr
		195				200					205				
Gln	Gln	Gln	Glu	Val	Ala	Val	Asn	Gly	Lys	Thr	Met	Leu	Lys	Ile	Lys
	210					215					220				
Met	Ala	Glu	Asp	Ala	Glu	Met	Ile	Asp	Glu	Val	Val	Val	Thr	Ala	Leu
225					230					235					240
Gly	Ile	Lys	Arg	Glu	Glu	Lys	Ala	Leu	Gly	Tyr	Ala	Val	Gln	Lys	Val
			245						250				255		
Gly	Gly	Ser	Lys	Leu	Ser	Thr	Val	Lys	Pro	Val	Asn	Ile	Ala	Thr	Ser
		260						265				270			
Leu	Thr	Gly	Lys	Val	Ala	Gly	Leu	Asn	Val	Thr	Asn	Ser	Thr	Glu	Phe
		275					280					285			
Asn	Thr	Ala	Pro	Thr	Leu	Lys	Leu	Arg	Gly	Glu	Thr	Pro	Leu	Leu	Val
	290					295					300				
Val	Asp	Gly	Val	Pro	Tyr	Ser	Asn	Ile	Ser	Leu	Asn	Asp	Ile	Ala	Ala
305					310					315					320
Asp	Asp	Ile	Glu	Ser	Val	Asp	Val	Leu	Lys	Gly	Ala	Thr	Ala	Ser	Ala
			325						330				335		
Leu	Tyr	Gly	Ala	Arg	Gly	Gly	Ser	Gly	Ala	Ile	Met	Val	Thr	Thr	Lys
		340						345					350		
Lys	Gly	Ser	Gln	Glu	Gly	Leu	Asn	Ile	Ser	Val	Asn	Ser	Ser	Thr	Met

355	360	365
Phe Asn Ala Gly Tyr Leu	Val Leu Pro Glu Val	Gln His Gly Tyr Ser
370	375	380
Thr Gly Gln Gly Gly Lys	Tyr Thr Ala Ala Asp	Phe Val Trp Gly Asp
385	390	395
Lys Leu Asp Ile Gly Arg	Thr Ala Val Gln Tyr	Asp Pro Tyr Thr Tyr
405	410	415
Glu Trp Lys Glu Met Pro	Leu Val Ser Lys Gly	Lys Asp Asn Phe Lys
420	425	430
Asn Phe Leu Glu Thr Gly	Phe Ile Thr Asn Asn	Asn Ile Ser Ile Ser
435	440	445
Gln Thr Gly Lys Tyr Gly	Ser Phe Arg Ser Ser	Leu Ser His Val Tyr
450	455	460
Asn Lys Gly Gln Tyr Pro	Asn Gln Arg Leu Asn	Lys Ile Thr Tyr Ser
465	470	475
Val Gly Gly Asp Met Lys	Phe Gly Lys Leu Ser	Phe Glu Gly Gly Ala
485	490	495
Ile Tyr Asn Lys Arg Phe	Tyr Pro Asn Gly Glu	Gly Ala Gly Tyr Gly
500	505	510
Gly Gly Gly Tyr Ile Tyr	Asn Leu Leu Val Trp	Thr Gly Thr Asp Tyr
515	520	525
Asp Val Arg Asp Tyr Lys	Asn Tyr Trp Arg Lys	Lys Asp Glu Glu Gln
530	535	540
Asn Trp Met Asn Asp Val	Trp Tyr Asp Asn Pro	Tyr Tyr Leu Ala His
545	550	555
Glu Met Thr Ser Ser Asn	Asp Tyr Asp Lys Val	Asn Thr Tyr Leu Ser
565	570	575
Gly Lys Tyr Asp Ile Met	Pro Trp Leu Asn Phe	Ser Met Arg Ala Gly
580	585	590
Ala Asp Ala Tyr Ala Ser	Arg Thr Glu Lys Lys	Asn Ala Met Ser Ala
595	600	605
Arg Gly Gly Trp Asp Lys	Asn Gly Tyr Phe Tyr	Thr Ser Lys Ser Thr
610	615	620
Gly Phe Ser Phe Asn Gly	Asp Ala Leu Leu Ser	Ala Asn His Ser Phe
625	630	635
Phe Asp Phe Ala Ile Asp	Gly Phe Val Gly Gly	Thr Arg Tyr Tyr Tyr
645	650	655
Tyr Asp Asp Ala Ile Ser	Ser Ser Asn Thr Arg	Asn Gly Leu Ser Ile Pro
660	665	670
Gly Tyr Tyr Ser Leu Lys	Ala Ser Val Asp Pro	Ile Ala Ser Ser Ser
675	680	685
Ser Tyr Lys Gln Lys Gln	Val Asn Ser Ile Tyr	Gly Lys Phe Ser Ala
690	695	700
Ser Trp Lys Ser Thr Val	Phe Val Asp Val Thr	Ala Arg Asn Asp Trp
705	710	715
Ser Ser Thr Leu Pro Ser	Glu Thr Arg Ser Tyr	Phe Tyr Pro Ala Val
725	730	735
Ser Gly Ser Ile Ile Met	Ser Gln Leu Leu Lys	Met Pro Glu Trp Leu
740	745	750
Asn Phe Trp Lys Leu Lys	Gly Ala Trp Thr Val	Thr Asn Ser Asp Leu
755	760	765
Gly Ile Tyr Asp Thr Asn	Gln Ala Tyr Ser Val	Ser Thr Asn Val Trp
770	775	780
Asp Gly Met Asn Thr Ala	Val Tyr Pro Glu Met	Ile Arg Ser Thr Thr
785	790	795
Leu Glu Pro Thr Ala Ala	Arg Ser Tyr Glu Ile	Gly Thr Ala Phe Asn
805	810	815
Val Trp Asp Asn Arg Leu	Arg Phe Asp Ile Ser	Tyr Tyr Asn Lys Leu
820	825	830

Lys Tyr Asn Leu Thr Arg Glu Ala Thr Ile Ser Gly Ser Ser Gly Phe
 835 840 845
 Thr Lys Thr Leu Val Asn Tyr Asp Glu Glu Gln Val Arg Arg Gly Val
 850 855 860
 Glu Val Ser Leu Thr Ala Ser Leu Ile Gln Thr Lys Asp Trp Asn Trp
 865 870 875 880
 Glu Val Asn Ala Asn Trp Ala Arg Asp Arg Tyr Phe Tyr Ala Lys Val
 885 890 895
 Asp Pro Val Tyr Ser Thr Gln Lys Pro Trp Val Ala Ala Gly Lys Arg
 900 905 910
 Trp Asp Trp Tyr Gly Ile Tyr Asp Trp Glu Arg Asp Pro Gln Gly Asn
 915 920 925
 Ile Ile His Glu Asn Gly Tyr Pro Val Gln Ser Lys Tyr Gln Ser Val
 930 935 940
 Met Gly Asn Glu Tyr Pro Asp Trp Ile Trp Gly Leu Ser Thr Thr Leu
 945 950 955 960
 Arg Tyr

<210> 9846

<211> 325

<212> PRT

<213> B.fragilis

<400> 9846

Asn Ile Leu Lys Met Ser Glu Leu Ile Asp Lys Tyr Phe Ala Gly Glu
 1 5 10 15
 Met Thr Cys Glu Glu Lys Lys Asp Leu Phe Asp Arg Ile Glu Ser Asp
 20 25 30
 Glu Ala Leu Lys Lys Glu Phe Leu Arg Met Gln Asn Val Val Ala Leu
 35 40 45
 Thr Gln Ile Leu Ser Arg Gln Asp Asp Ser Glu Thr Ser Arg Lys Gly
 50 55 60
 Lys Gln His Phe Met Gln Leu Leu Phe Arg Lys Arg Leu Lys Arg Ala
 65 70 75 80
 Ile Thr Val Ser Leu Lys Tyr Ala Ala Val Phe Ala Val Leu Val Val
 85 90 95
 Gly Thr Phe Tyr Thr Ala Lys Leu Tyr Leu Ser Glu Glu Phe Gly Lys
 100 105 110
 Ser Tyr Thr Ile Val Thr Ala Pro Lys Gly Gln Arg Val Lys Ile Glu
 115 120 125
 Leu Pro Asp Gly Thr Ile Ala Trp Leu Ser Pro Cys Ser Arg Leu Arg
 130 135 140
 Phe Ala Ala Ser Phe Asn Glu Thr Asp Arg Lys Ile Glu Leu Asp Gly
 145 150 155 160
 Ala Thr Tyr Phe Asp Val Ala Lys Asn Pro Glu Lys Pro Phe Val Val
 165 170 175
 Ser Ala Lys Gly Tyr Arg Ile Arg Val Leu Gly Thr Lys Phe Asn Ile
 180 185 190
 Ser Ala Tyr Lys Asn Ser Lys Glu Phe Glu Thr Asp Leu Val Glu Gly
 195 200 205
 Cys Val His Ile Tyr Asp Pro Ala Asp Ile Arg Asn Glu Val Phe Leu
 210 215 220
 Gln Pro Lys Glu Lys Ala Val Leu Trp Gly Asp Arg Leu Met Lys Arg
 225 230 235 240
 Glu Ser Asp Phe Asp Asn Glu Glu Tyr Leu Lys Asn Gly Val Val Ser
 245 250 255
 Phe Leu Ser Glu Pro Phe Gly Arg Val Leu Asn Ser Val Ala Leu Trp
 260 265 270

Asn Asp Val Asn Ile Lys Ile Glu Arg Ser Val Asn Ala Thr Gln Arg
 275 280 285
 Ile Ser Gly Lys Phe Arg Gln Ser Asp Ser Leu Glu Ser Ile Leu Lys
 290 295 300
 Ala Leu Gln Gly Ala Met Pro Phe Lys Tyr Lys Ile Val Ser Glu Glu
 305 310 315 320
 Glu Ile Ile Ile Tyr
 325

<210> 9847

<211> 320

<212> PRT

<213> B.fragilis

<400> 9847

Ile Pro Leu Lys Leu Leu Phe Ile Pro Leu Trp Ile Val Leu Gln Arg
 1 5 10 15
 Thr Gln Ser Tyr Met Gln Lys Arg Leu Ile His Leu Ser Ile Ile Phe
 20 25 30
 Phe Leu Leu Cys Pro Ala Leu Val Val Ala Gln Asn Ser Pro Leu Glu
 35 40 45
 Thr Gln Leu Lys Lys Ala Ile Glu Gly Lys Lys Ala Glu Ile Gly Ile
 50 55 60
 Ala Val Ile Ile Asp Gly Gln Asp Thr Ile Thr Val Asn Asn Asp Ile
 65 70 75 80
 His Tyr Pro Met Met Ser Val Phe Lys Phe His Gln Ala Leu Ala Leu
 85 90 95
 Ala Asp Tyr Met His His Gln Lys Gln Pro Leu Glu Thr Arg Leu Leu
 100 105 110
 Ile Lys Lys Ser Asp Leu Lys Pro Asp Thr Tyr Ser Pro Leu Arg Glu
 115 120 125
 Thr Tyr Pro Gln Gly Gly Ile Glu Met Ser Ile Ala Asp Leu Leu Lys
 130 135 140
 Tyr Thr Leu Gln Gln Ser Asp Asn Asn Ala Cys Asp Ile Leu Phe Asn
 145 150 155 160
 Tyr Gln Gly Gly Pro Asp Ala Val Asn Lys Tyr Leu His Ser Leu Gly
 165 170 175
 Ile Arg Glu Cys Ala Val Ile His Thr Glu Asn Asp Met His Glu Asn
 180 185 190
 Leu Glu Phe Cys Tyr Gln Asn Trp Thr Thr Pro Leu Ala Ala Lys
 195 200 205
 Leu Leu Glu Ile Phe Arg Asn Glu Asn Leu Phe Asp Lys Glu Tyr Lys
 210 215 220
 Asn Phe Ile Tyr Gln Thr Met Val Glu Cys Gln Thr Gly Gln Asp Arg
 225 230 235 240
 Leu Ile Ala Pro Leu Leu Asp Lys Lys Val Thr Met Gly His Lys Thr
 245 250 255
 Gly Thr Gly Asp Arg Asn Ala Lys Gly Gln Gln Ile Gly Cys Asn Asp
 260 265 270
 Ile Gly Phe Ile Leu Leu Pro Asp Gly His Ala Tyr Ser Ile Ala Val
 275 280 285
 Phe Val Lys Asp Ser Glu Ala Asp Asn Arg Glu Asn Ser Glu Ile Ile
 290 295 300
 Ala Glu Ile Ser Arg Ile Val Tyr Glu Tyr Val Thr Gln Gln Ile Asp
 305 310 315 320

<210> 9848

<211> 174

<212> PRT

<213> B.fragilis

<400> 9848

Met Asn Thr Asn Glu Arg Pro Glu Met Thr Glu Lys Gln Ser Cys His
 1 5 10 15
 Trp Tyr Leu Ala Phe Thr Ala Ser Arg Ala Glu Gln Arg Val Lys Gln
 20 25 30
 Glu Leu Asp Gln Arg Lys Val Arg Asn Tyr Leu Pro Leu Arg Lys Ile
 35 40 45
 Thr Tyr Gln Trp Gln Gly Arg Ser Lys Glu Ala Leu Cys Pro Gln Ile
 50 55 60
 Ala Arg Cys Val Leu Ile Trp Thr Ser Leu Ser Asp Ile Arg Gln Leu
 65 70 75 80
 Ser Gly Ile Ser Gly Leu Ile Ile Pro Gln Asn Ile Trp Asp Tyr Arg
 85 90 95
 Val Pro Glu Trp Gln Val Glu Ser Tyr Gln Leu Leu Phe Ser Gln Met
 100 105 110
 Asp Thr Ala Val Glu Trp Ile Pro Asp Cys Leu Glu Ser Ala Thr Met
 115 120 125
 Val Arg Val Thr Gly Gly Pro Leu Thr Gly Leu Val Gly Glu Leu Asp
 130 135 140
 Thr Ser Asp Thr Gly Phe Arg Ile Arg Ile Arg Phe His Ser Met Gly
 145 150 155 160
 Cys Phe Arg Val Ala Val Pro Glu Glu Trp Ile Glu Lys Phe
 165 170

<210> 9849

<211> 422

<212> PRT

<213> B.fragilis

<400> 9849

Thr Met Lys Lys Leu Leu Val Tyr Ala Asp Phe Asp Trp Leu Lys Asp
 1 5 10 15
 Ile Glu Leu Ile Gly Glu Leu Ser Tyr Glu Ser Leu Arg Gly Ser Asp
 20 25 30
 Ser Tyr Ala Phe Lys Phe Asn Asp Glu Trp Leu Lys Leu Tyr Gly Asn
 35 40 45
 Leu Phe Ile Ser Ala Asp Leu Asn Asn Tyr Lys Gly Leu Gln Tyr Thr
 50 55 60
 Gln Pro Glu Lys Asp Ile Phe Gly Cys Phe Ser Asp Ala Leu Pro Asp
 65 70 75 80
 Arg Trp Gly Arg Thr Leu Leu Asn Arg Arg Glu Gln Ile Leu Ala Ser
 85 90 95
 Glu Glu Lys Arg Pro Val Arg Arg Leu Ser Ser Phe Asp Tyr Leu Leu
 100 105 110
 Gly Ile Asp Asp Ser Ser Cys Met Gly Gly Phe Arg Phe Lys Glu Thr
 115 120 125
 Pro Asp Gly Asp Phe Ile Asn Ser Ser Asn Thr Leu Arg Ile Pro Pro
 130 135 140
 Leu Thr Ser Ile Arg Glu Leu Ile His Ala Ser Gly Glu Ile Glu Lys
 145 150 155 160
 Ser Glu Glu Glu Asn Lys Ile Pro Asp Lys Lys Trp Leu Thr Gln Leu
 165 170 175
 Leu Gln Pro Gly Phe Ser Leu Gly Gly Ala Arg Pro Lys Ala Ser Ile
 180 185 190
 Val Asp Thr Asn Lys Val Leu Tyr Val Thr Lys Phe Pro Ser Arg Lys
 195 200 205
 Asp Asp Tyr Asn Thr Gly Leu Trp Glu His Phe Cys His Leu Leu Ala

210	215	220
Lys Lys Ala Gly Ile Asn Ala Ala Ser Thr Arg Val Ile Ser Thr Ser		
225	230	235
Asp Lys Tyr His Thr Leu Leu Ser Arg Arg Phe Asp Arg Lys Asp Asp		240
	245	250
Gly Lys Arg Ile His Phe Ala Ser Ala Met Thr Leu Leu Gly Leu Ser		255
	260	265
Asp Gly Ala Asn Ala Ser Thr Gly Asn Gly Tyr Leu Asp Met Val Asp		270
	275	280
Phe Ile Leu Gln Asn Cys Thr Glu Val Asn Lys Asn Leu Gln Glu Leu		285
	290	295
Tyr Arg Arg Val Ala Phe Asn Ile Cys Val Gly Asn Ser Asp Asp His		300
305	310	315
Phe Arg Asn His Gly Phe Leu Leu Thr Ser Lys Gly Trp Thr Leu Ser		320
	325	330
		335
Pro Ala Tyr Asp Met Asn Pro Thr Leu Asn Glu Tyr Gln Ser Leu Leu		
	340	345
		350
Ile Ser Asn Ser Ser Asn Lys Ala Asp Leu Thr Ile Leu Leu Asp Ala		
	355	360
		365
Cys Glu Asp Tyr Met Leu Pro Trp Asp Val Ala Ser Lys Ile Ile Ser		
	370	375
		380
Glu Val Val Ile Ala Ile Arg Asp Trp Lys Ile Leu Ala Thr Lys Leu		
385	390	395
Gly Ile Thr Asn Ser Glu Met Glu Leu Phe Gly Ser Thr Ile Ser Asn		400
	405	410
		415
Arg Ile Lys Glu His Ile		
	420	

<210> 9850

<211> 213

<212> PRT

<213> B.fragilis

<400> 9850

Leu Glu Met Asn Lys Lys Asn Ser Pro Tyr Thr Ala Thr Ile Thr Gly		
1	5	10
		15
Cys Ala Phe Leu Tyr Asn Glu Tyr Leu Arg Ile Leu Pro Leu Leu Met		
	20	25
		30
Ser Glu Asn Ala Thr Glu Leu Leu Lys Asp Glu Val Lys Thr Asn Gln		
	35	40
		45
Ile Leu Gln Val Asn Ser Gln Lys Ala Arg Gln Thr Phe Ile Thr Glu		
	50	55
		60
Phe Lys Arg Arg Tyr Asn Ala Val Pro Ala Thr Phe Trp Val Asn Phe		
65	70	75
		80
Gln Thr Met Thr Glu Gln Ala Gln Arg Ala Gly Leu Leu Tyr Ala Ile		
	85	90
		95
Leu Lys Ala Tyr Lys Leu Ala Phe Asp Phe His Phe Asn Val Thr Val		
	100	105
		110
Lys Arg Trp Asn Ser Val Glu Gln Thr Leu Lys Lys Asn Asp Ile Met		
	115	120
		125
Met Glu Phe Asn Glu Leu Ser Ala Arg Asp Glu Phe Val Asp Ser Trp		
	130	135
		140
Thr Asp Asn Thr Lys Asp Arg Cys Ala Ser Gln Tyr Leu Thr Ile Leu		
145	150	155
		160
Arg Gln Ala Gly Leu Asn Ser Lys Thr Asp Glu Leu Lys Pro Ile		
	165	170
		175
His Leu Glu Pro Ser Asp Tyr Thr Phe Tyr Ile Arg Ser Gly Glu Glu		
	180	185
		190
Trp Phe Leu Glu Ala Cys Leu Leu Tyr Pro Tyr Glu Val Asn Asp Ile		

195
Lys Ser Gln Val Lys
210

200

205

<210> 9851
<211> 69
<212> PRT
<213> B.fragilis

<400> 9851
Arg Ser Ser Glu Thr Glu Lys Glu Ile Met Leu Ala Lys Gly Val Lys
1 5 10 15
Ile Val Ser Gly Lys Val Glu Phe Asn Pro Thr Gly Lys Asn Gly Glu
20 25 30
Arg Ile His Gly Trp Phe Ala Pro Asn Gly His Ser Gly Phe Pro Met
35 40 45
Lys Gly Phe Ile Lys Lys Tyr Gln Ser Leu Gly Gln Gly Gly Lys Val
50 55 60
Tyr Pro Asn Arg Asp
65

<210> 9852
<211> 1215
<212> PRT
<213> B.fragilis

<400> 9852
Ile Gln Tyr Asp Met Lys Phe Lys Asp Leu Tyr Glu Lys Gly Leu Asp
1 5 10 15
Arg Lys Val Asn Pro Ala Val Ser Ala Ser Asp Leu Ser Glu Asp Thr
20 25 30
Val Leu Thr Glu Ile Val Glu Tyr Val Phe Thr Gln Glu Ile Ile Val
35 40 45
Asn Leu Tyr His Ile Leu Ile Asn Ile Lys Ile Asn Gln Gly Ser His
50 55 60
Val Gly Ile Trp Ile Asn Gly Tyr Tyr Gly Ser Gly Lys Ser His Phe
65 70 75 80
Leu Lys Tyr Ala Ser Tyr Cys Leu Ser Asn Lys Tyr Ser Glu Met Ala
85 90 95
Phe Ile Arg Leu Ile Glu Ala Thr Gln Glu Met Met Leu Gly Glu Lys
100 105 110
Asp Val Thr Ala Leu Glu Gln Ala Gly Val Ser Leu Ser Glu Leu Arg
115 120 125
Ala Leu Gln Ser Trp Tyr Val Asn Lys Ala Asp Val Glu Met Val Ile
130 135 140
Phe Asn Ile Gly Asp Val His Asp Ala Asn Ala Asp Gln Ala Thr Thr
145 150 155 160
Phe Thr Thr Ile Phe Trp Asn Gln Phe Asn Ala Lys Arg Gly Tyr Asn
165 170 175
Ser Phe Asn Leu Ala Met Ala Gln Tyr Leu Glu Lys Ala Leu Asp Asp
180 185 190
Asp Gly Lys Phe Gln Glu Phe Lys Asp Tyr Val Lys Ser Lys Gly Tyr
195 200 205
Asp Trp Glu Arg Asn Ile Ser Arg Phe Ala Ala Gly Arg Leu Asp Leu
210 215 220
Ala Leu Gln Met Ala Lys Glu Val Asp Pro Ala Leu Ala Ile Asp Val
225 230 235 240
Ile Arg Glu Arg Ile Leu Lys Asn Asp Val Asn Val Ser Val Glu Ala
245 250 255

Phe	Ala	Ala	Glu	Met	Lys	Glu	Tyr	Leu	Asp	His	Lys	Asn	Asn	Arg	Asn
			260					265					270		
Phe	Arg	Ile	Leu	Phe	Phe	Ile	Asp	Glu	Val	Ser	Gln	Phe	Ile	Gly	Glu
		275					280					285			
His	Arg	Asp	Leu	Leu	Leu	Gln	Leu	Gln	Ser	Leu	Val	Lys	Arg	Leu	Asp
	290					295					300				
Glu	Val	Cys	Glu	Ser	Gln	Val	Trp	Ile	Ser	Cys	Thr	Ala	Gln	Gln	Thr
305					310					315					320
Leu	Glu	Glu	Val	Val	Thr	Lys	Val	Gly	Gly	Ser	Ile	Ser	Asn	Pro	Glu
				325					330					335	
Asp	Glu	Val	Gly	Lys	Ile	Leu	Gly	Arg	Phe	Glu	Val	Arg	Ala	Ser	Leu
			340					345					350		
Gln	Gly	Thr	Ser	Pro	Glu	Tyr	Ile	Thr	Gln	Lys	Arg	Ile	Leu	Asp	Lys
		355					360					365			
Lys	Gly	Glu	Val	Glu	Leu	Gln	Leu	Ser	Glu	Leu	Phe	Glu	Lys	Lys	Lys
	370					375					380				
Ala	Met	Leu	Asp	Ala	Gln	Phe	Ile	Leu	Pro	Ser	Thr	Tyr	Gln	Ala	Tyr
385					390					395					400
Lys	Asn	Lys	Glu	Asp	Phe	Ala	Ala	Phe	Tyr	Pro	Phe	Val	Pro	Tyr	Gln
				405					410					415	
Phe	Gln	Leu	Ile	Met	Lys	Val	Leu	Asp	Ser	Phe	Val	Asn	Met	Asn	Tyr
			420					425					430		
Val	Asp	Lys	Gln	Val	Lys	Gly	Asn	Glu	Arg	Ser	Leu	Leu	Asn	Ile	Thr
		435					440						445		
Phe	Ser	Ile	Ala	Lys	Glu	Thr	Ala	Glu	Cys	Glu	Val	Gly	Glu	Phe	Ile
	450					455					460				
Pro	Phe	Asp	Arg	Phe	Phe	Gly	Ala	Met	Phe	Gln	Gly	Ser	Met	Gln	His
465					470					475					480
Ile	Gly	Gln	Arg	Ala	Met	Ala	Asn	Ala	Arg	Glu	Ala	Leu	Asp	Met	Val
				485					490					495	
Thr	Asp	Glu	Asp	Lys	Gln	Thr	Phe	Tyr	Arg	Arg	Val	Val	Tyr	Val	Leu
			500					505					510		
Phe	Met	Val	Cys	Asn	Leu	Ser	Glu	Val	Asp	Lys	Gln	Ser	Phe	Ser	Ala
		515					520					525			
Thr	Ile	Asp	Asn	Ile	Val	Thr	Leu	Leu	Met	Thr	Lys	Val	Asp	Ala	Asn
	530					535						540			
Lys	Ala	Ala	Ile	Lys	Glu	Glu	Val	Ser	Gln	Val	Leu	Ser	Phe	Leu	Met
545					550					555					560
Asp	Lys	Ala	Val	Ile	Arg	Lys	Ile	Lys	Thr	Asp	Asn	Gly	Thr	Glu	Val
				565					570					575	
Tyr	Glu	Phe	Tyr	Thr	Glu	Glu	Glu	Ser	Lys	Val	Ala	Gln	Ile	Ile	Lys
			580					585					590		
Asn	Gln	Lys	Val	Asp	Asn	Asn	Thr	Tyr	Thr	Glu	Glu	Leu	Tyr	Lys	Ile
		595					600					605			
Ile	Ser	Asp	His	P											

					725					730					735	
Asp	Ala	Cys	Pro	Val	Ile	Ser	Gly	Gln	Asn	Ile	Leu	Ser	Pro	Ser	Val	
			740					745					750			
Leu	Gly	Ser	Ala	Lys	Asn	Lys	Glu	Arg	Tyr	Lys	Ala	Ala	Leu	Thr	Asn	
		755					760					765				
His	Leu	Lys	Asn	Leu	Tyr	Asp	Ser	Ala	His	Leu	Val	Asn	Gly	Ser	Glu	
	770					775					780					
Tyr	Pro	Lys	Ser	Gln	Ser	Glu	Leu	Ser	Asp	Lys	Ile	Leu	Arg	Pro	Val	
785					790					795					800	
Glu	Ala	Thr	Leu	Val	Asp	Leu	Pro	Leu	Thr	Thr	Ala	Glu	Lys	Lys	Val	
				805					810					815		
Lys	Asp	Tyr	Leu	Asp	Arg	Ala	Pro	His	Asp	Val	Thr	Val	Ala	Asp	Val	
			820					825					830			
Val	Arg	Gln	Phe	Ala	Lys	Val	Pro	Tyr	Gly	Trp	Ala	Asp	Cys	Cys	Ser	
		835					840					845				
Ile	Tyr	Val	Val	Asn	Glu	Leu	Val	Arg	Arg	His	Leu	Tyr	Ala	Phe	Asn	
	850					855						860				
Tyr	Asn	Asn	Asn	Pro	Asn	Val	Ser	Arg	Glu	Asp	Thr	Ala	Arg	Asn	Ile	
865					870					875					880	
Met	Arg	Asp	Ala	Asn	Arg	Phe	Thr	Ile	Glu	Pro	Ala	Lys	Ala	Ile	Ser	
				885					890					895		
Gln	Asp	Ile	Leu	Asn	Glu	Phe	Ile	Glu	Ala	Trp	Lys	His	Ile	Phe	Asn	
			900					905					910			
Val	Val	Thr	Leu	Lys	Gly	Ser	Asn	Asp	Ser	Thr	Glu	Leu	Tyr	Arg	Asn	
		915					920					925				
Cys	Lys	Glu	Thr	Asp	Asp	Ser	Ala	Leu	Asn	Arg	Leu	Leu	Ser	Asn	Tyr	
	930					935					940					
Arg	Lys	Leu	Ser	Arg	Lys	Ile	Asn	Gly	Cys	Pro	Phe	Glu	Ser	Val	Ile	
945					950					955					960	
Asp	Glu	Ala	Ile	Thr	Leu	Met	Glu	Lys	Trp	Thr	Asn	Ile	Arg	Asp	His	
				965					970					975		
Lys	Glu	Phe	Phe	Leu	Thr	Ile	Thr	Glu	Ala	Lys	Glu	Ser	Ala	Ala	Thr	
			980					985					990			
Leu	Phe	Asp	Arg	Cys	Lys	Asn	Ile	Asn	Thr	Phe	Val	Asn	Asp	Gln	Phe	
		995					1000					1005				
Glu	Gly	Tyr	Gln	Lys	Val	Lys	Leu	Phe	Ile	Gln	Glu	Asn	Arg	Asp	Asn	
	1010					1015						1020				
Phe	Ala	Phe	Leu	Pro	Lys	Asp	Gln	Glu	Glu	Ala	Gln	Asn	Arg	Leu	Cys	
1025					1030					1035					1040	
Ala	Ile	His	Asn	Asp	Met	Glu	Pro	Trp	Asp	Asn	Met	Pro	Ala	Tyr	Leu	
				1045					1050					1055		
Lys	Met	Met	Arg	Asn	Leu	Ser	Gly	Arg	Leu	Glu	Glu	Cys	Lys	Ala	Thr	
</																

Glu Leu Met Gln His Ile Gly Gly Asp Tyr Asp Ile Ile Ile Ser
 1205 1210 1215

<210> 9853

<211> 728

<212> PRT

<213> B.fragilis

<400> 9853

Ala Thr Met Glu Lys Ile Arg Thr Asn His Ile Arg Val Glu Phe Leu
 1 5 10 15
 Trp Lys Glu Phe Leu Glu Asp Tyr Asp Phe Phe Lys Ile Glu Tyr Gly
 20 25 30
 Asp Val Asp Phe Asp Asn Ile Thr Gly Ile Tyr Cys Lys Leu Glu Gly
 35 40 45
 Leu Cys Pro Asn Ser Ala Ile Cys Ala Phe Asn Lys Met Ala Lys Asn
 50 55 60
 Ala Gln Pro Gly Glu Ser Ser Lys His Arg Ile Phe Leu Phe Ala Ser
 65 70 75 80
 Ser Lys Lys Glu Lys Val Thr Val Ala Gln Leu Gln Glu Cys Met Lys
 85 90 95
 Lys Val Asn Val Lys Ile Lys Gln Ile Thr Tyr Cys Pro Ala His Asn
 100 105 110
 Glu Gly Ile Tyr Thr Tyr Asn Met Leu Asn Leu Leu Leu Ser Met Ile
 115 120 125
 Pro Asn Arg Asn Lys Thr Leu Ser Tyr Ala His Gly Lys Leu Ile Cys
 130 135 140
 Gly Thr Cys Ser Ser Ile Tyr Asn Lys Gly Arg Ser Ala Gly Glu Glu
 145 150 155 160
 Leu Gly Leu His Ile Ser Phe Asp Tyr Asp Asn Leu Leu Thr Ala His
 165 170 175
 Thr Leu Thr Phe Ala Glu Glu Asp Arg Val Glu Gln Lys Lys Lys Lys
 180 185 190
 Gly Ser Ser Val Tyr His Leu Glu Phe Asp Glu Lys Arg Ile Tyr Phe
 195 200 205
 Ser Ser Lys Lys Lys Lys Gly Thr Gln Glu Tyr Tyr Asn His Pro Ser
 210 215 220
 Phe Leu Arg Lys Asp Asn Lys Asn Arg Ile Pro Phe Leu Gly Phe Gly
 225 230 235 240
 Asp Val Glu His Phe Glu Glu Ser Gln Ala Tyr Ile Ile Arg Thr Val
 245 250 255
 Leu Gln Glu Phe Leu Thr Thr Tyr Ser Lys Tyr Ile Ser Val Asp Pro
 260 265 270
 Ile Glu Tyr Lys Lys Pro Met Leu Leu Lys Ala Gln Asp Ala Glu Phe
 275 280 285
 Lys Lys Glu Asp Glu Leu Leu Arg Asp Met Leu Ser Thr Ser Trp Ile
 290 295 300
 Asp Ile Val Cys His Thr Ser Glu Ala Gly Val Glu Glu Leu Arg Asn
 305 310 315 320
 Leu Ile Glu Gln Lys Ser Arg Glu Tyr Ile Lys Lys Leu Phe Ser Asn
 325 330 335
 Asn Phe Glu Gly Cys Tyr Glu Lys Asp Lys Ser Lys Lys Gln Ile Cys
 340 345 350
 Ile Arg Ile Val Gly Asp Lys Tyr Gln Glu Gly Glu Leu Ser Asp Ser
 355 360 365
 Lys Arg Lys Ala Leu Asp His Arg Arg Leu Lys Glu Lys Val Asp Leu
 370 375 380
 Ile Glu Lys Lys Ile Pro Thr Gln Asp Val Met Ile Lys Ser Glu Ile
 385 390 395 400

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Glu Met Ala Thr Ile Lys Asn Ile Phe Arg Gln Ile Leu Ile Lys Asp
      405      410      415
Tyr Cys Ile Lys Glu Thr Leu Pro Gln Tyr Met Ile Asp Arg Phe Lys
      420      425      430
Gly Cys Val Ile Thr Tyr Ala Glu Lys Lys Thr Asn Asp Leu Tyr Tyr
      435      440      445
Phe Val Gln Leu Thr Ile Gly Lys Asp Gly Leu Ile Ile Tyr Lys Val
      450      455      460
Glu Glu Pro Arg Leu Ser His Asp Asp Val Ile Thr Val Met Gly Glu
465      470      475      480
Asn Phe Glu Ser Tyr Glu Tyr His Ile Pro Ala Phe Lys Lys Gly Tyr
      485      490      495
Asn Lys Asn Phe Ile Tyr Cys Ile Glu Lys Asp Gly Ile Thr Tyr Asn
      500      505      510
Ile Tyr Asp Thr Cys Glu Phe Val Phe Pro Glu Met Glu Glu Ile His
      515      520      525
Gln Ala Leu Val Glu Leu Lys Asn Val Gln Val Pro Val Val Ile Tyr
      530      535      540
His Asp Leu Met Asp Met Val Gln Arg Asp Glu Ser Lys Val Leu Cys
545      550      555      560
Lys Gln Arg Ile Arg Glu Tyr Ala Asp Asn Val Pro His Asp Leu Phe
      565      570      575
Tyr Ser Asp Ile Lys Lys Leu Gly Lys Glu Ala Pro Leu Glu Glu Lys
      580      585      590
Leu Thr Arg Lys Leu Met Arg Phe Val Thr Ser Lys Tyr Asn Ile Lys
      595      600      605
Lys Gly Gln Asp Phe Arg Thr Ala Gly Arg Ser Glu Glu Thr Leu Ala
      610      615      620
Ala Cys Val Asn Val His Tyr Trp Lys Gln Asp Ala Lys Leu Trp Lys
625      630      635      640
Tyr Cys Ala Gly Pro Asn Thr Lys Gly Lys Phe Asp Ser Ile Asn His
      645      650      655
Lys Val Tyr Val Arg Glu Leu Val Ser Asp Met Thr Pro Asn Glu Ala
      660      665      670
Phe Val Asn Glu Leu Ile Tyr Ser Leu Gly Asp Gly Trp Asn Lys Ile
      675      680      685
Asn Glu Phe Ser Val His Pro Ser Ile Phe Lys Phe Leu Lys Glu Arg
      690      695      700
Leu Glu Ile Tyr Lys Ala Gln Glu Gln Leu Asn Glu Leu Thr Lys Lys
705      710      715      720
Leu Lys Tyr Lys Tyr Phe Leu Gly
      725

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<210> 9854

<211> 679

<212> PRT

<213> B.fragilis

<400> 9854

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Thr Thr Met Glu Leu His Asp Lys Val Met Asn Ala Phe Ile Gly Lys
1      5      10      15
Val Val Arg Lys Asp Leu Ala Phe Leu Val Lys Gly Gly Leu Pro Val
      20      25      30
Pro Thr Tyr Val Leu Glu Tyr Leu Leu Gly Gln Tyr Cys Ala Ser Asp
      35      40      45
Asp Glu Glu Val Ile Ala Glu Gly Leu Glu Lys Val Lys Gln Val Ile
      50      55      60
Gln His Asn Tyr Val His Arg Ala Asp Ala Glu Ser Ile Lys Gly Ile
65      70      75      80

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Ile	Arg	Glu	Asn	Gly	His	His	Arg	Ile	Ile	Asp	Lys	Val	Thr	Val	Val	85	90	95
Leu	Asn	Glu	Lys	Ala	Asp	Glu	Tyr	His	Ala	Ser	Phe	Ala	Asn	Leu	Gly	100	105	110
Leu	Gly	Ser	Val	Pro	Ile	Gly	Thr	Glu	Tyr	Val	Arg	Lys	Asn	Pro	Lys	115	120	125
Leu	Leu	Ser	Gly	Asn	Gly	Val	Trp	Cys	Ile	Val	Thr	Val	Gly	Tyr	Ile	130	135	140
Ser	Gly	Glu	Asp	Val	Lys	Val	Arg	Trp	Glu	Ile	Gln	Ser	Leu	Lys	Pro	145	150	155
Ile	Gln	Ile	Ser	Asn	Val	Asp	Val	Gln	Glu	Tyr	Ile	Asp	Gln	Arg	Gln	165	170	175
Gln	Phe	Ser	Thr	Asp	Glu	Trp	Ile	Asp	Phe	Leu	Ile	His	Thr	Ile	Gly	180	185	190
Leu	Asn	Pro	Glu	Lys	Leu	Asn	Arg	Arg	Glu	Lys	Phe	Ile	Ser	Leu	Ala	195	200	205
Arg	Leu	Leu	Pro	His	Val	Glu	Asn	Asn	Phe	Asn	Phe	Met	Glu	Leu	Gly	210	215	220
Pro	Lys	Gly	Thr	Gly	Lys	Ser	His	Val	Phe	Gln	Glu	Leu	Ser	Pro	Ser	225	230	235
Gly	Val	Leu	Val	Ser	Gly	Gly	Asp	Val	Thr	Ser	Ala	Arg	Leu	Phe	Val	245	250	255
Lys	Met	Ser	Gly	Asn	Arg	Glu	Ile	Leu	Gly	Leu	Val	Gly	Tyr	Trp	Asp	260	265	270
Val	Val	Ala	Trp	Asp	Glu	Phe	Glu	Gln	Gln	Lys	Gly	Arg	Ala	Val	Asp	275	280	285
Ala	Val	Met	Ile	Asp	Thr	Met	Gln	Asn	Tyr	Leu	Ala	Asn	Lys	Ser	Phe	290	295	300
Asn	Arg	Gly	Lys	Gly	Thr	His	Glu	Ala	Ser	Ala	Ser	Met	Val	Phe	Val	305	310	315
Gly	Asn	Thr	Lys	His	Thr	Ile	Pro	Phe	Met	Leu	Asn	Asn	Ser	His	Leu	325	330	335
Phe	Glu	Ser	Ile	Pro	Thr	Ser	Phe	Ile	Lys	Gly	Ala	Phe	Leu	Asp	Arg	340	345	350
Ile	His	Leu	Tyr	Asn	Pro	Gly	Trp	Glu	Ile	Arg	Met	Leu	Lys	Lys	Glu	355	360	365
Ser	Phe	Ser	Lys	Gly	Tyr	Gly	Leu	Ile	Thr	Asp	Tyr	Ile	Ala	Ala	Val	370	375	380
Leu	His	Glu	Leu	Arg	Asn	Arg	Asp	Phe	Ser	Ser	Asn	Leu	Asn	Ser	Phe	385	390	395
Val	Lys	Phe	Ser	Gly	Thr	Leu	Ser	Glu	Arg	Asp	His	Leu	Ala	Ile	Arg	405	410	415
Lys	Thr	Phe	Ser	Gly	Met	Val	Lys	Leu	Leu	Tyr	Pro	Asp	Ser	Asn	Tyr	420	425	430
Thr	Asp	Glu	Glu	Ala	Leu	Glu	Ile	Ile	Glu	Phe	Ala	Ala	Glu	Cys	Arg	435	440	445
Lys	Arg	Val	Lys	Asp	Gln	Leu	Tyr	Ile	Ile	Asp	Glu	Thr	Phe	Arg	Ala	450	455	460
Glu	Pro	Ala	Lys	Phe	Glu	Tyr	Leu	Ile	Leu	Lys	Thr	Gly	Glu	Thr	Lys	465	470	475
Gln	Val	Glu	Thr	Leu	Glu	Arg	Ile	Glu	Asn	Pro	Ala	Ile	Ile	Glu	Asp	485	490	495
Ile	Gln	Thr	Glu	Pro	Ile	Glu	Val	Ala	Ser	Glu	Pro	Ala	Thr	Thr		500	505	510
Thr	Ser	Asn	Pro	Ser	Ile	Arg	Pro	Arg	Ile	Pro	Gln	Leu	Ala	Ser	Lys	515	520	525
Gln	Val	Asp	Ile	Arg	Met	Asn	Gln	Arg	Gly	Val	Ser	Tyr	Lys	Ser	Leu	530	535	540
Phe	Gly	Asp	Tyr	Ile	Arg	Thr	Ala	Lys	Lys	Ile	Thr	Ile	Val	Asp	Pro			

545 550 555 560
 Phe Ile Arg Val Gly His Gln Ile Asp Asn Leu Ile Glu Phe Ile Gln
 565 570 575
 Met Ala Arg Glu Val Cys Leu Thr Pro Glu Glu Leu Glu Ile Glu Leu
 580 585 590
 His Thr Gln Asn Glu Glu Asp Lys Ile Pro Glu Val Ile Asp Ile Phe
 595 600 605
 Asn Glu Leu Gln Glu Glu Leu Ser Ser Tyr Gly Val Thr Phe Asn Phe
 610 615 620
 Met Phe Asp Ala Gly His Asp Arg Lys Ile Asp Leu Asp Asn Gly Trp
 625 630 635 640
 Ile Ile Asn Leu Gly Arg Gly Leu Asp Ile Phe Glu Lys Phe Ser Arg
 645 650 655
 Phe Ser Leu Ser Asn Ser Arg Gln Glu Asn Arg Arg Cys Lys Glu Phe
 660 665 670
 Ser Val Thr Tyr Met Tyr Lys
 675

<210> 9855
 <211> 98
 <212> PRT
 <213> B.fragilis

<400> 9855
 Ile Leu Arg Leu Pro Trp His Gln Ile Glu His Cys Ser Ser Lys Asp
 1 5 10 15
 Thr Ile Thr Gln Ala Met Thr Met Asp Ile Gly Phe Gly Asp Val Val
 20 25 30
 Thr Pro Lys Thr Ile Pro Leu Asp Tyr Ser Leu Leu Leu Lys His Leu
 35 40 45
 Pro Ile Ala Asn Ile Leu Val Tyr Ser Ile Glu Thr Val Ile Ala Glu
 50 55 60
 Lys Met His Thr Val Val Asp Leu Ala Asp Gln Ser Ser Arg Met Lys
 65 70 75 80
 Asp Tyr Tyr Glu Leu Tyr Gln Ile Leu Ser Ala Asn Gln Tyr Asp Val
 85 90 95
 Ser Val

<210> 9856
 <211> 96
 <212> PRT
 <213> B.fragilis

<400> 9856
 Ala Phe Val Cys Ile His Lys Ser Ser Phe Leu Ser Asn Lys Ile Val
 1 5 10 15
 Pro Ile Ala Gly Leu Lys Tyr Asp Lys Ala Val Ala Leu Gly Asn Ser
 20 25 30
 Val Leu Val Ser Phe Gly Lys Asn Phe Phe Leu Phe Gly Tyr Val Glu
 35 40 45
 Gln Ala Ile Ser Asn Arg Phe Ser Val Val Leu Tyr Ile Ile Thr Tyr
 50 55 60
 Ser Phe Ile Ser Arg Tyr Phe Ser Arg Val Phe Ala Ile Arg Ser Leu
 65 70 75 80
 Phe Ala Leu Ser Ile Asn Arg Val Arg Ser Arg Leu Gly Ser Ala Arg
 85 90 95

<210> 9857

<211> 89
 <212> PRT
 <213> B.fragilis

<400> 9857

Thr	Leu	Glu	Arg	Val	Leu	Ala	Tyr	Thr	Ser	Gln	Gln	Leu	Ala	Leu	Tyr
1				5					10					15	
Met	Lys	Glu	Asn	Gln	Phe	Asn	Gln	Leu	Tyr	Glu	His	Ile	Arg	Met	Phe
			20					25					30		
Gln	Tyr	Val	Thr	Glu	Glu	Glu	Cys	Gln	Leu	Ile	Gln	Asn	Pro	Val	Thr
		35					40					45			
Ile	Asp	Ser	Gln	Ile	Lys	Ser	Ile	Asp	Leu	Met	His	Phe	Gly	Trp	Asn
	50					55					60				
Ile	Gly	Asn	Ala	Phe	Gly	Lys	Pro	Arg	Leu	Gln	Thr	Ala	Thr	Phe	Ile
65					70					75					80
Lys	Lys	Val	Phe	Ala	His	Tyr	Ser	Pro							
					85										

<210> 9858
 <211> 369
 <212> PRT
 <213> B.fragilis

<400> 9858

Ile	Lys	Arg	Arg	Leu	Glu	Arg	Leu	Leu	Ser	Pro	Leu	Cys	Phe	His	Tyr
1				5					10					15	
Leu	Arg	Asn	Ile	Pro	Tyr	Phe	Cys	Gln	Ile	Ile	Ile	Tyr	Phe	Tyr	Ile
		20						25					30		
Gln	Asn	Thr	Thr	Met	Lys	His	Leu	Val	Ile	Cys	Ile	Ala	Leu	Leu	Thr
		35					40					45			
Val	Gly	Ala	Cys	Cys	Phe	Ala	Gln	Gln	Lys	Lys	Val	Ala	Ser	His	Lys
	50					55					60				
Ala	Thr	Ser	Gly	Asn	Pro	Val	Phe	Gln	Gly	Trp	Tyr	Ala	Asp	Pro	Glu
65				70					75						80
Gly	Ile	Ile	Tyr	Asp	Asp	Thr	Tyr	Trp	Ile	Phe	Pro	Thr	Trp	Ser	Asp
			85					90					95		
Leu	Tyr	Glu	Asn	Gln	Thr	Phe	Phe	Asp	Cys	Phe	Ser	Ser	Lys	Asp	Leu
		100						105					110		
Val	Asn	Trp	Thr	Lys	His	Ala	Ser	Val	Leu	Asp	Thr	Thr	Ala	Val	Lys
		115					120					125			
Trp	Ala	Lys	Lys	Ala	Met	Trp	Ala	Pro	Ser	Val	Ile	Arg	Lys	Asn	Gly
	130					135					140				
Lys	Tyr	Tyr	Ile	Phe	Phe	Gly	Ala	Asn	Asp	Val	His	Glu	Gly	Glu	Ile
145				150					155						160
Gly	Gly	Ile	Gly	Val	Ala	Val	Ser	Asp	Arg	Pro	Glu	Gly	Pro	Tyr	Lys
			165					170					175		
Asp	Leu	Leu	Gly	Lys	Pro	Leu	Ile	Asn	Glu	Ile	Val	Asn	Gly	Ala	Gln
			180					185				190			
Pro	Ile	Asp	Gln	Phe	Val	Tyr	Asn	Asp	Asn	Gly	His	Tyr	Tyr	Met	Tyr
		195				200						205			
Tyr	Gly	Gly	Trp	Gly	His	Cys	Asn	Val	Val	Gln	Leu	Asn	Asp	Asp	Phe
	210					215					220				
Thr	Gly	Leu	Val	Pro	Phe	Glu	Asp	Gly	Thr	Val	Tyr	Lys	Glu	Val	Thr
225				230					235						240
Pro	Glu	Asn	Tyr	Val	Glu	Gly	Pro	Phe	Met	Phe	Lys	Lys	Asp	Gly	Lys
			245					250					255		
Tyr	Tyr	Phe	Met	Trp	Ser	Glu	Gly	Gly	Trp	Gly	Gly	Pro	Asp	Tyr	Ser
			260				265					270			
Val	Ala	Tyr	Ala	Ile	Ser	Asp	Ser	Pro	Phe	Gly	Pro	Phe	Lys	Arg	Val

275 280 285
 Ala Lys Ile Leu Gln Gln Asp Thr Ser Val Ala Thr Ser Ala Gly His
 290 295 300
 His Ser Leu Leu His Ala Pro Gly Thr Asp Asp Tyr Tyr Ile Val Tyr
 305 310 315 320
 His Arg Arg Pro Leu Asn Asp Asn Ala Arg Asp His Arg Val Thr Cys
 325 330 335
 Ile Asp Lys Met Thr Phe Asp Lys Asp Gly Phe Ile Asn Pro Val Lys
 340 345 350
 Met Thr Phe Glu Gly Val Pro Ala Gln Lys Ile Lys Lys Ser Lys Lys
 355 360 365
 Lys

<210> 9859
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9859
 Tyr Ile Glu Ser Ser Gly Ile Lys Asp Lys Cys Tyr Arg Gln Asp Gly
 1 5 10 15
 Ile Ser Lys Leu Thr Glu Ile Cys Arg Phe Phe Asp Leu Pro Asp Leu
 20 25 30
 Lys His Ile Tyr Leu Glu Lys Lys Asp Ile Ala Thr Ile Ala Asn Phe
 35 40 45
 Ala Ala Asn Gln Ile Leu Phe Ala Ser Gln Cys Phe Phe Leu Val His
 50 55 60
 Ser Leu Tyr Leu Phe Tyr Ile Ile
 65 70

<210> 9860
 <211> 127
 <212> PRT
 <213> B.fragilis

<400> 9860
 Met Met Thr Gly Thr Gly Ser Tyr Arg Ser Ile Leu Leu Gln Asn Leu
 1 5 10 15
 Ser Tyr Pro Phe Lys Arg Ser Glu Arg Arg Ile Gly Asn Ser Ile Ser
 20 25 30
 Tyr Arg Val Ile Gly Thr Ser Pro Thr Thr Phe Thr Pro His Lys Ile
 35 40 45
 Val Phe Thr Val Phe Leu Glu His Lys Arg Thr Phe Asn Ile Val Leu
 50 55 60
 Arg Ser His Phe Phe Ile Asp Ser Ala Ile Phe Lys Arg Asn Glu Pro
 65 70 75 80
 Cys Lys Ile Ile Val Gln Leu Tyr Asn Ile Ala Met Pro Pro Thr Thr
 85 90 95
 Ile Ile His Ile Ile Met Ser Ile Ile Val Tyr Lys Leu Ile Asp
 100 105 110
 Arg Leu Arg Ser Ile His Tyr Phe Ile Asn Gln Arg Leu Thr Gln
 115 120 125

<210> 9861
 <211> 660
 <212> PRT
 <213> B.fragilis

<400> 9861

Arg Gly Cys Gly Asn Asn Arg Thr Lys Glu Thr Glu Ile Ile Ile Asn
 1 5 10 15
 Lys Arg Ile Thr Ile Met Gly Lys Ile Gly Ile Asp Leu Gly Thr
 20 25 30
 Thr Asn Ser Cys Val Ser Val Phe Glu Gly Asn Glu Pro Val Val Ile
 35 40 45
 Ala Asn Ser Glu Gly Lys Arg Thr Thr Pro Ser Ile Val Ala Phe Val
 50 55 60
 Asp Gly Gly Glu Arg Lys Val Gly Asp Pro Ala Lys Arg Gln Ala Ile
 65 70 75 80
 Thr Asn Pro Thr Arg Thr Ile Phe Ser Ile Lys Arg Phe Met Gly Glu
 85 90 95
 Asn Trp Asp Gln Val Gln Lys Glu Ile Ala Arg Val Pro Tyr Lys Val
 100 105 110
 Val Lys Gly Asp Asn Asn Thr Pro Arg Val Asp Ile Asp Gly Arg Leu
 115 120 125
 Tyr Thr Pro Gln Glu Ile Ser Ala Met Ile Leu Gln Lys Met Lys Lys
 130 135 140
 Thr Ala Glu Asp Tyr Leu Gly Gln Glu Val Thr Glu Ala Val Ile Thr
 145 150 155 160
 Val Pro Ala Tyr Phe Ser Asp Ser Gln Arg Gln Ala Thr Lys Glu Ala
 165 170 175
 Gly Gln Ile Ala Gly Leu Glu Val Lys Arg Ile Val Asn Glu Pro Thr
 180 185 190
 Ala Ala Ala Leu Ala Tyr Gly Leu Asp Lys Ala His Lys Asp Met Lys
 195 200 205
 Ile Ala Val Phe Asp Leu Gly Gly Gly Thr Phe Asp Ile Ser Ile Leu
 210 215 220
 Glu Phe Gly Gly Gly Val Phe Glu Val Leu Ser Thr Asn Gly Asp Thr
 225 230 235 240
 His Leu Gly Gly Asp Asp Phe Asp Gln Val Ile Ile Asp Trp Leu Val
 245 250 255
 Gln Glu Phe Lys Asn Asp Glu Gly Ala Asp Leu Thr Gln Asp Pro Met
 260 265 270
 Ala Met Gln Arg Leu Lys Glu Ala Ala Glu Lys Ala Lys Ile Glu Leu
 275 280 285
 Ser Ser Ser Thr Ser Thr Glu Ile Asn Leu Pro Tyr Ile Met Pro Val
 290 295 300
 Gly Gly Val Pro Lys His Leu Val Lys Thr Leu Thr Arg Ala Lys Phe
 305 310 315 320
 Glu Ser Leu Ala His Asn Leu Ile Gln Ala Cys Leu Glu Pro Cys Lys
 325 330 335
 Lys Ala Met Gln Asp Ala Gly Leu Ser Asn Ser Asp Ile Asp Glu Val
 340 345 350
 Ile Leu Val Gly Gly Ser Ser Arg Ile Pro Ala Val Gln Lys Leu Val
 355 360 365
 Glu Asp Phe Phe Gly Lys Thr Pro Ser Lys Gly Val Asn Pro Asp Glu
 370 375 380
 Val Val Ala Val Gly Ala Ala Val Gln Gly Ala Val Leu Thr Asp Glu
 385 390 395 400
 Ile Lys Gly Val Val Leu Leu Asp Val Thr Pro Leu Ser Met Gly Ile
 405 410 415
 Glu Thr Leu Gly Gly Val Met Thr Lys Leu Ile Asp Ala Asn Thr Thr
 420 425 430
 Ile Pro Ala Arg Lys Ser Glu Thr Phe Ser Thr Ala Ala Asp Asn Gln
 435 440 445
 Thr Glu Val Thr Ile His Val Leu Gln Gly Glu Arg Pro Met Ala Ala
 450 455 460

Gln Asn Lys Ser Ile Gly Gln Phe Asn Leu Thr Gly Ile Ala Pro Ala
 465 470 475 480
 Arg Arg Gly Val Pro Gln Ile Glu Val Thr Phe Asp Ile Asp Ala Asn
 485 490 495
 Gly Ile Leu Lys Val Ser Ala Lys Asp Lys Ala Thr Gly Lys Glu Gln
 500 505 510
 Ala Ile Arg Ile Glu Ala Ser Ser Gly Leu Ser Lys Glu Glu Ile Glu
 515 520 525
 Lys Met Lys Ala Glu Ala Glu Ala Asn Ala Glu Ala Asp Lys Lys Glu
 530 535 540
 Arg Glu Lys Ile Asp Lys Leu Asn Gln Ala Asp Ser Leu Ile Phe Gln
 545 550 555 560
 Thr Glu Thr Gln Leu Lys Glu Leu Gly Asp Lys Leu Pro Ala Asp Lys
 565 570 575
 Lys Ala Pro Ile Glu Ala Ala Leu Gln Lys Leu Lys Asp Ala His Lys
 580 585 590
 Ala Gln Asp Met Thr Thr Ile Asp Ser Ala Met Ala Glu Leu Asn Thr
 595 600 605
 Ala Phe Gln Ala Ala Ser Ala Glu Met Tyr Ala Gln Ser Gly Ala Gln
 610 615 620
 Gly Gly Ala Gln Ala Gly Pro Asp Met Asn Ala Gly Gln Ser Asn Ala
 625 630 635 640
 Gly Gln Asn Asn Gly Lys Gln Asp Asp Asn Val Gln Asp Ala Asp Phe
 645 650 655
 Glu Glu Val Lys
 660

<210> 9862

<211> 196

<212> PRT

<213> B.fragilis

<400> 9862

Ile Ile Val Met Pro Ser Ser Ser Val Leu Ile Pro Arg Ile Cys Glu
 1 5 10 15
 Tyr Cys Asp Lys Pro Phe Met Ala Arg Ser Val Asn Thr Arg Phe Cys
 20 25 30
 Ser Thr Ile Cys Asn Asn Lys Ser Leu Arg Glu Arg Lys Lys Arg Glu
 35 40 45
 Lys Glu Glu Gln Arg Gln Ile Ser Leu Leu Asp Thr Lys Lys Asn Lys
 50 55 60
 Ile Ala Asp Ile Gln Thr Arg Pro Tyr Ile Ser Val Ser Glu Ala Ala
 65 70 75 80
 Gln Leu Ile Gly Val Ser Lys Ser Thr Ile Arg Arg Met Leu Cys Arg
 85 90 95
 Gly Met Leu Ala Gly Ala Asn Leu Gly Ile Arg Leu Thr Arg Ile Asp
 100 105 110
 Arg Thr Gln Leu Glu Gln Leu Phe Thr Ser Ile Ile Val Pro Glu Glu
 115 120 125
 Gln Ile Lys Pro Lys Phe Tyr Glu Leu Asp Lys Cys Tyr Thr Ile Gly
 130 135 140
 Glu Cys Leu Lys Lys Tyr Asn Ile Pro Glu Cys Arg Leu Glu Ser Ile
 145 150 155 160
 Ile Arg Ala Phe Asn Ile Pro Lys Arg Lys Val Gly Asn Tyr Val Tyr
 165 170 175
 Ile Pro Arg Ile Glu Ile Asp Arg Val Leu Asn Lys Ile Asp Gly Asn
 180 185 190
 Met Glu Asn Ala
 195

<210> 9863
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 9863

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Leu Ile Cys Ile Ser Lys Ala Lys Glu Asn Met Pro Tyr Pro Ile Glu
1           5           10           15
Asn Lys Leu Val Ile Ala Val Ala Ser Ser Ala Leu Phe Asn Leu Ile
20           25           30
Glu Ser Asp Ser Val Phe Lys Thr Gln Gly Glu Ser Ile Tyr Arg Glu
35           40           45
Tyr Gln Glu Asn Arg Leu Asp Ile Pro Phe Glu Lys Gly Val Ala Phe
50           55           60
Pro Phe Ile Lys Arg Leu Leu Ser Leu Asn Gln Ser Phe Pro Glu Glu
65           70           75           80
Gln Pro Ile Glu Val Val Leu Leu Ser Arg Asn Ser Pro Glu Thr Gly
85           90           95
Leu Arg Val Phe Arg Ser Ile Gln Ser Tyr Gly Leu Asn Ile Ser Arg
100          105          110
Ala Tyr Phe Ser Ser Gly Gln Asn Asn Phe Gln Tyr Leu Pro Ala Phe
115          120          125
Asn Ala Ser Leu Phe Leu Ser Ala Asn Ser Asn Asp Thr Arg Ser Ala
130          135          140
Ile Glu Asn Gly Phe Ala Ala Gly Thr Val Leu Asn Lys Val Val Val
145          150          155          160
Asp Asp Asp Asp Asp Met Glu Leu Arg Ile Gly Phe Asp Phe Asp Gly
165          170          175
Val Leu Ala Asp Asp Ala Ser Glu Gln Val Tyr Lys Lys Ala Asn Gly
180          185          190
Asn Met Asn Glu Tyr Phe Glu His Glu Lys Glu His Ala Ala Asp Pro
195          200          205
Leu Ala Lys Gly Pro Ile Gly Asn Leu Leu Gln Lys Ile Ser Phe Phe
210          215          220
Gln Lys Met Glu Lys Lys Arg Ala Lys Ala Asp Pro Ala Tyr Arg Arg
225          230          235          240
Val Leu Lys Thr Ala Ile Ile Thr Ala Arg Asn Ala Pro Ala His Glu
245          250          255
Arg Val Ile Thr Thr Leu Lys Asn Trp Glu Val Glu Val Asp Asp Ala
260          265          270
Phe Phe Leu Gly Gly Ile Asp Lys Ala Arg Val Leu Asn Ile Leu Lys
275          280          285
Pro His Ile Phe Phe Asp Asp Gln Met Val His Leu Asn His Ile Asp
290          295          300
Lys Ile Pro Ala Val His Ile Pro Phe Gly Ile Ala Asn Lys
305          310          315

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<210> 9864
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9864

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Ser Asp Ser Met Tyr Gln Lys Ile Asn Pro Leu Ile Ser Gly Glu Leu
1           5           10           15
Leu Thr Leu Ile Asn Val Leu Leu Tyr Ile Asp Ile Ala Asp Leu Asn
20           25           30
Gly Phe Glu Thr Leu Asn Phe Pro Ser His Leu Asp Val Leu Ser Arg

```

	35		40		45
Tyr	Ile	Ala	Asn	Ser	Asn
	50		55		60

<210> 9865
 <211> 95
 <212> PRT
 <213> B.fragilis

<400> 9865
 Leu Arg Ile Leu Gly Ser Leu Gly Ile Leu Phe Val Phe Ile Phe Ile
 1 5 10 15
 Leu Ser Ile Leu Glu Pro Lys Met Ser Ile Met Thr Leu Thr Phe Glu
 20 25 30
 Cys Val Ser Ala Leu Ser Thr Val Gly Ser Ser Leu Asn Ala Thr Pro
 35 40 45
 Leu Leu Cys Asp Glu Ser Lys Leu Leu Val Ser Leu Leu Met Phe Ile
 50 55 60
 Gly Arg Val Gly Phe Ile Thr Leu Val Leu Gly Ile Val Lys Gln Lys
 65 70 75 80
 Lys Asn Thr Lys Tyr Arg Tyr Pro Ser Asp Asn Ile Ile Ile Asn
 85 90 95

<210> 9866
 <211> 396
 <212> PRT
 <213> B.fragilis

<400> 9866
 Ser Gly Ile Ile Leu Tyr Phe Cys Ala Thr Thr Ile Gln Asn Ser Asp
 1 5 10 15
 Met Met Thr Arg Phe Ser Phe Val Leu Phe Ala Leu Ile Ser Leu Leu
 20 25 30
 Leu Thr Ala Cys Gln Asp Lys Gln Lys Val Val Ser Asn Thr Glu Asn
 35 40 45
 Gly Thr Ser Val Pro Leu Ser Tyr Ala Gln Gly Phe Gly Ile Thr His
 50 55 60
 Ser Ser Gly Tyr Thr Thr Ile Thr Val Tyr Asn Pro Trp Lys Pro Gly
 65 70 75 80
 Glu Ile Tyr Asp Thr Tyr Tyr Leu Val Lys Asn Glu Gly Gln Ala Val
 85 90 95
 Pro Thr Asp Gly Leu Lys Val Val Ile Pro Leu Lys Ser Ile Met Thr
 100 105 110
 Asn Ser Ala Thr His Leu Gly Phe Leu Glu Leu Leu Gly Glu Leu Asp
 115 120 125
 Lys Val Thr Gly Val Cys Asn Ser Asn Tyr Ile Tyr Asn Pro Thr Ile
 130 135 140
 Leu Gln Gly Val Lys Asp Gly Thr Ile Lys Asp Leu Gly Asp Ala Phe
 145 150 155 160
 Asn Leu Asp Ile Glu Asn Leu Leu Leu Leu His Pro Gln Ala Val Met
 165 170 175
 Thr Ser Ala Tyr Asn Ala Glu Asp Glu Asn Gly Arg Arg Met Lys Gln
 180 185 190
 Thr Gly Leu Pro Ile Leu Tyr Asn Ile Glu Trp Gln Glu Lys Ser Ile
 195 200 205
 Leu Gly Arg Ala Glu Trp Ile Lys Phe Ile Gly Ala Phe Phe Asp Lys
 210 215 220
 Glu Lys Leu Ala Asp Ser Ile Phe Ser Gln Ile Ala Glu Gln Tyr Asn
 225 230 235 240

Thr Gln Phe Arg Asp Lys Val Asn Asp Thr Asp Met Glu Gly Asn Leu
 260 265 270
 Leu His Gln Phe Glu Thr Ile Met Ser Phe Phe Thr Arg Asn Leu Arg
 275 280 285
 Thr Val Gln Val Lys Lys Glu Phe Asn Ser Met Gly Glu Leu Glu Ile
 290 295 300
 Pro Tyr Thr Cys Leu Val Glu Leu Val Val Asn Ala Leu Val His Arg
 305 310 315 320
 Ser Leu Asn Arg Lys Ala Pro Ile Arg Ile Phe Ile Phe Asp Asn Arg
 325 330 335
 Val Glu Ile His Ser Pro Gly Thr Leu Pro Asn Gly Leu Ser Val Asp
 340 345 350
 Asp Ile Ile Ala Gly Thr Ser Met Pro Arg Asn Asn Phe Leu Phe Ala
 355 360 365
 Asn Ala Ile Tyr Met Leu Pro Tyr Thr Gly Ala Gly Ser Gly Ile Gln
 370 375 380
 Arg Ala Leu Ser Gln Asp Lys Lys Leu Ser Phe Ser Asn Asn Glu Ser
 385 390 395 400
 Leu His Glu Phe Val Ile Thr Ile Glu Arg Asp Gly Val Ile Val Gly
 405 410 415
 Ala Asp Leu Asp Thr Ser Leu Gln Asn Ser Asp Ala Asn Leu Asp Thr
 420 425 430
 Leu Gln Gln Asp Leu Asp Thr Gln Gln Ala Ile Pro Ser Thr Asp Leu
 435 440 445
 Asp Thr Ser Gln Leu Asp Leu Asp Thr Gln Gln Ala Thr Ser Asn Thr
 450 455 460
 Ser Met Arg Ile Lys Leu Ser Asn Lys Gln Lys Asp Ile Val Asn Tyr
 465 470 475 480
 Cys Ser Val Pro Arg Ser Ser Lys Glu Ile Leu Glu Arg Ala Gly Ile
 485 490 495
 Ser Asn His Ser Lys Asn Arg Glu Lys Tyr Val Thr Phe Leu Val Glu
 500 505 510
 Ala Gly Tyr Leu Glu Met Thr Asn Pro Glu Asn Pro Thr Ala Ser Asn
 515 520 525
 Gln Lys Tyr Arg Lys Lys Leu Lys
 530 535

<210> 9868
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 9868
 Thr Asp Arg Ile Thr Asp Thr Ser Ile Cys Ile Ser Arg Ile Tyr Ser
 1 5 10 15
 Glu Ser Asp Leu Pro Asn Arg Gly Trp Lys Met Lys Asp Glu Gly Gly
 20 25 30
 Arg Trp Lys Ile Glu Met His Phe Ser Tyr Glu Arg Leu Gln Gly Ser
 35 40 45
 Phe Glu Lys Lys Thr Ala Pro Ala Pro Asp Ala Glu
 50 55 60

<210> 9869
 <211> 724
 <212> PRT
 <213> B.fragilis

<400> 9869
 Val Arg Lys Met Gly Lys Lys Val Leu Val Phe Leu Leu Leu Ser

1		5		10		15									
Phe	Ile	Gly	Trp	Thr	Lys	Ala	Gln	Gln	Glu	Leu	Gln	Asn	Gly	Thr	
		20					25					30			
Glu	Gln	Ser	Lys	Gln	Leu	Gln	Val	Phe	Gly	Arg	Asn	Ile	Phe	Ala	Ser
		35					40					45			
Arg	Asn	Leu	Ser	Phe	Glu	Pro	Asn	Leu	Asn	Ile	Pro	Thr	Pro	Glu	Asn
		50					55				60				
Tyr	Arg	Leu	Gly	Pro	Gly	Asp	Glu	Val	Ile	Ile	Asp	Val	Trp	Gly	Thr
					70					75					80
Ser	Glu	Asn	Thr	Val	Arg	Glu	Thr	Ile	Ser	Pro	Glu	Gly	Asn	Ile	Met
				85					90					95	
Val	Glu	Asn	Ile	Gly	Pro	Ile	Tyr	Leu	Ser	Gly	Met	Asn	Met	Glu	Glu
			100					105					110		
Ala	Glu	Arg	Tyr	Leu	Arg	His	Glu	Phe	Ser	Lys	Ile	Tyr	Ala	Ala	Ile
			115				120					125			
Ser	Gly	Glu	Ser	Ala	His	Ile	Lys	Val	Thr	Leu	Gly	Lys	Ile	Arg	Ser
		130				135					140				
Ile	Met	Val	Asn	Val	Met	Gly	Glu	Val	Glu	Val	Pro	Gly	Thr	Tyr	Arg
				150						155					160
Leu	Ser	Ala	Phe	Ala	Ser	Val	Phe	His	Ala	Leu	Tyr	Arg	Ala	Gly	Gly
			165						170					175	
Val	Asn	Arg	Ile	Gly	Ser	Leu	Arg	Thr	Ile	Gln	Val	Val	Arg	Ser	Gly
			180					185					190		
Met	Lys	Val	Ala	Asp	Val	Asp	Val	Tyr	Glu	Tyr	Ile	Met	Lys	Gly	Lys
		195					200					205			
Leu	Thr	Asp	Asp	Ile	Arg	Leu	Ser	Glu	Gly	Asp	Val	Ile	Leu	Val	Ser
		210				215					220				
Pro	Tyr	Glu	Asn	Leu	Val	Gly	Ile	Ser	Gly	Lys	Val	Lys	Arg	Pro	Met
				230						235				240	
Ile	Tyr	Glu	Met	Lys	His	Gly	Glu	Ser	Leu	Ala	Thr	Leu	Ile	Gly	Tyr
				245					250					255	
Thr	Gly	Gly	Phe	Thr	Gly	Asp	Ala	Tyr	Arg	Asn	Thr	Val	Arg	Leu	Val
			260					265					270		
Arg	Arg	Ser	Gly	Arg	Glu	Lys	Gln	Ile	Tyr	Asn	Val	Asp	Gln	Gln	Asp
		275					280					285			
Tyr	Asp	Asn	Phe	Ile	Leu	Thr	Asp	Asn	Asp	Glu	Val	Ser	Val	Glu	Ala
		290				295					300				
Val	Leu	Gly	Arg	Phe	Ser	Asn	Lys	Val	Glu	Ile	His	Gly	Ala	Val	Tyr
				310						315				320	
Arg	Ala	Gly	Met	Tyr	Gln	Leu	Asp	Ser	Val	Thr	Gly	Thr	Ile	Lys	Arg
				325					330					335	
Leu	Ile	Gln	Gln	Ala	Glu	Gly	Leu	Arg	Gly	Asp	Ala	Phe	Leu	Asn	Arg
			340					345					350		
Ala	Leu	Leu	Arg	Arg	Glu	Arg	Glu	Asp	Leu	Ser	His	Glu	Met	Ile	Pro
			355				360					365			
Val	Asp	Leu	Lys	Lys	Leu	Met	Glu	Gly	Thr	Ala	Pro	Asp	Leu	Pro	Leu
			370			375					380				
Gln	Lys	Asn	Asp	Val	Leu	Tyr	Ile	Ser	Ser	Ile	Lys	Glu	Leu	Glu	Glu
				390						395				400	
Glu	Gly	Val	Leu	Phe	Ile	Tyr	Gly	Asp	Val	Ala	Lys	Pro	Gly	Tyr	Phe
				405					410					415	
Pro	Phe	Ala	Arg	Asn	Met	Ser	Val	Gln	Asp	Leu	Ile	Leu	Lys	Ala	Gly
			420					425				430			
Gly	Leu	Leu	Glu	Ser	Ala	Ser	Thr	Val	Arg	Ile	Asp	Val	Ser	Arg	Arg
			435				440					445			
Ile	Lys	Asp	Pro	Lys	Ser	Val	Ser	Ser	Ser	Thr	Val	Ile	Gly	Lys	Ser
			450			455					460				
Phe	Thr	Val	Glu	Leu	Lys	Asn	Gly	Leu	Leu	Ile	Gly	Glu	Ser	Asn	Thr
				470						475				480	

Leu Lys Leu Glu Pro Tyr Asp Met Val Phe Val Arg Arg Ser Pro Gly
 485 490 495
 Tyr Gln Lys Gln Ala Asn Val Thr Val Asn Gly Glu Val Thr Phe Thr
 500 505 510
 Gly Asn Tyr Ala Leu Thr Lys Lys Asn Glu Arg Leu Ser Asp Leu Ile
 515 520 525
 Ala Lys Ala Gly Gly Leu Ser Lys Ser Ala Tyr Ala Lys Gly Ala Arg
 530 535 540
 Leu Met Arg Arg Met Thr Ala Asp Glu Ile Arg Gln Lys Gln Asp Ala
 545 550 555 560
 Val Arg Phe Ala Thr Lys Gly Thr Gly Lys Asp Ser Val Ser Leu Ser
 565 570 575
 Ser Leu Glu Val Asp Gln Thr Tyr Tyr Ser Val Gly Ile Glu Leu Glu
 580 585 590
 Lys Ala Leu Ala Lys Pro Lys Ser Asp Glu Asp Leu Val Leu Arg Glu
 595 600 605
 Gly Asp Val Leu Phe Val Pro Lys Tyr Val Ser Thr Val Thr Val Asn
 610 615 620
 Gly Ala Val Met Tyr Pro Asn Thr Val Leu Tyr Gln Lys Gly Ser Gly
 625 630 635 640
 Ile Asp Tyr Tyr Ile Gly Gln Ala Gly Gly Phe Gly Asn Arg Ala Leu
 645 650 655
 Lys Arg Arg Ala Tyr Val Val Tyr Met Asn Gly Thr Val Ser Arg Leu
 660 665 670
 Arg Arg Asn Thr Ala Asn Ala Ile Glu Pro Gly Cys Glu Ile Ile Val
 675 680 685
 Pro Ser Lys Gly Glu Arg Lys Lys Met Thr Thr Ala Gly Ala Val Gly
 690 695 700
 Met Ser Ser Ser Ile Ala Ser Ile Ala Ala Met Val Ala Ser Met Val
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 Ser Leu Thr Lys

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 Ile Asp Met Asn Cys Ile Thr Glu Thr Phe Glu Ile Lys Ile Ile Glu
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 Lys Thr Trp Phe Val Glu Lys Ile Gly Lys Ser Phe Arg Tyr Thr Lys
 35 40 45
 Thr Asp Ala Cys Asn Tyr Cys His Pro Gly Leu Glu Gln Leu Ser Glu
 50 55 60
 Ile Ala Lys Ile Leu Leu Val Glu Pro Gln Lys Leu Tyr Ile
 65 70 75

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 Gly His Val Leu Ala Glu Glu Leu Ser Thr Leu Gly His Glu Val Ile

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Gly	Ala	Asp	Leu	Asp	Glu	Gly	Arg	Val	Asp	Ser	Ile	Lys	Asp	Lys	Ile
	35						40					45			
Ala	Thr	Ala	Phe	Val	Ile	Asp	Ala	Thr	Asp	Glu	Gln	Ser	Leu	Ser	Val
	50					55					60				
Leu	Pro	Leu	Asn	Ser	Val	Asp	Met	Val	Ile	Val	Ala	Ile	Gly	Glu	Asn
65					70					75					80
Phe	Gly	Ala	Ser	Ile	Arg	Val	Val	Ala	Met	Leu	Lys	Gln	Lys	Gln	Val
			85					90					95		
Lys	His	Ile	Tyr	Ala	Arg	Ala	Ile	Asp	Gly	Val	His	Lys	Ala	Val	Leu
		100						105					110		
Glu	Ala	Phe	Gly	Leu	Glu	Lys	Ile	Leu	Thr	Pro	Glu	Glu	Asp	Ala	Ala
		115					120					125			
Arg	Ser	Leu	Val	Gln	Leu	Leu	Asp	Phe	Gly	Thr	Lys	Met	Glu	Thr	Phe
	130					135					140				
Arg	Val	Asp	Ser	Glu	Tyr	Tyr	Val	Val	Lys	Phe	Asn	Val	Pro	Glu	Lys
145					150					155					160
Phe	Val	Gly	Tyr	Phe	Val	Asn	Glu	Leu	Asn	Leu	Asp	Glu	Glu	Phe	Asn
			165					170					175		
Leu	Lys	Leu	Ile	Gly	Leu	Lys	Arg	Ser	Asn	Thr	Ile	Lys	Asn	Cys	Leu
		180						185					190		
Gly	Ile	Ser	Leu	Val	Glu	His	Lys	Val	Val	Asn	Glu	Leu	Pro	Glu	Asp
	195						200					205			
Ala	Lys	Ile	Arg	Pro	Asp	Asp	Val	Leu	Val	Cys	Tyr	Gly	Lys	Tyr	Ser
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Asp	Phe	Gln	Lys	Leu	Trp	Lys	Ala	Leu							
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<212> PRT

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Asp	Ser	Cys	Gln	Val	Ser	Glu	Pro	Val	Thr	Ala	Thr	Gln	Glu	Thr	Pro
		20					25					30			
Arg	Thr	Ile	Ala	Thr	Tyr	Thr	Ala	Thr	Thr	Pro	Ala	Met	His	Arg	Lys
	35					40					45				
Ser	Phe	Lys	Glu	Gln	Glu	Pro	Ala	Ile	Phe	Ser	Ile	Ile	Gly	Phe	Ala
	50					55				60					
Val	Ala	Tyr	Ile	Ala	Ala	Leu	Ile	Ile	Asn	Arg	Ile	Ile	Lys	Thr	Arg
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Lys	Thr	His	His												

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<211> 448

<212> PRT

<213> B.fragilis

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Tyr	Lys	Val	Leu	Met	Asn	Lys	Leu	Leu	Ile	Thr	Leu	Cys	Leu	Ala	Ala
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Ser	Phe	Met	Leu	Ser	Gly	Cys	Tyr	Asn	Ser	Gly	Glu	Pro	Arg	Glu	Lys
		20					25					30			
Val	Leu	Lys	Ile	Tyr	Asn	Trp	Ala	Asp	Tyr	Ile	Gly	Asp	Gly	Val	Leu
	35						40					45			

Glu Asp Phe Gln Ala Tyr Tyr Lys Glu Gln Thr Gly Glu Asp Ile Arg
 50 55 60
 Ile Val Tyr Gln Thr Phe Asp Ile Asn Glu Ile Met Leu Thr Lys Ile
 65 70 75 80
 Glu Lys Gly His Glu Asp Phe Asp Val Val Cys Pro Ser Glu Tyr Ile
 85 90 95
 Ile Glu Arg Met Leu Lys Lys Asp Leu Leu Leu Pro Ile Asp Thr Val
 100 105 110
 Phe Pro His Ser Pro Asp Tyr Met Asn Asp Val Ser Pro Tyr Ile Arg
 115 120 125
 Glu Gln Ile Asp Lys Leu Ser Gln Pro Gly Arg Val Ala Ser His Tyr
 130 135 140
 Ala Val Cys Tyr Met Trp Gly Thr Ala Gly Ile Leu Tyr Asn Lys Ala
 145 150 155 160
 Phe Val Pro Asp Ala Asp Ala Glu Ser Trp Ser Cys Leu Trp Asp Arg
 165 170 175
 Lys Tyr Ala Gly Lys Ile Leu Met Lys Asp Ser Tyr Arg Asp Ala Tyr
 180 185 190
 Gly Thr Ala Ile Ile Tyr Ala His Ala Arg Asp Leu Ala Gly Gly Lys
 195 200 205
 Val Thr Val Glu Asp Leu Met Asn Asp Tyr Ser Pro Arg Ala Met Glu
 210 215 220
 Ile Ala Glu Lys Tyr Leu Lys Ala Met Lys Pro Asn Ile Ala Gly Trp
 225 230 235 240
 Glu Ala Asp Phe Gly Lys Glu Met Met Thr Lys Asn Lys Ala Trp Leu
 245 250 255
 Asn Met Thr Trp Ser Gly Asp Ala Lys Trp Ala Ile Glu Glu Ala Asp
 260 265 270
 Ala Val Gly Val Asp Leu Asp Tyr Val Val Pro Arg Glu Gly Ser Asn
 275 280 285
 Ile Trp Tyr Asp Gly Trp Val Ile Pro Lys Tyr Ala Gly Asn Pro Glu
 290 295 300
 Ala Ala Ser Tyr Phe Ile Asn Phe Met Cys Arg Pro Asp Ile Ala Leu
 305 310 315 320
 Arg Asn Met Glu Ala Ser Gly Tyr Val Ser Ala Val Ala Ser Pro Glu
 325 330 335
 Ile Met Glu Ala Lys Thr Asp Thr Thr Leu Thr Tyr Tyr Ser Asp Leu
 340 345 350
 Ser Tyr Phe Phe Gly Pro Gly Ala Asp Ser Leu Gln Ile Asp Lys Ile
 355 360 365
 Gln Tyr Pro Asp Arg Lys Val Val Glu Arg Cys Ala Met Ile Arg Asp
 370 375 380
 Phe Gly Asp Lys Thr Lys Asp Val Leu Glu Ile Trp Ser Arg Ile Lys
 385 390 395 400
 Gly Asp Asn Leu Gly Val Gly Ile Thr Ile Leu Ile Phe Ile Val Val
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 Gly Leu Met Asn Gly Trp Met Ile Tyr Asn Gly Ile Gln Arg Phe Asn
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 Pro Lys Arg Leu Gln Arg Arg Arg Ser Arg Arg Arg Lys Lys Gln Arg
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Met	Thr	Leu	Phe	Thr	Asn	Ile	Lys	Ser	Phe	Asp	Lys	Ser	Phe	Leu	Leu
		20						25					30		
Lys	Leu	Trp	Leu	Ser	Leu	Ile	Leu	Tyr	Gln	Leu	Ser	Val	Cys	Pro	Val
		35					40					45			
Ser	Ala	Gln	Lys	Asp	Thr	Met	Asp	Ile	Lys	Asp	Tyr	Ile	Leu	Ile	Ile
	50					55					60				
Asn	Thr	Tyr	Thr	Glu	Ser	Phe	Pro	Trp	Ser	Asn	Arg	Leu	Ile	Ser	Thr
65					70					75					80
Ala	Thr	Asn	Phe	Val	Lys	Asp	Asp	Pro	Lys	Leu	Ala	Val	Tyr	Thr	Glu
			85						90					95	
His	Met	Asn	Met	Ile	Met	Ile	Asp	Asn	Asp	Ser	Ile	Leu	Asp	Gln	Phe
			100					105					110		
Lys	Asp	Ser	Leu	Phe	Asp	Arg	Tyr	Gly	Ser	His	Arg	Pro	Arg	Met	Leu
			115				120					125			
Leu	Leu	Leu	Gly	Asn	Ser	Ser	Leu	Ile	Leu	Lys	Asp	Asp	Leu	Arg	Lys
		130				135					140				
Met	Trp	Gly	Asp	Ile	Pro	Met	Val	Leu	Cys	Ala	Gly	Lys	Asp	Tyr	Thr
145					150					155					160
Gly	Pro	Glu	His	Tyr	Tyr	Leu	Thr	Lys	Gln	Pro	Ile	Pro	Leu	Ser	Glu
			165					170						175	
Arg	Val	Pro	Leu	Ala	Glu	Leu	Ser	Gln	Ser	Cys	Asn	Leu	Thr	Tyr	Leu
			180					185					190		
Tyr	Ala	Asn	Leu	Tyr	Ile	His	Glu	Asn	Val	Glu	Met	Met	Phe	Arg	Thr
		195					200					205			
Leu	Pro	Arg	Met	Lys	Arg	Phe	Ile	Tyr	Val	Gly	Asp	Glu	Arg	Phe	Val
		210				215					220				
Asn	Gln	Val	Asn	Ser	Gln	Glu	Ile	Gln	Glu	Ile	Leu	Arg	Thr	Lys	His
225					230					235					240
Pro	Asp	Val	His	Tyr	Thr	Phe	Leu	Ser	Ser	Arg	Asp	Ile	Lys	Lys	Thr
			245						250				255		
Asn	Gln	Leu	Ile	Asp	Ser	Leu	Asn	Phe	Val	Asp	Pro	Arg	Thr	Thr	Gly
			260					265					270		
Ile	Leu	Phe	Ser	Ser	Trp	Phe	His	Lys	Arg	Gln	Phe	Ala	Gly	Asn	Met
		275					280					285			
Met	Leu	Thr	Met	Ile	Leu	Pro	Glu	Ile	Val	Ser	Thr	Val	Ser	Pro	Pro
		290				295					300				
Ile	Phe	Ala	Leu	Asn	Met	Ile	Glu	Leu	Asn	Asp	Lys	Glu	Ser	Gly	Met
305					310					315					320
Val	Gly	Gly	Tyr	Thr	Tyr	Asp	Gln	Asn	His	Phe	Asn	Glu	Lys	Leu	Ser
			325					330					335		
Asn	Met	Phe	Ser	Glu	Ile	Leu	Ser	Gly	Lys	Ser	Pro	Arg	Asp	Leu	Pro
			340					345					350		
His	Tyr	Leu	Pro	Thr	Asp	Gly	Thr	Pro	Leu	Ile	Asn	Tyr	Gln	Val	Leu
		355				360						365			
Val	Arg	Lys	Gly	Leu	Ser	Pro	Asp	Glu	Trp	Pro	Ala	His	Thr	Arg	Phe
		370				375					380				
Leu	Asn	Lys	Pro	Ile	Thr	Phe	Trp	Asp	Lys	Tyr	Lys	Tyr	Phe	Leu	Pro
385					390					395					400
Gly	Thr	Thr	Val	Cys	Ile	Ala	Leu	Leu	Val	Trp	Phe	Phe	Leu	Tyr	Arg
			405					410					415		
Ile	Arg	Thr	Leu	Thr	His	Leu	Arg	Gln	Ile	Gln	Leu	Lys	Glu	Ile	Glu
			420					425					430		
Ala	Met	Ala	Asn	Tyr	Lys	Asn	Leu	Ile	Asp	Asn	Met	Pro	Leu	Leu	Tyr
		435					440					445			
Met	Gln	Glu	Lys	Leu	Ile	Val	Asn	Glu	Gln	Gly	Val	Ala	Asp	Asp	Leu
		450				455					460				
Ile	Tyr	Leu	Asn	Val	Asn	Pro	His	Phe	Glu	Lys	His	Phe	Phe	Arg	Arg
465					470					475					480
Glu	Asp	Val	Val	Gly	Lys	Arg	Ala	Ser	Glu	Leu	Phe	Pro	Glu	Ser	Leu

					485					490					495
Pro	Glu	Phe	Leu	His	Phe	Ile	Gln	Ile	Ser	Leu	Lys	Glu	Asn	Arg	Ala
			500					505					510		
Ile	Thr	Phe	Pro	Tyr	Tyr	Phe	Lys	Lys	Ile	Asp	Arg	Phe	Tyr	Asp	Ile
		515					520					525			
Val	Leu	Lys	Gly	Ala	His	Gln	Glu	Asn	Val	Ile	Asp	Ile	Phe	Cys	Val
	530					535					540				
Asp	Ser	Thr	Glu	Leu	His	Arg	Ala	Gln	Gln	Lys	Leu	Asn	Ala	Thr	Asn
545					550					555					560
His	Lys	Leu	Ser	Met	Ala	Leu	Glu	Val	Ala	Asp	Ile	Ile	Pro	Trp	Lys
				565					570					575	
Trp	Asp	Leu	Leu	Ser	Lys	Thr	Ile	Leu	Cys	Asp	Ile	Asn	Lys	Pro	Ile
			580					585					590		
Glu	Leu	Ser	Ala	Gln	Gly	Asn	Asn	Val	Ser	Glu	Glu	Gln	Leu	Ala	Val
		595					600					605			
Pro	Asp	Ser	Gln	Tyr	Phe	Ser	Lys	Ile	Tyr	Lys	Glu	Asp	Arg	Ile	Arg
	610					615					620				
Val	Glu	Gln	Ala	Tyr	Lys	Asp	Leu	Ile	Glu	Gly	Arg	Leu	Glu	Lys	Val
625					630					635					640
Lys	Glu	Glu	Tyr	Arg	Val	Ile	Asn	Ile	Arg	Asn	His	Thr	His	Lys	Ile
			645						650					655	
Glu	Trp	Val	Glu	Ala	Gln	Ala	Ala	Val	Glu	Thr	Arg	Asp	Glu	Asn	Gly
		660						665					670		
Thr	Pro	Val	Thr	Leu	Val	Gly	Ser	Ser	Gln	Val	Ile	Thr	Gly	Arg	Lys
		675				680						685			
Lys	Met	Glu	Met	Glu	Leu	Thr	Ser	Ala	Lys	Asp	Arg	Ala	Glu	Glu	Ser
	690					695					700				
Asn	Arg	Leu	Lys	Ser	Ala	Phe	Leu	Ala	Asn	Met	Ser	His	Glu	Ile	Arg
705					710					715					720
Thr	Pro	Leu	Asn	Ala	Ile	Val	Gly	Phe	Ser	Gly	Ile	Leu	Ala	Ser	Thr
			725						730					735	
Glu	Glu	Glu	Glu	Glu	Lys	Gln	Glu	Tyr	Val	Ser	Ile	Ile	Glu	Asn	Asn
		740						745					750		
Asn	Ala	Leu	Leu	Leu	Gln	Leu	Ile	Ser	Asp	Ile	Leu	Asp	Leu	Ser	Lys
		755					760					765			
Ile	Glu	Ala	Gly	Thr	Leu	Glu	Phe	Gln	Tyr	Ser	Asp	Ile	Glu	Leu	Asn
	770					775					780				
Thr	Glu	Leu	Lys	Lys	Leu	Glu	Ser	Thr	Leu	Lys	Leu	Lys	Leu	Lys	Ser
785					790					795					800
Asp	Asp	Val	Gln	Leu	Glu	Phe	Val	Pro	Gly	Leu	Pro	Ala	Cys	Pro	Val
			805						810					815	
Cys	Thr	Glu	Lys	Asn	Arg	Leu	Ser	Gln	Leu	Ile	Ile	Asn	Leu	Val	Thr
			820					825					830		
Asn	Ala	Ile	Lys	Phe	Thr	Ser	Arg	Gly	Ser	Ile	Arg	Phe	Gly	Tyr	Glu
		835													

Arg Leu Phe Glu Ser Ile Leu Gly His Asp Tyr His Leu Ile His Ala
 965 970 975
 Trp Asp Gly Arg Glu Ala Val Glu Arg Phe Lys Arg Glu Asn Pro Gln
 980 985 990
 Ile Ile Leu Met Asp Ile Asn Met Pro Val Met Asp Gly Tyr Glu Ala
 995 1000 1005
 Thr Gln Glu Ile Arg Lys Tyr Ser Ala Lys Val Pro Ile Ile Ala Val
 1010 1015 1020
 Thr Ala Phe Ala Tyr Ala Ser Asp Glu Gln Arg Val Met Glu Asn Gly
 1025 1030 1035 1040
 Phe Asp Gly Tyr Met Pro Lys Pro Ile Asn Ala Arg Gln Leu Lys Ala
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 Gln Ile Thr Glu Ile Met Gln Lys Arg Ile Ile Leu Leu
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 Ala Thr Arg Cys Cys Cys Pro Pro Asp Ser Glu Ser Thr Ser Arg Tyr
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 Ser
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 Thr Tyr Leu Ala Val Ala Ala Val Ala Leu Gly Val Ala Ser Cys Asn
 35 40 45
 Thr Asn Lys Pro Gly Tyr Val Ile Thr Gly Thr Val Glu Gly Ala Ala
 50 55 60
 Asp Gly Asp Thr Val Phe Ile Gln Glu Arg Val Asn Arg Gln Phe Asn
 65 70 75 80
 Lys Leu Asp Thr Ala Ile Ile Ala Asn Gly Thr Phe Thr Phe Glu Gly
 85 90 95
 Ala Gln Asp Ser Val Val Asn Arg Tyr Ile Thr Tyr Ser Lys Asp Gly
 100 105 110
 Asp Gly Val Tyr Val Asp Phe Phe Leu Glu Asn Gly Lys Ile Lys Val
 115 120 125
 Asn Leu Ser Lys Asp Asp Lys Ser Ala Thr Gly Thr Pro Asn Asn Asp
 130 135 140
 Ala Tyr Gln Glu Ile Arg Asn Lys Ile Asn Ala Ile Asp Gln Lys Gln
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 Ala Ala Ile Tyr Gln Ala Met Gly Asp Ser Thr Leu Thr Asp Asp Gln

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Thr	Gly	Leu	Leu	Val	Pro	Asp	Ile	Val	Leu	Leu	Ile	Val	Leu	Phe	Gly
			20					25					30		
Arg	Ala	Leu	Leu	Leu	Val	Gly	Ser	Phe	Tyr	Gly	Gln	Tyr	Leu	Ser	Ile
		35					40					45			
Arg	Lys	Thr	Glu	Ala	Leu	Leu	Arg	Asn	Glu	Leu	Asn	Ala	Leu	Thr	Pro
	50					55					60				
Ala	Thr	Val	Met	Glu	Leu	Ala	Asp	Lys	Leu	Pro	Glu	Lys	Ser	Ser	Ser
65					70					75					80
Leu	Val	Ile	Ser	Tyr	Ile	Arg	Gln	Val	Leu	Gln	Ala	His	Glu	Ser	Pro
				85					90					95	
Ala	Gln	Ile	Gln	Arg	Leu	Leu	Ala	Asn	Phe	Glu	Ile	Ala	Ala	Asp	Lys
			100					105					110		
Asp	Leu	Ala	Ile	Ser	Lys	Thr	Leu	Thr	Lys	Leu	Gly	Pro	Ile	Leu	Gly
		115					120				125				
Leu	Met	Gly	Thr	Leu	Ile	Pro	Met	Gly	Pro	Ala	Leu	Ala	Gly	Leu	Ala
		130				135					140				
Ser	Gly	Asp	Ile	Ala	Ser	Met	Ala	Tyr	Asn	Met	Gln	Ile	Ala	Phe	Ala
145					150					155					160
Thr	Thr	Val	Val	Gly	Leu	Val	Ala	Gly	Ala	Val	Gly	Phe	Leu	Thr	Gln
				165					170					175	
Gln	Val	Lys	Gln	Arg	Trp	Tyr	Leu	Gln	Asp	Met	Thr	Asn	Leu	Glu	Phe

180 185 190
 Leu Ser Glu Leu Leu Asn Glu Lys Arg Ala Ala Arg
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 Gly Pro Val Ala Gln Asn Glu Ile Cys Tyr Ile Ser Thr Gly Gly Asp
 35 40 45
 Lys Leu Met Ala Glu Val Ile Lys Val Val Gly Thr His Val Tyr Val
 50 55 60
 Gln Val Phe Glu Ser Thr Arg Gly Leu Lys Val Gly Ala Glu Ala Glu
 65 70 75 80
 Phe Thr Gly His Met Leu Glu Val Thr Leu Gly Pro Gly Met Leu Ser
 85 90 95
 Lys Asn Tyr Asp Gly Leu Gln Asn Asp Leu Asp Lys Met Asp Gly Val
 100 105 110
 Phe Leu Lys Arg Gly Gln Tyr Thr Tyr Pro Leu Asp Lys Gly Ser Val
 115 120 125
 Trp His Phe Val Pro Leu Val Ser Val Gly Asp Lys Val Glu Ala Ser
 130 135 140
 Ala Trp Leu Gly Gln Val Asp Glu Asn Phe Gln Pro Leu Lys Ile Met
 145 150 155 160
 Val Pro Phe Thr Gln Lys Gly Val Cys Thr Val Lys Ser Ile Val Pro
 165 170 175
 Glu Gly Asp Tyr Lys Ile Glu Asp Val Val Ala Val Leu Val Asp Glu
 180 185 190
 Glu Gly Asn Thr Val Glu Val Asn Met Ile Gln Lys Trp Pro Val Lys
 195 200 205
 Arg Ala Met Thr Asn Tyr Lys Glu Lys Pro Arg Pro Phe Lys Leu Leu
 210 215 220
 Glu Thr Gly Val Arg Val Ile Asp Thr Val Asn Pro Ile Val Glu Gly
 225 230 235 240
 Gly Thr Gly Phe Ile Pro Gly Pro Phe Gly Thr Gly Lys Thr Val Leu
 245 250 255
 Gln His Ala Ile Ser Lys Gln Ala Glu Ala Asp Ile Val Ile Ile Ala
 260 265 270
 Ala Cys Gly Glu Arg Ala Asn Glu Val Val Glu Ile Phe Thr Glu Phe
 275 280 285
 Pro Glu Leu Val Asp Pro His Thr Gly Arg Lys Leu Met Glu Arg Thr
 290 295 300
 Ile Ile Ile Ala Asn Thr Ser Asn Met Pro Val Ala Ala Arg Glu Ala
 305 310 315 320
 Ser Val Tyr Thr Ala Met Thr Ile Ala Glu Tyr Tyr Arg Ala Met Gly
 325 330 335
 Leu Lys Val Leu Leu Met Ala Asp Ser Thr Ser Arg Trp Ala Gln Ala
 340 345 350
 Leu Arg Glu Met Ser Asn Arg Met Glu Glu Leu Pro Gly Pro Asp Ala
 355 360 365
 Phe Pro Met Asp Leu Ser Ser Ile Ile Ser Asn Phe Tyr Gly Arg Ala
 370 375 380
 Gly Tyr Val Lys Leu Asn Asn Gly Glu Ser Gly Ser Ile Thr Phe Ile

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385          390          395          400
Gly Thr Val Ser Pro Ala Gly Gly Asn Leu Lys Glu Pro Val Thr Glu
          405          410          415
Asn Thr Lys Lys Val Ala Arg Cys Phe Tyr Ala Leu Glu Gln Asp Arg
          420          425          430
Ala Asp Lys Lys Arg Tyr Pro Ala Val Asn Pro Ile Asp Ser Tyr Ser
          435          440          445
Lys Tyr Ile Glu Tyr Pro Glu Phe Glu Ala Tyr Ile Ala Glu His Ile
          450          455          460
Asn Asp Glu Trp Ile Gly Lys Val Asn Glu Ile Lys Thr Arg Leu Gln
          465          470          475          480
Arg Gly Lys Glu Ile Ala Glu Gln Ile Asn Ile Leu Gly Asp Asp Gly
          485          490          495
Val Pro Val Glu Tyr His Val Ile Phe Trp Lys Ser Glu Leu Ile Asp
          500          505          510
Phe Val Ile Leu Gln Gln Asp Ala Phe Asp Glu Ile Asp Ala Val Thr
          515          520          525
Pro Met Glu Arg Gln Glu Ala Ile Leu Asn Met Val Ile Asp Ile Cys
          530          535          540
His Thr Glu Phe Glu Phe Asp Asn Phe Asn Glu Val Met Asp Tyr Phe
          545          550          555          560
Lys Lys Met Ile Asn Ile Cys Lys Gln Met Asn Tyr Ser Lys Phe Lys
          565          570          575
Ser Glu Gln Tyr Glu Gly Phe Gln Lys Gln Leu Glu Glu Leu Val Ala
          580          585          590
Glu Arg Ser Val Lys
          595

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<210> 9879

<211> 198

<212> PRT

<213> B.fragilis

<400> 9879

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Arg Leu Ser Ala Tyr His Leu Tyr Ser Asp Arg Pro Phe Asn Asp Pro
1          5          10          15
Phe Asn His Arg Asn Gln His Phe Met Asn Ile Asp Phe Ile Thr
          20          25          30
Ala Thr Val Leu Asp Gly Ala Phe Ala Ala Val Ala Ala Ile Gly Phe
          35          40          45
Ala Ile Ile Ser Asn Pro Pro Arg Lys Ala Ile Leu Ile Ser Ala Phe
          50          55          60
Leu Ala Ala Val Gly His Gly Leu Arg Tyr Phe Leu Met His Ala His
          65          70          75          80
Leu Phe Thr Met Asp Ile Ala Thr Ala Ser Phe Phe Ala Ala Val Ser
          85          90          95
Ile Gly Leu Leu Ala Ile Pro Phe Ala Lys Ala Ile His Cys Pro Ala
          100          105          110
Glu Val Phe Ser Phe Pro Ser Leu Leu Pro Met Ile Pro Gly Met Phe
          115          120          125
Ala Tyr Lys Ser Ile Leu Ala Leu Thr Lys Phe Met Gln Thr Lys Asp
          130          135          140
Glu Thr Asp Ser Leu Arg Tyr Leu Val Asp Phe Cys His Asn Gly Ser
          145          150          155          160
Thr Thr Ile Phe Val Leu Phe Ala Leu Val Val Gly Ala Ala Val Pro
          165          170          175
Val Phe Ile Phe His Arg Gln Ser Phe Thr Ala Thr Arg Leu Leu Lys
          180          185          190
Lys Leu Val Lys Lys Gly

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195

<210> 9880
 <211> 296
 <212> PRT
 <213> B.fragilis

<400> 9880

Ser	Ile	Pro	Ala	Ser	Ser	Val	Gly	Arg	Asn	Val	Ile	Leu	Lys	Gly	Cys
1				5					10					15	
Val	Met	Ser	Lys	Tyr	Tyr	Tyr	Leu	Val	Ala	Gly	Leu	Pro	Glu	Leu	Thr
			20					25					30		
Leu	Glu	Asp	Ser	Lys	Leu	Ser	Tyr	Thr	Val	Ala	Asp	Phe	Lys	Thr	Glu
		35					40					45			
Ile	Tyr	Thr	Gly	Leu	Ser	Val	Ser	Asp	Gln	Arg	Leu	Ile	Asp	Leu	Phe
	50				55						60				
Tyr	Leu	Lys	Phe	Asp	Asn	Ala	Asn	Val	Leu	Lys	Phe	Leu	Lys	Asp	Lys
65					70					75					80
Glu	Ala	Ala	Ile	Asp	Thr	Arg	Gly	Asn	Phe	Ser	Ala	Glu	Glu	Leu	Ala
				85					90					95	
Glu	Tyr	Ile	Ser	Thr	Leu	Lys	Glu	Gly	Gly	Glu	Val	Ser	Ala	Lys	Glu
			100					105						110	
Phe	Pro	Ala	Tyr	Leu	Ala	Thr	Phe	Ile	Ser	Ala	Tyr	Phe	Asn	Thr	Pro
			115				120					125			
Ala	Glu	Asn	Ala	Val	Leu	Leu	Gly	Asp	His	Leu	Ala	Ala	Leu	Tyr	Tyr
			130				135					140			
Asp	Tyr	Ala	Met	Lys	Cys	Gly	Asn	Lys	Phe	Val	Ala	Ser	Trp	Phe	Glu
145					150					155					160
Phe	Asn	Leu	Thr	Ile	Asn	Asn	Ile	Leu	Val	Ala	Leu	Thr	Ala	Arg	Lys
				165					170					175	
Tyr	Lys	Trp	Asp	Ile	Ala	Cys	Asn	Ile	Val	Gly	Asp	Thr	Glu	Ile	Cys
			180					185						190	
Glu	Ala	Leu	Arg	Thr	Ser	Gly	Ala	Arg	Asp	Phe	Gly	Leu	Ser	Gly	Glu
			195				200					205			
Val	Asp	Phe	Leu	Asp	Gln	Leu	Val	Lys	Ile	Ser	Glu	Ile	Thr	Glu	Leu
			210				215					220			
Val	Glu	Arg	Glu	Lys	Lys	Leu	Asp	Ala	Leu	Arg	Trp	Asn	Trp	Met	Glu
225					230					235					240
Asp	Ala	Ile	Phe	Phe	Asp	Tyr	Phe	Thr	Ile	Glu	Arg	Ile	Phe	Ala	Phe
				245					250					255	
Leu	Leu	Lys	Leu	Glu	Met	Ile	Glu	Arg	Trp	Ile	Ser	Leu	Asp	Lys	Glu
			260					265					270		
Arg	Gly	Asn	Gln	Leu	Phe	Arg	Ser	Ile	Ile	Glu	Ser	Leu	Lys	Asn	Glu
			275				280					285			
Val	Gln	Ile	Pro	Ala	Glu	Phe	Arg								
			290				295								

<210> 9881
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 9881

Asp	Lys	Ala	Ala	Glu	Leu	Thr	Arg	Leu	Ala	Cys	Glu	Ala	Ala	Lys	Arg
1				5					10					15	
His	Gly	Val	Thr	Val	Ser	Val	Asp	Leu	Asn	Phe	Arg	Lys	Lys	Leu	Trp
			20					25					30		
Thr	Lys	Glu	Lys	Ala	Gln	Ser	Ile	Met	Lys	Pro	Leu	Met	Lys	Tyr	Val
			35				40					45			

Asp Val Cys Ile Gly Asn Glu Glu Asp Ala Glu Leu Cys Leu Gly Phe
 50 55 60
 Lys Pro Asp Ala Asp Val Glu Gly Gly His Thr Asp Ala Glu Gly Tyr
 65 70 75 80
 Lys Gly Ile Phe Arg Gln Met Met Asp Glu Phe Gly Phe Ser Tyr Val
 85 90 95
 Ile Ser Thr Leu Arg Glu Ser Phe Ser Ala Ser His Asn Gly Trp Lys
 100 105 110
 Ala Met Ile Tyr Asn Gly Glu Glu Phe Tyr Val Ser Arg His Tyr Asp
 115 120 125
 Ile Asp Pro Ile Ile Asp Arg Val Gly Gly Gly Asp Ser Phe Ser Gly
 130 135 140
 Gly Val Ile His Gly Leu Leu Thr Lys Arg Thr Gln Gly Glu Ala Leu
 145 150 155 160
 Glu Phe Ala Val Ala Ala Ser Ala Leu Lys His Thr Ile Asn Gly Asp
 165 170 175
 Phe Asn Leu Val Ser Val Ala Glu Val Glu Ala Leu Val Gly Gly Asp
 180 185 190
 Ala Ser Gly Arg Val Gln Arg
 195

<210> 9882

<211> 468

<212> PRT

<213> B.fragilis

<400> 9882

Met His Glu Ala Val Ser Val Asn Leu Tyr Ile Val Asp Ala Lys Leu
 1 5 10 15
 Pro Phe Phe Ser Leu Ser Phe Thr Ile Phe Ala Pro Gln Asn Phe Lys
 20 25 30
 Asn Tyr Ser Met Ile Asn Glu Glu Lys Ile His Lys Ser Thr Ser Gly
 35 40 45
 Trp Trp Ala Leu Ser Pro Leu Phe Val Phe Leu Cys Leu Tyr Leu Val
 50 55 60
 Thr Ser Ile Leu Val Asn Asp Phe Tyr Lys Val Pro Ile Thr Val Ala
 65 70 75 80
 Phe Leu Ile Ser Ser Cys Tyr Ala Ile Ala Ile Thr Arg Gly Leu Asn
 85 90 95
 Leu Glu Gln Arg Val Tyr Gln Phe Ser Val Gly Ala Ser Asn Lys Asn
 100 105 110
 Ile Met Leu Met Val Trp Ile Phe Ile Leu Ala Gly Ala Phe Ala Gln
 115 120 125
 Ser Ala Lys Gln Met Gly Ala Ile Asp Ala Thr Val Asn Leu Thr Leu
 130 135 140
 His Ile Leu Pro Asp Asn Leu Leu Leu Ala Gly Ile Phe Leu Ala Ser
 145 150 155 160
 Cys Phe Ile Ser Leu Ser Ile Gly Thr Ser Val Gly Thr Ile Val Ala
 165 170 175
 Leu Thr Pro Val Ala Ile Gly Leu Ala Glu Lys Thr Gly Ile Asp Leu
 180 185 190
 Pro Phe Met Val Ala Val Val Val Gly Gly Ser Phe Phe Gly Asp Asn
 195 200 205
 Leu Ser Phe Ile Ser Asp Thr Thr Ile Ala Ser Thr Lys Thr Gln Gly
 210 215 220
 Cys Val Met Arg Asp Lys Phe Arg Val Asn Ser Met Ile Val Val Pro
 225 230 235 240
 Ala Ala Leu Val Val Leu Gly Ile Tyr Ile Phe Gln Gly Leu Ser Val
 245 250 255

Ser Ala Pro Pro Leu Val Gln Glu Ile Glu Trp Val Lys Val Ile Pro
 260 265 270
 Tyr Leu Ile Val Leu Gly Thr Ala Ile Ala Gly Met Asn Val Met Leu
 275 280 285
 Val Leu Ile Ile Gly Ile Phe Thr Ser Gly Val Ile Gly Ile Ala Thr
 290 295 300
 Gly Ser Leu Gly Phe Phe Asp Trp Phe Gly Ala Met Gly Thr Gly Ile
 305 310 315 320
 Thr Gly Met Gly Glu Leu Ile Ile Ile Thr Leu Leu Ala Gly Gly Met
 325 330 335
 Leu Glu Thr Ile Arg Tyr Asn Gly Gly Ile Asp Phe Ile Ile Arg Lys
 340 345 350
 Leu Thr Arg His Val Asn Gly Lys Arg Gly Ala Glu Leu Ser Ile Ala
 355 360 365
 Ala Leu Val Ser Ile Ala Asn Leu Cys Thr Ala Asn Asn Thr Ile Ala
 370 375 380
 Ile Ile Thr Thr Gly Pro Ile Ala Lys Asp Ile Ala Lys Lys Phe Gln
 385 390 395 400
 Leu Asp Arg Arg Lys Thr Ala Ser Ile Leu Asp Thr Phe Ser Cys Leu
 405 410 415
 Ile Gln Gly Ile Ile Pro Tyr Gly Ala Gln Met Leu Ile Ala Ala Gly
 420 425 430
 Leu Ala Gln Ile Ser Pro Leu Ser Ile Ile Gly Asn Leu Tyr Tyr Pro
 435 440 445
 Phe Thr Met Gly Ile Cys Ala Leu Leu Ala Ile Leu Phe Arg Tyr Pro
 450 455 460
 Arg Lys Tyr Ser
 465

<210> 9883

<211> 304

<212> PRT

<213> B.fragilis

<400> 9883

Ser Ser Met Ala His Ser His Glu His His His Glu His Val His Glu
 1 5 10 15
 Leu Thr Ser Leu Asn Lys Ser Phe Ile Ile Gly Ile Thr Leu Asn Ile
 20 25 30
 Leu Phe Val Leu Val Glu Phe Gly Ile Gly Phe Tyr Tyr Asp Ser Leu
 35 40 45
 Gly Leu Leu Ser Asp Ala Gly His Asn Leu Gly Asp Val Ala Ser Leu
 50 55 60
 Val Leu Ala Met Leu Ala Phe Arg Leu Ala Lys Val His Pro Asn Ser
 65 70 75 80
 Arg Tyr Thr Tyr Gly Tyr Lys Lys Ser Thr Val Leu Val Ser Leu Leu
 85 90 95
 Asn Ala Val Ile Leu Leu Val Ala Val Gly Ile Ile Ile Thr Glu Ser
 100 105 110
 Ile Glu Lys Leu Phe His Pro Val Pro Val Glu Gly Ala Ala Ile Ala
 115 120 125
 Trp Thr Ala Gly Val Gly Val Val Ile Asn Ala Val Thr Ala Arg Leu
 130 135 140
 Phe Met Lys Asp Lys Glu Lys Asp Leu Asn Val Lys Gly Ala Tyr Leu
 145 150 155 160
 His Met Ala Ala Asp Thr Leu Val Ser Val Gly Val Val Ile Ser Gly
 165 170 175
 Ile Ile Ile Met Tyr Thr Gly Trp Thr Leu Val Asp Pro Ile Ile Gly
 180 185 190

Leu Val Ile Ala Val Ile Ile Val Ile Ser Thr Trp Ser Leu Leu His
 195 200 205
 Asp Ser Leu Arg Leu Ser Leu Asp Gly Val Pro Val Gly Ile Asp Ser
 210 215 220
 Glu Lys Ile Gly Arg Val Ile Leu Glu Gln Pro Gly Val Glu Ser Tyr
 225 230 235 240
 His His Leu His Ile Trp Ala Leu Ser Thr Thr Glu Thr Ala Leu Thr
 245 250 255
 Ala His Ile Val Ile Gly Asp Leu Arg Arg Met Glu Glu Val Lys Arg
 260 265 270
 Glu Val Lys His Glu Leu Glu His Val Gly Ile Thr His Ala Thr Leu
 275 280 285
 Glu Phe Glu Tyr Lys Gly Ala Cys Cys Glu Gly Glu Asp Cys Ile Ser
 290 295 300

<210> 9884
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 9884
 Phe Ile Tyr Tyr Ser Pro Gln Cys Cys Glu Glu Glu Trp Leu Tyr Pro
 1 5 10 15
 Phe Leu Lys Tyr Trp Tyr Leu Ala Tyr Cys Pro Leu Ser Val Gln Trp
 20 25 30
 Gln Ala Thr Gly Val Leu Tyr Ala Asn Gly Lys Asn Ser Met Gly Ile
 35 40 45
 Arg Leu Lys Asp Leu Ser Lys Leu Gly Tyr Arg Asp Asn Val Ala Arg
 50 55 60
 Ser Leu Ala Cys Tyr Ser Ser Arg Gln Ile Leu
 65 70 75

<210> 9885
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9885
 Ser Thr Arg Tyr Pro Pro Ile Ala Gly Pro Lys Glu Thr Glu Ala Ala
 1 5 10 15
 Glu Ala Met Asp Gln Asn Pro Asn Ala Val Pro Arg Cys Ser Gly Gly
 20 25 30
 Asn Thr Ser Leu Thr Ile Ala Met Pro Thr Gly Arg Ser Met Pro His
 35 40 45
 Pro Lys Pro Ser Ile Thr Arg Gln Lys Ile Ser Ser Ser Met Val Asp
 50 55 60
 Glu Leu Pro His Met Lys Glu Pro Ala Val Asn Thr Ser Arg Asp Lys
 65 70 75 80
 Lys Tyr Ile Phe Leu
 85

<210> 9886
 <211> 865
 <212> PRT
 <213> B.fragilis

<400> 9886
 Val Phe Ile His Gln Gln Val Asn Asn Asn Ile Met Lys Ile Lys Val
 1 5 10 15

Ser	Asn	Val	Asn	Thr	Pro	Asn	Trp	Lys	Glu	Val	Thr	Val	Lys	Ser	Arg
			20					25					30		
Val	Pro	Ala	Glu	Leu	Glu	Lys	Leu	Ser	Glu	Leu	Ala	Arg	Asn	Ile	Trp
		35					40					45			
Trp	Ala	Trp	Asn	Tyr	Glu	Ala	Thr	Glu	Leu	Phe	Arg	Asp	Leu	Asp	Pro
	50					55					60				
Thr	Leu	Trp	Lys	Glu	Ala	Gly	Gln	Asn	Pro	Val	Leu	Leu	Leu	Glu	Arg
65					70					75					80
Met	Ser	Tyr	Glu	Lys	Leu	Glu	Ala	Leu	Ser	Lys	Asp	Lys	Val	Ile	Leu
				85					90					95	
Lys	Arg	Met	Asn	Asp	Val	Tyr	Ala	Lys	Phe	Arg	Asp	Tyr	Met	Asp	Val
			100					105					110		
Thr	Pro	Asp	Asn	Lys	Arg	Pro	Ser	Val	Ala	Tyr	Phe	Ser	Met	Glu	Tyr
		115					120					125			
Gly	Leu	Asn	His	Val	Leu	Lys	Ile	Tyr	Ser	Gly	Gly	Leu	Gly	Val	Leu
	130					135					140				
Ala	Gly	Asp	Tyr	Leu	Lys	Glu	Ala	Ser	Asp	Ser	Asn	Val	Asp	Leu	Cys
145					150					155					160
Ala	Val	Gly	Phe	Leu	Tyr	Arg	Tyr	Gly	Tyr	Phe	Thr	Gln	Thr	Leu	Ser
			165					170						175	
Met	Asp	Gly	Gln	Gln	Ile	Ala	Asn	Tyr	Glu	Ala	Gln	Asn	Phe	Gly	Gln
			180					185					190		
Leu	Pro	Ile	Asp	Arg	Val	Thr	Asp	Ala	Asp	Gly	Lys	Pro	Leu	Val	Val
	195						200					205			
Asp	Val	Pro	Tyr	Met	Asp	Tyr	Tyr	Val	His	Ala	Asn	Val	Trp	Arg	Val
	210					215					220				
Asn	Val	Gly	Arg	Val	Ser	Leu	Tyr	Leu	Leu	Asp	Thr	Asp	Asn	Glu	Met
225					230					235					240
Asn	Ser	Glu	Phe	Asp	Arg	Pro	Ile	Thr	His	Gln	Leu	Tyr	Gly	Gly	Asp
			245					250					255		
Trp	Glu	Asn	Arg	Leu	Lys	Gln	Glu	Ile	Leu	Leu	Gly	Ile	Gly	Gly	Met
		260						265					270		
Leu	Thr	Leu	Lys	Ala	Leu	Gly	Ile	Lys	Lys	Asp	Ile	Tyr	His	Cys	Asn
	275						280					285			
Glu	Gly	His	Ala	Ala	Leu	Ile	Asn	Val	Gln	Arg	Ile	Cys	Asp	Tyr	Val
	290					295					300				
Ala	Thr	Gly	Leu	Thr	Phe	Asn	Gln	Ala	Ile	Glu	Leu	Val	Arg	Ala	Ser
305					310					315					320
Ser	Leu	Tyr	Thr	Val	His	Thr	Pro	Val	Pro	Ala	Gly	His	Asp	Tyr	Phe
			325					330					335		
Asp	Glu	Gly	Leu	Phe	Gly	Lys	Tyr	Met	Gly	Gly	Tyr	Pro	Val	Lys	Met
		340						345				350			
Gly	Ile	Ser	Trp	Asp	Asp	Leu	Met	Asp	Leu	Gly	Arg	Asn	Asn	Pro	Gly
	355					360						365			
Asp	Lys	Gly	Glu	Arg	Phe	Cys	Met	Ser	Val	Phe	Ala	Cys	Asn	Thr	Ser
	370					375					380				
Gln	Glu	Val	Asn	Gly	Val	Ser	Trp	Leu	His	Gly	Lys	Val	Ser	Gln	Glu
385					390					395					400
Met	Phe	Ser	Ser	Ile	Trp	Lys	Gly	Tyr	Phe	Pro	Glu	Glu	Ser	His	Val
			405						410					415	
Gly	Tyr	Val	Thr	Asn	Gly	Val	His	Phe	Pro	Thr	Trp	Ser	Ala	Thr	Glu
		420						425					430		
Trp	Lys	Gln	Leu	Tyr	Ala	Lys	Tyr	Phe	Asn	Glu	Asn	Phe	Leu	Tyr	Asp
		435					440					445			
Gln	Ser	Asn	Pro	Lys	Ile	Trp	Glu	Ala	Ile	Tyr	Asn	Val	Pro	Asp	Glu
	450					455					460				
Glu	Ile	Trp	Lys	Thr	Arg	Val	Thr	Met	Lys	Asn	Lys	Leu	Val	Asp	Tyr
465					470					475					480
Ile	Arg	Lys	Gln	Phe	Arg	Glu	Thr	Trp	Leu	Lys	Asn	Gln	Gly	Asp	Pro

Ile Ala Ile Thr Leu Leu Gly Thr Met Leu Ile Ser Phe Ser Ala Cys

	20		25		30
Asn Gly Ile Leu Ser Ser Leu Tyr Asp Glu Pro Glu Thr Ala Lys Asp					
35			40		45
Phe Gly Phe Ile Thr Ile Asp His Ala Asn His Ser Gly Thr Val Arg					
50			55		60
Val Asp Ala Thr Gln Tyr Thr Lys Trp Asn Tyr Ile Asn Leu His Thr					
65			70		75
Leu Gln Ile Asp Ser Ala Lys Val Thr Ala Glu Gly Ala Asp Asp Pro					
85			90		95
Asp Thr Trp Asp Leu Ala Ile His Arg Tyr Asp Val Lys Thr Asn Gly					
100			105		110
Gly Glu Val Leu Glu Thr Asp Tyr Gln Ser Leu Ser Ala Leu Lys Asn					
115			120		125
Ala Gly Ser Met Pro Gln Gly Ile Phe Val Ala Asp Glu Trp Thr Thr					
130			135		140
Asn Lys Ile Ala Val Asp Val Ser His Met Met Glu Asp Asn Gly Tyr					
145			150		155
Leu Ile Tyr Ala Pro Ser Asp Phe Asn Pro Glu Leu Ser Lys Trp Leu					
165			170		175
Asn Val Asp Thr Ser Glu Met Pro Pro Ile Tyr Thr Pro Ser Asn Lys					
180			185		190
Val Tyr Leu Leu Arg Met Lys Asp Gly Thr Met Ala Ala Ile Arg Leu					
195			200		205
Val Ser Tyr Met Asn Ala Ala Gly Ile Lys Gly Tyr Met Thr Phe Asp					
210			215		220
Tyr Ile Tyr Pro Tyr Glu Pro					
225			230		

<210> 9888

<211> 356

<212> PRT

<213> B.fragilis

<400> 9888

Thr Asn Lys Gln Glu Asn Asp Met Glu Thr Lys Lys Leu Lys Lys Asn					
1	5		10		15
Ala Leu Phe Asn Pro Glu Gly Asp Thr Glu Thr Arg Leu Arg Lys Met					
20			25		30
Ile Gly Gly Asn Thr Thr Asn Leu Asn Asp Phe Asn Asn Met Arg Tyr					
35			40		45
Lys Trp Val Ser Asp Trp Tyr Arg Gln Ala Met Asn Asn Phe Trp Ile					
50			55		60
Pro Glu Glu Ile Asn Leu Thr Gln Asp Thr Lys Asp Tyr Pro His Leu					
65			70		75
Thr Pro Ala Glu Arg Thr Ala Tyr Asp Lys Ile Leu Ser Phe Leu Val					
85			90		95
Phe Leu Asp Ser Leu Gln Ser Asn Asn Leu Pro Thr Leu Ser Glu Tyr					
100			105		110
Ile Thr Ala Asn Glu Val Asn Leu Cys Leu His Ile Gln Ala Phe Gln					
115			120		125
Glu Cys Val His Ser Gln Ser Tyr Ser Tyr Met Leu Asp Ser Ile Cys					
130			135		140
Ser Pro Glu Glu Arg Asn Asp Ile Leu Tyr Gln Trp Lys Thr Asp Glu					
145			150		155
His Leu Leu Arg Arg Asn Thr Phe Ile Gly Asn Cys Tyr Asn Glu Phe					
165			170		175
Gln Glu Asn Arg Asp Gly Phe Ala Leu Ile Lys Thr Leu Ile Ala Asn					
180			185		190
Tyr Ile Leu Glu Gly Ile Tyr Phe Tyr Ser Gly Phe Met Phe Phe Tyr					

195	200	205
Asn Leu Ser Arg	Asn Gly Lys Met Ser Gly Ser	Ala Gln Glu Ile Arg
210	215	220
Tyr Ile Asn Arg Asp	Glu Asn Thr His Leu Trp	Leu Phe Arg Asn Ile
225	230	235
Ile Leu Glu Leu Lys	Lys Glu Glu Pro Glu Leu Phe Thr	Pro Asp Lys
245	250	255
Val Lys Val Tyr Glu	Glu Met Met Arg Glu Gly Val Lys	Gln Glu Ile
260	265	270
Ala Trp Gly Gln Tyr	Val Ile Gly Asp Gln Ile Gln Gly	Leu Asn Arg
275	280	285
Gln Met Ile Ser Asp	Tyr Ile His Phe Leu Gly Asn Leu	Arg Trp Ser
290	295	300
Ser Leu Gly Tyr Thr	Pro Leu Tyr Glu Asp Asn Arg	Lys Glu Pro Glu
305	310	315
Ser Met His Trp Val	Ser Gln Tyr Ser Asn Ala Asn Met	Val Lys Thr
325	330	335
Asp Phe Phe Glu Ala	Lys Ser Thr Ala Tyr Ala Lys Ser	Thr Ala Leu
340	345	350
Glu Asp Asp Leu		
355		

<210> 9889
 <211> 403
 <212> PRT
 <213> B.fragilis

<400> 9889

Ser His Tyr Lys	Asn Asn Lys Asn Met Arg Gln Thr	Ile Ala Ser Lys
1	5	10
Thr Pro Arg Ile	Glu Val Val Asp Ala Leu Arg Gly	Phe Ala Val Met
20	25	30
Ala Ile Leu Leu	Val His Asn Leu Glu His Phe Ile	Phe Pro Val Tyr
35	40	45
Pro Ala Ala Ala	Ser Gln Pro Gly Trp Leu Asn Ile	Leu Asp Glu Gly
50	55	60
Val Phe Ser Val	Thr Phe Ser Leu Phe Ala Gly Lys	Ala Tyr Ala Ile
65	70	75
Phe Ala Leu Leu	Phe Gly Leu Thr Phe Tyr Ile Gln Tyr	Thr Asn Gln
85	90	95
Gln Lys Lys Gly	Lys Asp Phe Gly Tyr Arg Phe Leu Trp	Arg Leu Leu
100	105	110
Leu Leu Gly Gly	Phe Ala Thr Leu Asn Ala Ala Phe Phe	Pro Ala Gly
115	120	125
Asp Val Leu Leu	Leu Phe Cys Val Val Gly Ile Phe Leu	Phe Ile Val
130	135	140
Arg Lys Trp Ser	Asp Arg Thr Val Phe Ile Leu Ala Ile	Phe Leu Leu
145	150	155
Leu Gln Pro Val	Glu Trp Tyr His Tyr Val Met Asn Leu	Phe Asn Pro
165	170	175
Ala His Ser Leu	Pro Asp Leu Gly Val Gly Gln Met Tyr	Gly Glu Val
180	185	190
Ala Glu Tyr Thr	Lys Glu Gly Asp Phe Trp Lys Phe Ile	Trp Gly Asn
195	200	205
Val Thr Leu Gly	Gln Lys Ala Ser Leu Phe Trp Ala Ile	Gly Ala Gly
210	215	220
Arg Phe Leu Gln	Thr Ala Gly Leu Phe Leu Leu Gly Met	Leu Ile Gly
225	230	235
Arg Lys Gln Leu	Phe Val Ala Ser Glu Ala Thr Ile Arg	Phe Trp Val

				245					250				255				
Lys	Ala	Leu	Ile	Trp	Ser	Ala	Val	Leu	Phe	Gly	Pro	Leu	Tyr	Gln	Leu		
			260						265				270				
Lys	Val	Gln	Leu	Met	Asp	Ala	Gly	Gln	Pro	Asp	Met	Ile	Arg	Gln	Thr		
		275						280				285					
Val	Gly	Val	Val	Met	Asp	Met	Trp	Gln	Lys	Phe	Ala	Phe	Thr	Ile	Val		
	290						295				300						
Leu	Val	Ala	Ser	Phe	Val	Leu	Leu	Tyr	Gln	Thr	Glu	Lys	Phe	Arg	Lys		
305					310					315					320		
Leu	Thr	Ala	Asp	Leu	Arg	Phe	Tyr	Gly	Lys	Met	Ser	Leu	Thr	Asn	Tyr		
				325					330					335			
Ile	Ser	Gln	Ser	Ile	Ala	Gly	Ala	Ile	Ile	Tyr	Phe	Pro	Phe	Ala	Leu		
		340						345				350					
Tyr	Leu	Ala	Pro	Tyr	Cys	Gly	Tyr	Thr	Val	Ser	Leu	Leu	Ile	Gly	Phe		
	355						360				365						
Ala	Phe	Phe	Leu	Leu	Gln	Val	Arg	Phe	Cys	Lys	Trp	Trp	Leu	Lys	Ala		
	370					375					380						
His	Lys	Gln	Gly	Pro	Leu	Glu	Ser	Ile	Trp	His	Lys	Leu	Thr	Trp	Ile		
385					390				395						400		
Arg	Ser	Glu															

<210> 9890

<211> 444

<212> PRT

<213> B.fragilis

<400> 9890

Ile	Val	Asn	Asn	Asn	Met	Ala	Thr	Lys	Ala	Phe	Gln	Lys	Ile	Tyr	Thr		
1				5					10					15			
Lys	Ile	Thr	Gln	Ile	Thr	Lys	Ala	Thr	Cys	Ser	Leu	Lys	Ala	Thr	Gly		
			20					25				30					
Val	Gly	Tyr	Asp	Glu	Leu	Ala	Thr	Val	Asn	Gly	Lys	Leu	Ala	Gln	Val		
	35					40					45						
Val	Lys	Ile	Ala	Gly	Asp	Glu	Val	Thr	Leu	Gln	Val	Phe	Glu	Gly	Thr		
	50				55					60							
Glu	Gly	Ile	Pro	Thr	Asn	Ala	Glu	Val	Val	Phe	Leu	Gly	Lys	Ser	Pro		
65					70				75						80		
Thr	Leu	Lys	Val	Ser	Glu	Gln	Leu	Ala	Gly	Arg	Phe	Phe	Asn	Ala	Phe		
				85					90					95			
Gly	Asp	Pro	Ile	Asp	Gly	Gly	Pro	Glu	Ile	Glu	Gly	Gln	Glu	Val	Pro		
	100							105					110				
Ile	Gly	Gly	Pro	Ser	Val	Asn	Pro	Val	Arg	Arg	Lys	Gln	Pro	Ser	Glu		
	115						120					125					
Leu	Ile	Ala	Thr	Gly	Ile	Ala	Gly	Ile	Asp	Leu	Asn	Asn	Thr	Leu	Val		
	130					135					140						
Ser	Gly	Gln	Lys	Ile	Pro	Phe	Phe	Ala	Asp	Pro	Asp	Gln	Pro	Phe	Asn		
145					150				155					160			
Gln	Val	Met	Ala	Asn	Val	Ala	Leu	Arg	Ala	Glu	Thr	Asp	Lys	Ile	Ile		
		165						170						175			
Leu	Gly	Gly	Met	Gly	Met	Thr	Asn	Asp	Tyr	Leu	Tyr	Phe	Lys	Asn			
	180						185					190					
Val	Phe	Ser	Asn	Ala	Gly	Ala	Leu	Asp	Arg	Ile	Val	Ser	Phe	Val	Asn		
	195						200					205					
Thr	Thr	Glu	Asn	Pro	Pro	Val	Glu	Arg	Leu	Leu	Val	Pro	Asp	Met	Ala		
	210					215					220						
Leu	Thr	Ala	Ala	Glu	Tyr	Phe	Ala	Val	Gln	His	Asn	Gln	Lys	Val	Leu		
225				230					235						240		
Val	Leu	Leu	Thr	Asp	Met	Thr	Ser	Tyr	Ala	Asp	Ala	Leu	Ala	Ile	Val		

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<210> 9891
<211> 405
<212> PRT
<213> B.fragilis
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<400> 9891																
Gln	Leu	Ile	Lys	Leu	Thr	Pro	Asn	Lys	Phe	Arg	Val	Arg	Thr	Gln	Arg	
1				5					10					15		
Tyr	Val	Asn	Phe	Gln	Asp	Tyr	Lys	Asn	Cys	Tyr	Ile	Phe	Val	Ser	Ile	
			20					25					30			
Glu	Ile	Lys	Leu	Leu	Val	Cys	Pro	Gly	Thr	Lys	Pro	His	Thr	Asn	Lys	
		35					40					45				
Gly	Glu	Arg	Met	Asn	Lys	Leu	Pro	Glu	Arg	Ile	Arg	Ile	Lys	Asp	Ile	
	50					55					60					
Ala	Arg	Leu	Ala	Asn	Val	Ser	Val	Gly	Thr	Val	Asp	Arg	Val	Leu	His	
65					70					75					80	
Gly	Arg	Ser	Gly	Val	Ser	Glu	Ala	Ser	Arg	Lys	Arg	Val	Glu	Glu	Ile	
				85					90					95		
Leu	Lys	Gln	Leu	Asp	Tyr	Gln	Pro	Asn	Met	Tyr	Ala	Ser	Ala	Leu	Ala	
			100					105					110			
Ser	Asn	Lys	Lys	Tyr	Thr	Phe	Ala	Cys	Leu	Leu	Pro	Lys	His	Leu	Glu	
		115					120					125				
Gly	Glu	Tyr	Trp	Thr	Asp	Val	Gln	Lys	Gly	Ile	Arg	Glu	Ala	Val	Thr	
	130					135					140					
Thr	Tyr	Ser	Asp	Phe	Asn	Ile	Ser	Ala	Asn	Ile	Thr	His	Tyr	Asp	Pro	
145					150					155					160	
Tyr	Asp	Tyr	Asn	Ser	Phe	Val	Ala	Thr	Ser	Gln	Ala	Val	Ile	Glu	Glu	
				165					170					175		
Gln	Pro	Asp	Gly	Val	Met	Phe	Ala	Pro	Thr	Val	Pro	Gln	Tyr	Thr	Lys	
			180					185					190			
Gly	Phe	Thr	Asp	Ala	Leu	Asn	Glu	Leu	Gly	Ile	Pro	Tyr	Ile	Tyr	Ile	
		195					200				205					
Asp	Ser	Gln	Ile	Lys	Asp	Ala	Pro	Pro	Leu	Ala	Phe	Phe	Gly	Gln	Asn	

210	215	220
Ser His Gln Ser Gly Tyr Phe Ala Ala Arg Met Leu Met Leu Leu Ala		
225	230	235
Val Asn Asp Arg Glu Ile Val Ile Phe Arg Lys Ile His Glu Gly Val		240
	245	250
Ile Gly Ser Asn Gln Gln Glu Ser Arg Glu Ile Gly Phe Arg Gln Tyr		255
	260	265
Met Gln Glu His His Pro Ala Cys Asn Ile Leu Glu Leu Asn Leu His		270
	275	280
Ala Asp Leu Asn Ile Glu Asp Ser Arg Met Leu Asp Asp Phe Phe Arg		285
	290	295
Glu His Pro Asp Val Lys His Gly Ile Thr Phe Asn Ser Lys Val Tyr		300
305	310	315
Ile Ile Gly Glu Tyr Leu Gln Gln Arg Arg Lys Ser Asp Phe Ser Leu		320
	325	330
Ile Gly Tyr Asp Leu Leu Glu Arg Asn Val Thr Cys Leu Lys Glu Gly		335
	340	345
Thr Val Ser Phe Leu Ile Ala Gln Gln Pro Glu Leu Gln Gly Phe Asn		350
	355	360
Ser Ile Lys Thr Leu Cys Asp His Leu Ile Phe Arg Lys Glu Val Ala		365
	370	375
Cys Thr Asn Tyr Met Pro Ile Asp Leu Leu Thr Lys Glu Asn Ile Asp		380
385	390	395
Tyr Tyr His Ser Lys		400
	405	

<210> 9892

<211> 599

<212> PRT

<213> B.fragilis

<400> 9892

Arg Gln Ile Lys Ile Asn Met Gln Arg Leu Leu Lys Ser Ala Tyr Cys	
1	5
Phe Phe Ala Ala Leu Leu Leu Thr Thr Ala Ala Ala Ala Gln His Lys	10
	15
	20
Ile Ser Gly Arg Val Ile Asp Thr Thr Gln Glu Pro Leu Val Gly Ala	25
	30
	35
Thr Ile Thr Leu Lys Glu Lys Pro Ser Val Gly Thr Thr Thr Asp Thr	40
	45
	50
Glu Gly Arg Tyr Thr Leu Thr Leu Pro Asp Gln Lys Glu Tyr Thr Val	55
65	60
	65
Gln Val Ser Phe Val Gly Tyr Val Thr Ala Thr Lys Lys Thr Thr Ala	70
	75
	80
	85
Ala Arg Gln Ser Arg Leu Asp Phe Ile Leu Lys Glu Asp Gln Met Asn	90
	95
	100
Leu Ser Thr Val Val Ile Thr Gly Thr Arg Thr Pro Lys Leu Leu Lys	105
	110
	115
Asp Ala Pro Ile Ile Thr Arg Val Ile Thr Ala Gly Asp Leu Lys Lys	120
	125
	130
Val Asp Ala Thr His Ile Gly Gln Leu Leu Gln Val Glu Leu Pro Gly	135
145	140
	145
	150
Ile Glu Phe Ser Tyr Ser Met Asp Gln Gln Val Lys Leu Asn Met Gln	155
	160
	165
Gly Phe Gly Gly Asn Ala Val Leu Phe Leu Val Asp Gly Glu Arg Leu	170
	175
	180
Ala Gly Glu Thr Leu Asp Asn Ile Asp Tyr Asn Arg Leu Asn Leu Asp	185
	190
	195
Asn Val Glu Arg Val Glu Ile Val Lys Gly Ala Ala Ser Thr Leu Tyr	200
	205

210		215		220
Gly Ser Ser Ala Ile	Gly Gly Val Ile Asn Ile	Ile Thr Lys Ala Ser		
225	230	235	240	
Asp Asp Pro Trp Asn	Leu Asn Leu Asn Thr Arg	Phe Gly Val His Asn		
	245	250	255	
Asp Gln Arg His Gly	Gly Thr Val Gly Phe Asn	Ala Gly Lys Phe Tyr		
	260	265	270	
Ser Gln Thr Asn Val	Gln Tyr Thr Asn Ile Asp	Ser Tyr Asn Val Lys		
	275	280	285	
Gln Gly Asp Tyr Thr	Thr Ile Asn Gly Asn Lys	Thr Trp Asn Val Lys		
	290	295	300	
Glu Arg Leu Met Phe	Thr Pro Asn Glu Gln Leu	Arg Leu Thr Ala Arg		
305	310	315	320	
Ala Gly Tyr Tyr Phe	Arg Glu Arg Asp Ala Ser	Ser Ser Glu Thr Lys Asn		
	325	330	335	
Arg Tyr Arg Gly Phe	Ser Gly Gly Leu Lys Gly	Asn Tyr Asp Phe Asn		
	340	345	350	
Thr Lys Ser Asn Leu	Glu Leu Ala Tyr Thr	Phe Asp Gln Tyr Asp Lys		
	355	360	365	
Ser Asp Tyr Leu Val	Ser Tyr Lys Asn Asp Ile	Arg Asp Tyr Ser Asn		
	370	375	380	
Val Gln His Ser Val	Arg Ala Leu Tyr Asn Tyr	Thr Phe Asn Asp Lys		
385	390	395	400	
Asn Thr Leu Thr Val	Gly Gly Asp Tyr Leu Arg	Asp Tyr Leu Met Ser		
	405	410	415	
Tyr Gln Phe Lys Glu	Asn Ala Asp Tyr Thr	Met His Ser Ala Asp Ala		
	420	425	430	
Phe Gly Gln Phe Asp	Trp Asn Pro Thr Glu His	Phe Asn Val Ile Ala		
	435	440	445	
Gly Leu Arg Phe Asp	Tyr Phe Ser Glu Ser Asn	Val Arg His Phe Ser		
	450	455	460	
Pro His Leu Gly Leu	Met Tyr Lys Ile Gly Asn	Cys Ser Leu Arg Gly		
465	470	475	480	
Ser Tyr Ala Gln Gly	Phe Arg Ser Pro Thr	Leu Lys Glu Met His Met		
	485	490	495	
Asn Phe Tyr Met Ala	Asn Thr Met Met Ile	Tyr Gly Asn Pro Asp Leu		
	500	505	510	
Glu Pro Glu Thr Ser	His Asn Phe Ser Leu Ser	Gly Glu Tyr Thr Lys		
	515	520	525	
Asn Arg Tyr Asn Phe	Thr Leu Thr Gly Tyr Tyr	Asn Leu Val His Gly		
	530	535	540	
Arg His Gln Val Tyr	Leu Phe Gln Arg Tyr Arg	Arg Asn Asp Arg Thr		
545	550	555	560	
Lys Ile Tyr Gln Tyr	Pro Thr Gly Arg His Cys	Arg Asn Arg Cys Gln		
	565	570	575	
Cys Leu Cys Gln Ile	Ser Leu Arg Tyr Arg	Cys Thr Tyr Leu Val Tyr		
	580	585	590	
Val His Pro Arg Val	His Ala			
	595			

<210> 9893

<211> 623

<212> PRT

<213> B.fragilis

<400> 9893

Val Ile Ala Lys Asp	Ser Glu Val Thr	Ala Gly Lys Lys	Glu Gly Gly
1	5	10	15
Arg Ser Met Ile	Thr Lys Met Lys	Lys Leu Thr Phe	Leu Val Tyr His

[illegible]

Gly Ile Ala Gly Val Met Ile Phe Leu Phe Asn Ser Pro Gly Lys Asn
 500 505 510
 Ile Phe Leu Asn Ile Gly Leu Gly Leu Trp Asp Ser Tyr Asn Met Ala
 515 520 525
 Thr Gly Leu Leu Gly Asp Val Leu Ser Tyr Val Arg Leu Phe Ala Leu
 530 535 540
 Gly Leu Ser Gly Gly Ile Leu Ala Gly Val Phe Asn Ser Leu Ala Val
 545 550 555 560
 Gly Met Ser Pro Asp Asn Val Ile Ala Gly Pro Ile Val Met Val Leu
 565 570 575
 Ile Phe Val Ile Gly His Ala Ile Asn Ile Phe Met Asn Val Leu Gly
 580 585 590
 Ala Met Val His Pro Met Arg Leu Thr Phe Val Glu Phe Phe Lys Asn
 595 600 605
 Ser Gly Tyr Glu Gly Gly Gly Lys Glu Tyr Lys Pro Phe Arg Lys
 610 615 620

<210> 9894
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 9894
 Ile Met Gly Lys Lys Val Val Thr Leu Gly Glu Ile Met Leu Arg Leu
 1 5 10 15
 Ser Pro Pro Gly Asn Thr Arg Phe Val Gln Ser Asp Ser Phe Asp Val
 20 25 30
 Val Tyr Gly Gly Gly Glu Ala Asn Val Ala Val Ser Cys Ala Asn Tyr
 35 40 45
 Gly His Asp Ala Tyr Phe Ile Thr Lys Leu Pro Glu His Glu Ile Gly
 50 55 60
 Gln Ser Ala Val Asn Ala Leu Arg Lys Tyr Gly Val Lys Thr Asp Tyr
 65 70 75 80
 Ile Ala Arg Gly Gly Glu Arg Val Gly Ile Tyr Tyr Leu Glu Thr Gly
 85 90 95
 Ala Ala Met Arg Pro Ser Lys Val Ile Tyr Asp Arg Ala His Ser Ala
 100 105 110
 Ile Ala Glu Ala Val Ala Ala Asp Phe Asp Phe Asp Lys Ile Met Glu
 115 120 125
 Gly Ala Asp Trp Ile His Trp Ser Gly Ile Thr Pro Ala Ile
 130 135 140

<210> 9895
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 9895
 Arg Met Lys Asn Phe His Pro Thr Gly Thr Cys Pro Ile Arg Asp Val
 1 5 10 15
 Leu Cys Arg Leu Gly Asp Lys Trp Ser Met Leu Val Leu Val Thr Leu
 20 25 30
 Asn Ala Asn Gly Thr Met Arg Phe Gly Asp Ile His Lys Thr Ile Asp
 35 40 45
 Asp Ile Ser Gln Arg Met Leu Thr Val Thr Leu Arg Thr Leu Glu Ala
 50 55 60
 Asp Gly Leu Val Glu Arg Lys Ala Tyr Ala Glu Val Pro Pro Arg Val
 65 70 75 80
 Glu Tyr Cys Leu Thr Glu Met Gly His Ser Leu Ile Pro His Val Glu

	85		90		95										
Ala	Leu	Val	Gly	Trp	Ala	Leu	Asp	His	Met	Thr	Met	Ile	Phe	Glu	His
	100				105								110		
Arg	Glu	Gln	Gln	Lys	Gly	Leu									
	115														

<210> 9896
 <211> 252
 <212> PRT
 <213> B.fragilis

<400> 9896															
Thr	Ala	Ser	Asp	Pro	Arg	Thr	Asp	Phe	Gly	Val	His	Ala	Lys	Ile	Asn
1				5					10					15	
Gln	Arg	Arg	Ile	Ile	Gly	Gln	Ser	Glu	Lys	Ala	Pro	Asn	Ile	Pro	Ile
			20					25					30		
Ile	Ile	Lys	Lys	Asn	Trp	Lys	Ser	Leu	Ser	Ile	Lys	Thr	Lys	Pro	Leu
		35				40					45				
Ser	Leu	His	Pro	Leu	Leu	Arg	Val	Ser	Ser	Ile	Asn	Ser	Asn	His	Ser
	50					55					60				
Leu	Lys	Lys	His	Leu	Phe	Lys	Met	Ala	Thr	Arg	Ile	Arg	Leu	Gln	Arg
65					70					75				80	
His	Gly	Arg	Lys	Ser	Tyr	Ala	Phe	Tyr	Ser	Ile	Val	Ile	Ala	Asp	Ser
			85					90						95	
Arg	Ala	Pro	Arg	Asp	Gly	Lys	Phe	Thr	Glu	Lys	Ile	Gly	Thr	Tyr	Asn
			100					105						110	
Pro	Asn	Thr	Asn	Pro	Ala	Thr	Val	Asp	Leu	Asn	Phe	Glu	Arg	Ala	Leu
		115					120					125			
His	Trp	Val	Leu	Val	Gly	Ala	Gln	Pro	Ser	Asp	Thr	Val	Arg	Asn	Ile
	130					135					140				
Leu	Ser	Arg	Glu	Gly	Val	Tyr	Met	Lys	Lys	His	Leu	Leu	Gly	Gly	Val
145				150						155				160	
Ala	Lys	Gly	Ala	Phe	Gly	Glu	Ala	Glu	Ala	Glu	Ala	Lys	Phe	Glu	Ala
			165					170						175	
Trp	Lys	Asn	Asn	Lys	Gln	Ser	Gly	Leu	Ser	Ala	Leu	Lys	Ala	Lys	Glu
		180					185					190			
Glu	Glu	Ala	Lys	Lys	Ala	Glu	Ala	Lys	Ala	Arg	Leu	Glu	Ala	Glu	Lys
	195					200					205				
Lys	Val	Asn	Glu	Val	Lys	Ala	Lys	Ala	Leu	Ala	Glu	Lys	Lys	Ala	Ala
	210				215						220				
Glu	Glu	Ala	Ala	Lys	Ala	Ala	Ala	Glu	Ala	Pro	Ala	Glu	Glu	Ala	Ala
225				230						235				240	
Pro	Ala	Glu	Glu	Ala	Ala	Thr	Glu	Ala	Ala	Ala	Glu				
			245					250							

<210> 9897
 <211> 447
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (37)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9897															
Asp	Phe	Asp	Asp	Ala	Leu	Val	Ser	Pro	Leu	Phe	Leu	Ser	Pro	Thr	Ala
1				5					10					15	
Pro	Ala	Pro	Leu	Gln	Ser	Leu	Gly	Val	Lys	Thr	Leu	Tyr	Pro	Val	Ile

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      20      25      30
Asn His Pro Ala Xaa His Gln Thr Tyr Tyr Tyr Glu Asp Gln Asp Arg
      35      40      45
Asn Ala His Ser Gln Ile Val Ser Leu Asn Ala Arg Pro Asp Phe Lys
      50      55      60
Asn Ile Phe Arg Leu Ile Ala Glu Ile Thr Asn His Gly Thr Thr Phe
      65      70      75      80
Tyr His Leu Thr Val Arg Val Leu Tyr Leu Val Asn Leu Gln Ala Val
      85      90      95
Cys Ser Arg Ser Glu Glu Ile Ala Gln Ile Arg Ile Ile Ser Gln Gly
      100      105      110
Gly Val Cys Leu Arg Leu His Asp Phe Arg Arg Ser His Ser Thr Tyr
      115      120      125
Ile Thr Ala Arg Phe His Ile Pro Gln Ser Asn Val Gly Thr Ala His
      130      135      140
Lys Val Asp Glu Ile Ala Gly Ser Phe Arg Ile Thr Gly Ile Leu Arg
      145      150      155      160
Asn His Pro Ala Val Ile Pro Asp Val Ala Ser Phe Pro Arg His Tyr
      165      170      175
Ile Val Gln Val His Ser Tyr Arg Ile Arg Phe Phe Asp Gly Pro Phe
      180      185      190
Gly Ile Ser Ala Pro Gly His Ile Glu Pro Cys Phe Ile Phe Gly His
      195      200      205
His Leu Phe Thr Glu Val Cys Leu Pro Thr Gly Tyr Ile Gly Phe His
      210      215      220
Arg Leu Glu Val Phe Phe Gly Asn Leu His Cys Thr Gly Arg Ile Val
      225      230      235      240
Val His Gln Ile Leu Tyr Cys His Leu Ala Ser Gly Gln Ile Thr Gly
      245      250      255
Met Cys Val Asn Asp Gly Arg Pro Val Arg Ile Ala Val Thr Val Phe
      260      265      270
His Gln Tyr Leu Ala Gly Ile Phe Pro Ile Pro Lys Ala Thr Pro Thr
      275      280      285
Phe Gly Ile Arg Ile Gly Asn Lys Ser Leu Val Ile Gln Tyr Pro Gly
      290      295      300
Arg Ser Pro His Val Thr His Gly Ile Met Thr Gly Asn Ala Ser Gly
      305      310      315      320
Leu Thr Gln Leu Ile Asp Leu Phe Pro Asp Ile Arg Arg His Val Ile
      325      330      335
His Val Val Gly Arg Met Gly Lys Asn Gly Val Asp Gly Gln Gln Gln
      340      345      350
Val Phe Leu Gln His Pro Leu Asp Asp Val Phe Arg Arg Ala Tyr His
      355      360      365
Ile Lys Ile Phe Val Pro Phe Phe Asp Leu Gly Gln His Asp Phe Val
      370      375      380
Asp Ile Glu Ser Leu Ile Asp Asn Thr Asn Ile Leu Ala Cys Leu Leu
      385      390      395
Leu Ile Ile Cys Leu Glu Ile Phe Gln His Ser Val Thr Asp Val Ile
      405      410      415
Gly Pro Val Ile Asn Phe Gln Tyr Leu Phe Ala Gly Leu Thr Gly Ile
      420      425      430
Val Thr Thr Gly Lys His Lys Arg Arg Cys Lys Ala Lys Ser Tyr
      435      440      445

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<210> 9898

<211> 154

<212> PRT

<213> B.fragilis

<400> 9898

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Arg Thr Thr Glu Arg Val Met Lys Val Glu Gln Val Phe Ser Asp Arg
1      5      10      15
Lys Arg Phe Leu Asp Leu Leu Leu Leu Ala Asp Glu Gln Glu Asp Met
20      25      30
Ile Asp Arg Tyr Leu Glu Arg Gly Asp Met Phe Ala Leu Tyr Asp Glu
35      40      45
Asp Lys Leu Arg Ala Val Cys Val Val Thr Asn Glu Gly Lys Gly Ile
50      55      60
Tyr Glu Leu Lys Asn Ile Ala Thr Cys Pro Asp Ser Gln Arg Lys Gly
65      70      75      80
Tyr Gly Lys Ser Leu Ile Glu Tyr Leu Phe His His Tyr Ser Asp Arg
85      90      95
Cys Ser Val Met Phe Val Gly Thr Gly Asp Thr Pro His Thr Leu Leu
100     105     110
Phe Tyr Gln Ser Cys Gly Phe Ile Pro Ser His Arg Ile Lys Asn Phe
115     120     125
Phe Thr Asp His Tyr Asp His Pro Ile Tyr Glu Asn Gly Ile Arg Leu
130     135     140
Arg Asp Met Val Tyr Leu Lys Arg Glu Lys
145     150

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<210> 9899

<211> 243

<212> PRT

<213> B.fragilis

<400> 9899

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Arg Leu Lys Glu Lys Thr Met Leu Ser Glu Lys Tyr Gly Arg Thr Tyr
1      5      10      15
His Tyr Pro Phe Ser Pro Gly Thr Thr Ser Asp Asp Arg Ile Asn His
20      25      30
Thr Tyr Trp Glu Asp Ile Arg Gln Ile Ser Thr Leu Val His Thr Glu
35      40      45
Lys Leu Asp Gly Glu Asn Asn Cys Leu Ser Arg Tyr Gly Val Phe Ala
50      55      60
Arg Ser His Val Ala Pro Thr Thr Ser Pro Trp Thr Ser Gln Leu Arg
65      70      75      80
Gln Arg Trp Glu Leu Leu Lys Asn Asp Leu Gly Asp Ile Glu Leu Phe
85      90      95
Gly Glu Asn Leu Tyr Ala Val His Ser Ile Glu Tyr Lys Arg Leu Glu
100     105     110
Thr His Phe Tyr Val Phe Ala Val Arg Cys Leu Asp Lys Trp Leu Ser
115     120     125
Trp Asp Glu Val Lys Phe Tyr Ala Ala Leu Phe Asp Leu Pro Thr Val
130     135     140
Pro Glu Leu Cys Thr Glu Cys Val Asp Gly Leu Thr Val Ala Ser Leu
145     150     155     160
Glu Gln His Val Val Cys Leu Ala Gln Glu Pro Ser Val Phe Gly Ser
165     170     175
Cys Asp Ala Gln Thr Gly Leu Asp Cys Thr Arg Glu Gly Val Val Thr
180     185     190
Arg Asn Ile Gly Glu Tyr Ala Thr Ala Asp Phe Ala His Asn Val Phe
195     200     205
Lys Tyr Val Arg Lys Gly His Val Gln Thr Gly Glu His Trp Thr Arg
210     215     220
His Trp Lys Arg Ala Arg Leu Val Trp Glu Leu Lys Gln Glu Lys Gly
225     230     235     240
Gly Asn Arg

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<210> 9900
 <211> 371
 <212> PRT
 <213> B.fragilis

<400> 9900

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Ser Met Ile Trp Lys Leu Ser Glu Arg Lys Asp Trp Asn Ser Leu Glu
1      5      10      15
Gln Gln Phe Gly Trp Val Arg Asp Met Asn Gln Val Pro Gln His Thr
      20      25      30
Val His His Ala Glu Gly Ser Val Ala Val His Thr Arg Met Val Leu
      35      40      45
Glu Ala Leu Leu Arg Gln Pro Ala Tyr Pro Met Leu Pro Glu Gln Glu
      50      55      60
Arg Glu Ile Leu Trp Ala Ala Ala Leu Leu His Asp Val Glu Lys Arg
65      70      75      80
Ser Thr Ser Val Asp Glu Gly Asn Gly Gln Val Thr Ser Lys Asn His
      85      90      95
Ala Lys Arg Gly Glu Thr Thr Val Arg Thr Leu Leu Tyr Arg Asp Ile
      100     105     110
Pro Ala Pro Phe Asn Ile Arg Glu His Ile Ala Ser Leu Val Arg His
      115     120     125
His Gly Leu Pro Ile Trp Leu Met Glu Arg Glu Asp Pro Leu Lys Arg
      130     135     140
Ala Cys Glu Ala Ser Leu Arg Leu Asp Thr Ser Leu Leu Lys Gln Leu
145     150     155     160
Thr Val Ala Asp Ile Cys Gly Arg Ile Ser Thr Asp Lys Glu Val Leu
      165     170     175
Leu Glu Ala Thr Glu Phe Phe Glu Met Phe Cys Arg Glu Gln Gln Cys
      180     185     190
Trp Gly Lys Ala Arg Glu Phe Ala Asn Gly Thr Ala Arg Phe His Tyr
      195     200     205
Phe His Thr Pro Arg Ser Tyr Ile Asp Tyr Val Pro His Asp Asp Phe
210     215     220
Lys Cys Glu Val Thr Leu Leu Val Gly Leu Pro Gly Met Gly Lys Asp
225     230     235     240
Tyr Tyr Ile Glu Ser Arg Cys Ala Asp Met Pro Val Val Ser Leu Asp
      245     250     255
Ala Ile Arg Arg Lys His Lys Phe Ser Pro Thr Asp Lys Ala Ala Asn
      260     265     270
Gly Trp Val Ala Gln Thr Ala Lys Glu Gln Ala Arg Ile Tyr Leu Arg
      275     280     285
Lys Gly Gln Asp Phe Ile Trp Asn Ala Thr Asn Val Ser Arg Gln Arg
290     295     300
Arg Thr Gln Leu Ile Asp Leu Phe Ile Thr Tyr Gly Ala Arg Val Lys
305     310     315     320
Ile Val Tyr Ile Glu Lys Pro Tyr Ser Val Trp Arg Arg Gln Asn Ser
      325     330     335
Thr Arg Glu Tyr Glu Val Pro Glu Thr Val Leu Asp Lys Met Leu Gly
      340     345     350
Arg Leu Glu Val Pro Gln Leu Thr Glu Ala His Glu Val Val Tyr Val
      355     360     365
Val Glu Glu
370

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<210> 9901
 <211> 65

<212> PRT
 <213> B.fragilis

<400> 9901

Arg	Gly	Gly	Cys	Thr	Pro	Pro	Pro	Ala	Lys	Thr	Lys	Val	Ser	Leu	Ile
1			5						10					15	
Thr	Ala	Tyr	Arg	Asp	Gln	Gly	Leu	Val	Gly	Phe	Leu	Lys	Pro	Asn	Pro
			20				25						30		
Thr	Gly	Glu	Ala	Arg	Cys	Lys	Thr	Arg	Leu	Leu	Phe	Pro	Val	Leu	Pro
		35					40					45			
Val	Gly	Val	Met	Trp	Lys	Arg	Arg	Lys	Cys	His	Pro	Pro	Gly	Leu	Arg
	50					55					60				
Asn															
65															

<210> 9902

<211> 61

<212> PRT

<213> B.fragilis

<400> 9902

Phe	Leu	Leu	Cys	Ser	Pro	Asn	Phe	Met	Leu	Ser	Trp	His	Trp	Leu	Leu
1			5						10					15	
Pro	Ser	Leu	Ser	Val	Val	Arg	Leu	His	Lys	Leu	Met	Ile	Tyr	Lys	Lys
			20				25					30			
His	Leu	Ser	Val	Phe	Asp	Arg	Thr	Phe	Lys	Cys	Phe	Leu	Lys	Arg	Leu
		35					40					45			
Lys	Arg	Phe	Pro	Lys	Thr	Leu	Lys	Ser	Phe	Phe	Met	Leu			
	50					55					60				

<210> 9903

<211> 515

<212> PRT

<213> B.fragilis

<400> 9903

Arg	Glu	Asp	Arg	Gln	Arg	Met	Lys	Glu	Ser	Ser	Ser	Tyr	Lys	Trp	Ile
1			5						10					15	
Val	Leu	Gly	Asn	Ile	Met	Ile	Gly	Thr	Phe	Met	Ala	Val	Leu	Asp	Ser
			20				25					30			
Thr	Val	Val	Asn	Thr	Gly	Leu	Pro	Val	Ile	Met	Gly	Thr	Leu	Gly	Ala
		35				40					45				
Asp	Ile	Asn	Val	Ala	Glu	Trp	Val	Leu	Thr	Gly	Tyr	Met	Leu	Ser	Met
	50					55					60				
Ala	Ser	Ile	Leu	Pro	Ala	Gly	Trp	Leu	Ser	Glu	Arg	Phe	Gly	Tyr	
65				70					75					80	
Lys	Lys	Ile	Tyr	Phe	Leu	Ser	Leu	Leu	Val	Phe	Thr	Ala	Gly	Ser	Phe
			85					90					95		
Met	Cys	Gly	Ser	Ser	Ser	Thr	Ile	Glu	Glu	Leu	Ile	Phe	Trp	Arg	Val
			100					105					110		
Ile	Glu	Gly	Phe	Gly	Cys	Gly	Met	Leu	Leu	Pro	Val	Gly	Met	Ala	Ile
		115				120						125			
Val	Ser	Asp	Val	Phe	Pro	Pro	Glu	Gln	Arg	Gly	Thr	Ala	Leu	Gly	Phe
		130				135						140			
Trp	Ser	Ile	Ala	Ser	Ala	Ala	Ser	Val	Ser	Phe	Gly	Pro	Ala	Ile	Gly
					150					155				160	
Gly	Tyr	Leu	Val	Asp	Tyr	Met	Asp	Trp	Asn	Tyr	Ile	Phe	Tyr	Val	Asn
				165					170				175		
Ile	Pro	Ile	Gly	Ile	Leu	Ala	Leu	Ile	Val	Thr	Ala	Ile	Val	Gln	Lys

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<210> 9904
<211> 309
<212> PRT
<213> B.fragilis
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<400> 9904
Leu Cys Asn Arg  Ile Tyr  Lys  His  Pro  Asp  Ile  Asp  Lys  Lys  Asn  Ala
1              5              10              15
Phe Ile Lys  Ile  Leu  Thr  Thr  Lys  Ile  Lys  Cys  Gln  Met  Lys  Ile  Lys
              20              25              30
Ser Leu Leu  Thr  Met  Met  Phe  Val  Leu  Cys  Ala  Cys  Ala  Ala  Cys  Asn
              35              40              45
Asp Asp Lys  Asn  Glu  Glu  Thr  Pro  Leu  Asn  Gln  Val  Val  Ala  Gly  Lys
              50              55              60
Tyr Asp Gly  Tyr  Thr  Lys  Ala  Val  Ala  Gln  Tyr  Phe  Pro  Ala  Gly  Gln

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65		70		75		80									
Tyr	Ala	Asp	Lys	Gln	Ser	Ile	Thr	Leu	Thr	Pro	Asn	Asp	Asn	Gly	Thr
		85		90		95									
Val	Asn	Ile	Ala	Tyr	Thr	Ser	Glu	Ser	Phe	Gly	Glu	Phe	Ser	Ile	Ser
		100		105		110									
Asn	Ala	Thr	Val	Glu	Leu	Lys	Asn	Asp	Ala	Tyr	Leu	Val	Lys	Gly	Asp
		115		120		125									
Gly	Lys	Thr	Thr	Met	Gly	Met	Asn	Gly	Gly	Thr	Pro	Lys	Glu	Tyr	Asp
		130		135		140									
Cys	Thr	Phe	Glu	Gly	Thr	Ile	Ser	Lys	Asp	Lys	Lys	Thr	Ser	Ala	Leu
		145		150		155									
Glu	Phe	Asn	Val	Leu	Ala	Val	Met	Asn	Gly	Leu	Thr	Val	Thr	Phe	Thr
		165		170		175									
Gln	Gly	Glu	Ala	Pro	Ala	Ala	Val	Met	Ala	Ala	Gly	Ser	Tyr	Lys	Gly
		180		185		190									
Tyr	Thr	Lys	Ala	Val	Ala	Gln	Tyr	Phe	Pro	Asn	Gly	Gln	Tyr	Ala	Ala
		195		200		205									
Asp	Gln	Thr	Ile	Lys	Val	Thr	Ala	Asn	Glu	Asp	Gly	Thr	Val	Asn	Val
		210		215		220									
Thr	Tyr	Thr	Ser	Thr	Ser	Phe	Gly	Glu	Phe	Thr	Ile	Asn	Asn	Ala	Thr
		225		230		235									
Val	Lys	Ser	Glu	Asn	Asn	Ala	Tyr	Thr	Ile	Asn	Gly	Glu	Gly	Lys	Ser
		245		250		255									
Val	Met	Gly	Met	Glu	Gly	Lys	Glu	Pro	Lys	Glu	Tyr	Ala	Cys	Thr	Leu
		260		265		270									
Lys	Gly	Thr	Ile	Asp	Ala	Ala	Lys	Ala	Thr	Pro	Thr	Phe	Glu	Ile	Ser
		275		280		285									
Val	Pro	Ala	Val	Met	Asn	Gly	Leu	Thr	Ile	Thr	Phe	Ala	Thr	Gly	Asp
		290		295		300									
Val	Pro	Glu	Asn	Lys											
		305													

<210> 9905
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 9905
Val Trp Leu Arg His Thr Gly Arg Met Val Thr Pro Phe Phe Val Tyr
1 5 10 15
Pro Tyr Cys Phe Ser Val Lys Val Lys Asn Arg Thr Pro Phe Ser Gly
20 25 30
Leu Leu Glu Gly Val Lys Leu Ala Ala Lys Ser Ser Gly Cys Pro Ile
35 40 45
Cys Pro Phe Leu Asn Arg Gly Cys Val Ser Arg Ile Phe
50 55 60

<210> 9906
 <211> 117
 <212> PRT
 <213> B.fragilis

<400> 9906
Ile Val Glu Arg Lys Thr Cys Gly Pro Met Lys Arg Asn Leu Leu Arg
1 5 10 15
Lys Glu Glu Asp Ala Asp Pro Ile Ser Val Val Ser Asn Leu Phe Asp
20 25 30
Val Ala Met Val Phe Ala Val Ala Leu Met Val Ala Leu Val Ser Arg
35 40 45

Tyr Asn Met Thr Glu Val Phe Ser Gln Glu Asp Tyr Thr Met Val Lys
 50 55 60
 Asn Pro Gly Lys Glu Asn Met Glu Ile Ile Thr Lys Glu Gly Gln Lys
 65 70 75 80
 Ile Asn Arg Tyr Thr Pro Ser Glu Asp Gln Gln Lys Ser Gly Lys Lys
 85 90 95
 Gly Lys Lys Val Gly Ile Ala Tyr Glu Leu Asp Asn Gly Glu Ile Ile
 100 105 110
 Tyr Val Pro Glu Glu
 115

<210> 9907
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 9907
 Leu Asp Ile Ser Arg Tyr Cys Leu His Leu Val Ile Cys Val Leu Leu
 1 5 10 15
 Cys His His Gln Asn Val Lys Val Met Met Glu Leu Ile Ser Arg Thr
 20 25 30
 Arg Asn Gly Met Ile Thr Tyr Cys Ala His Cys Lys Val Tyr His Leu
 35 40 45
 Glu Phe Gly Asn Leu Phe Phe Arg Leu Ser Glu Ala Gly Phe Glu Cys
 50 55 60
 Leu Arg Asn Tyr Ile Val Ser Ile Asn Gly Pro Tyr Cys Glu Arg Ser
 65 70 75 80
 Asn Arg Lys Met Asn Ala Asn Arg Lys Ile Phe Leu Lys Leu Pro Ala
 85 90 95
 Gln Asn Val Tyr Phe Cys Val Cys Thr Ala Glu Leu Glu Glu Leu Lys
 100 105 110
 Ser Leu Val Leu Leu Gln Ser Pro Ala Val Glu Glu Thr Asp Gly Leu
 115 120 125
 Ile Pro Phe Met His Asp Ile Ser Leu Asn
 130 135

<210> 9908
 <211> 211
 <212> PRT
 <213> B.fragilis

<400> 9908
 Ile Lys Asn Arg Ile Met Glu Lys Thr Tyr Leu Gln Ile Thr Ser Gly
 1 5 10 15
 Arg Gly Pro Val Glu Cys Cys Arg Val Val Ala Leu Val Leu Glu Lys
 20 25 30
 Ile Leu Arg Glu Ala Gln Lys Arg Lys Leu Arg Val Glu Ile Leu Glu
 35 40 45
 Lys Glu Thr Gly Pro Val Asn Arg Thr Leu Leu Ser Ala Val Val Ala
 50 55 60
 Leu Glu Gly Ala Gly Cys Asp Val Leu Ala Asp Glu Trp Glu Gly Thr
 65 70 75 80
 Val Leu Trp Ile Ala Arg Ser Pro Tyr Arg Ile His His Arg Arg Lys
 85 90 95
 Asn Trp Phe Val Gly Val Gln Thr Phe Leu Leu Ser Glu Ser Arg Glu
 100 105 110
 Ala Thr Glu Asp Asp Ile Arg Tyr Glu Thr Leu Arg Ala Ser Gly Pro
 115 120 125
 Gly Gly Gln His Val Asn Lys Thr Glu Ser Ala Val Arg Ala Val His

130		135		140	
Ile Pro Ser Gly Ile Ser Val Val Ala Ser Asp Gln Arg Ser Gln Trp					
145		150		155	160
Gln Asn Lys Lys Leu Ala Thr Glu Arg Leu Leu Val Lys Leu Thr Ala					
	165		170		175
Trp Asn Ile Glu Gln Ala Met Ile Gln Ala Gln Thr Asn Trp Ser Asn					
	180		185		190
His Asn Ser Leu Gln Arg Gly Asn Pro Val Lys Ile Ile Gln Glu Glu					
	195	200		205	
Leu Arg Phe					
210					

<210> 9909
 <211> 99
 <212> PRT
 <213> B.fragilis

<400> 9909															
Pro Glu Thr Ser Val Leu Phe Lys Ser Ile Pro Ala Ile Pro Val Ala															
1		5					10						15		
Ile Ser Ser Glu Gly Cys Leu Arg Arg Thr Gly Phe Thr Asp Gly Pro															
	20					25						30			
Pro Ile Gly Thr Ser Cys Pro Ser Ile Ser Gly Pro Pro Ser Ile Gly															
	35					40						45			
Ser Pro Lys Ala Leu Lys Lys Arg Pro Ala Ser Cys Ser Leu Thr Phe															
	50				55					60					
Ser Val Gly Asp Leu Pro Arg Asn Thr Thr Ser Ala Leu Val Gly Ile															
	65			70					75					80	
Pro Ser Val Pro Ser Asn Thr Cys Lys Val Thr Ser Ser Pro Ala Ile															
		85					90						95		
Phe Thr Thr															

<210> 9910
 <211> 1467
 <212> PRT
 <213> B.fragilis

<400> 9910															
Arg Lys Arg Leu Ser Gln Arg Ile Ser Pro Ile Val Arg Pro Ala Phe															
1		5					10						15		
Ser Lys Asn Glu Ile Asn Gln Arg Thr Lys Asn Asn Met Lys Lys Lys															
	20					25						30			
Gln Ile Ile Thr Thr Cys Cys Val Ala Ala Ala Ile Leu Val Gly Val															
	35					40						45			
Phe Val Trp Gln Ala Tyr Phe Ser Ala Thr Lys Ile Ala Phe Val Asn															
	50				55				60						
Phe Gln Thr Ile Asn Leu Gly Asn Ile Ser Lys Ala Asn Asp Asn Ser															
	65			70				75						80	
Phe Val Lys Leu Arg Glu Val Ser Thr Asp His Leu Asp Glu Leu Thr															
		85					90						95		
Gly Tyr Asp Met Val Phe Val Asn Gly Met Gly Leu Arg Ile Val Glu															
	100					105						110			
Glu Gln Arg Gln Gln Ile Gln Arg Ala Ala Asp Lys Gly Ile Pro Val															
	115					120						125			
Tyr Thr Ser Met Ala Thr Asn Pro Ala Asn Asn Ile Cys Asn Leu Asp															
	130				135						140				
Ser Val Gln Met Ser Gln Ile Arg Gln Tyr Leu Thr Asn Ala Gly Lys															
145				150				155							160

Val	Asn	Tyr	Arg	Asn	Leu	Leu	Ser	Tyr	Val	Arg	Lys	Glu	Ile	Asp	Gly
				165					170					175	
Lys	Leu	Ile	Ser	Ala	Pro	Val	Pro	Glu	Ala	Pro	Val	Glu	Lys	Pro	Thr
			180					185					190		
Asp	Ile	Leu	Tyr	His	Ala	Gly	Val	Lys	Asn	Pro	Asp	Asp	Glu	Met	Glu
		195					200					205			
Phe	Leu	Asn	Val	Thr	Asp	Tyr	Glu	Lys	Phe	Leu	Arg	Glu	Asn	Gly	Leu
	210					215					220				
Tyr	His	Glu	Gly	Ala	Arg	Lys	Val	Val	Ile	Thr	Gly	Gln	Met	Ala	Asp
225					230					235					240
Ala	Thr	Gly	Leu	Ile	Leu	Ala	Leu	Glu	Lys	Ala	Gly	His	Asn	Val	Tyr
			245						250					255	
Pro	Ile	Ser	Ser	Phe	Thr	Arg	Phe	Met	Glu	Phe	Val	Arg	Glu	Ile	Arg
			260					265					270		
Pro	Asp	Ala	Val	Ile	Asn	Met	Ala	His	Gly	Arg	Met	Gly	Asp	Asp	Met
	275						280					285			
Val	Glu	Tyr	Leu	Lys	Glu	Arg	Asn	Ile	Pro	Leu	Phe	Ala	Pro	Leu	Thr
	290					295					300				
Val	Asn	Ser	Leu	Val	Glu	Glu	Trp	Glu	Asn	Asp	Pro	Met	Gly	Met	Ser
305					310					315					320
Gly	Gly	Phe	Leu	Ser	Gln	Ser	Val	Val	Thr	Pro	Glu	Ile	Asp	Gly	Ala
			325						330					335	
Ile	Arg	Pro	Phe	Ala	Leu	Phe	Ala	Gln	Tyr	Lys	Asp	Asp	Glu	Gly	Leu
		340						345					350		
Gln	His	Ser	Phe	Ala	Val	Pro	Glu	Arg	Leu	Glu	Thr	Phe	Val	Asn	Thr
		355					360					365			
Val	Asn	Asn	Tyr	Leu	Thr	Leu	Lys	Thr	Lys	Pro	Asn	Ser	Glu	Lys	His
	370					375					380				
Ile	Ala	Ile	Val	Tyr	Tyr	Lys	Gly	Pro	Gly	Gln	Asn	Ala	Leu	Thr	Ala
385					390					395					400
Ser	Gly	Met	Glu	Val	Gly	Pro	Ser	Leu	Tyr	Asn	Leu	Leu	Leu	Arg	Met
			405						410					415	
Lys	Lys	Glu	Gly	Tyr	Arg	Val	Glu	Asn	Leu	Pro	Glu	Ser	Ala	Lys	Glu
		420						425					430		
Leu	Glu	Lys	Met	Ile	Gln	Ala	Gln	Gly	Ala	Val	Phe	Gly	Met	Tyr	Ala
		435					440					445			
Glu	Gly	Ala	Phe	Asp	Glu	Phe	Met	Lys	Thr	Gly	Asn	Pro	Glu	Leu	Val
	450					455					460				
Thr	Lys	Glu	Gln	Tyr	Glu	Ser	Trp	Val	Lys	Ala	Ser	Leu	Arg	Pro	Gly
465					470					475					480
Lys	Tyr	Ala	Glu	Val	Val	Ala	Ala	Asn	Gly	Glu	Phe	Pro	Gly	Gln	Tyr
			485						490					495	
Met	Thr	Thr	Pro	Asp	Gly	Arg	Leu	Gly	Ile	Ala	Arg	Leu	Gln	Phe	Gly
			500					505					510		
Asn	Val	Val	Leu	Met	Pro	Gln	Met	Ala	Ala	Gly	Ser	Gly	Asp	Asn	Ala
		515					520					525			
Phe	Gln	Val	Val	His	Gly	Thr	Asn	Ala	Ala	Pro	Pro	His	Thr	Tyr	Ile
	530					535					540				
Ala	Ser	Tyr	Leu	Trp	Leu	Gln	His	Gly	Phe	Lys	Ala	Asp	Ala	Met	Ile
545					550					555					560
His	Phe	Gly	Thr	His	Gly	Ser	Leu	Glu	Phe	Thr	Pro	Arg	Lys	Gln	Val
			565						570					575	
Ala	Leu	Cys	Ser	Asp	Asp	Trp	Pro	Asp	Arg	Leu	Val	Gly	Ala	Leu	Pro
			580					585					590		
His	Leu	Tyr	Ile	Tyr	Ser	Ile	Gly	Asn	Val	Gly	Glu	Gly	Met	Ile	Ala
	595					600						605			
Lys	Arg	Arg	Ser	Tyr	Ala	Thr	Leu	Gln	Ser	Tyr	Leu	Thr	Pro	Pro	Phe
	610					615					620				
Leu	Glu	Ser	Ser	Val	Arg	Gly	Ile	Tyr	Arg	Asp	Leu	Met	Glu	Lys	Ile

625		630		635		640
Lys Ile Tyr Asn Asn Thr Thr Gly Ala Lys Glu Lys Gln Ser Leu Ala						
	645		650		655	
Val Lys Ala Leu Thr Val Lys Leu Gly Ile His Arg Glu Leu Gly Leu						
	660		665		670	
Asp Ser Leu Pro Thr Arg Pro Tyr Ser Glu Asp Glu Val Ala Arg Val						
	675		680		685	
Glu Asn Phe Ala Glu Glu Leu Gly His Gly Lys Ile Thr Gly Gln Leu						
	690		695		700	
Tyr Thr Met Gly Val Pro Tyr Glu Pro Glu Arg Ile Thr Ser Ser Val						
	705		710		715	
Leu Ala Met Thr Thr Glu Pro Ile Ala Tyr Ser Leu Leu Ser Leu Asp						
	725		730		735	
Lys Gln Arg Gly Lys Ala Thr Ala Asp Val Glu Lys His Arg Ser Leu						
	740		745		750	
Phe Thr Gln Arg Tyr Leu Asn Pro Ala Arg Ala Leu Val Glu Lys Leu						
	755		760		765	
Ile Ala Asn Pro Ala Leu Ala Thr Asp Glu Leu Ile Cys Arg Thr Ala						
	770		775		780	
Gly Val Ser Pro Glu Glu Leu Ala Lys Ala Arg Glu Ile Glu Thr Ser						
	785		790		795	
Arg Asn Ala Pro Lys Gly Met Met Ala Met Met Ala Ala Ala Ala						
	805		810		815	
Lys Asn Lys Thr Gly Asp Lys Thr Gly Lys Thr Ala Asp Lys Met Pro						
	820		825		830	
Glu Ala Met Lys Lys Lys Met Lys Glu Met Gly Ala His Met Asp Ser						
	835		840		845	
Ser Lys Ala Met Glu Met Ala Lys Lys Met Gly Ala Asp Pro Glu Ala						
	850		855		860	
Leu Lys Lys Met Glu Ala Lys Met Asn Ala Ser Lys Gly Asp Lys Pro						
	865		870		875	
Glu Ala Asp Lys Ala Lys Gly Met Ser Asp Met Met Ala Ala Met Gly						
	885		890		895	
Lys Lys Thr Ala Gln Lys Glu Tyr Ser Lys Glu Glu Ile Asn Phe Ala						
	900		905		910	
Leu Ala Leu Thr Glu Val Glu Arg Thr Ile Arg Asn Val Gly Asn Tyr						
	915		920		925	
Gln Thr Glu Leu Thr Ala Ser Pro Glu Lys Glu Leu Ala Ser Leu Val						
	930		935		940	
Asn Ala Leu Asn Gly Gly Tyr Thr Ala Pro Ser Pro Gly Gly Asp Pro						
	945		950		955	
Ile Ala Asn Pro Asn Thr Leu Pro Thr Gly Arg Asn Met Tyr Ala Ile						
	965		970		975	
Asn Ala Glu Ala Thr Pro Ser Glu Ser Ala Trp Glu Lys Gly Val Ala						
	980		985		990	
Leu Ala Lys Gln Thr Ile Glu Thr Tyr Gln Arg Arg His Asn Asp Ser						
	995		1000		1005	
Ile Pro Arg Lys Val Ser Tyr Thr Leu Trp Ser Gly Glu Phe Ile Glu						
	1010		1015		1020	
Thr Gly Gly Ala Thr Ile Ala Gln Val Leu Tyr Met Leu Gly Val Glu						
	1025		1030		1035	
Pro Val Arg Asp Ala Phe Gly Arg Val Ser Asp Leu Lys Leu Ile Pro						
	1045		1050		1055	
Ser Ala Glu Leu Gly Arg Pro Arg Ile Asp Val Val Val Gln Thr Ser						
	1060		1065		1070	
Gly Gln Leu Arg Asp Ile Ala Ala Ser Arg Leu Phe Leu Ile Asn Arg						
	1075		1080		1085	
Ala Val Glu Met Ala Ala Ala Ala Lys Asp Asp Lys Tyr Glu Asn Leu						
	1090		1095		1100	

Val Ala Ala Ser Val Val Glu Ala Glu Lys Thr Leu Thr Glu Lys Gly
 1105 1110 1115 1120
 Val Ser Pro Lys Asp Ala Arg Glu Met Ala Ala Phe Arg Val Phe Gly
 1125 1130 1135
 Gly Ala Asn Gly Met Tyr Gly Thr Gly Ile Gln Glu Met Val Glu Ser
 1140 1145 1150
 Gly Asp Arg Trp Glu Asp Glu Ser Glu Ile Ala Ala Thr Tyr Leu Asn
 1155 1160 1165
 Asn Met Gly Ala Tyr Tyr Gly Ser Glu Lys Asn Trp Glu Ala Phe Arg
 1170 1175 1180
 Lys Tyr Ala Leu Glu Ala Ala Leu Thr Arg Thr Asp Val Val Val Gln
 1185 1190 1195 1200
 Pro Arg Gln Ser Asn Thr Trp Gly Ala Leu Ser Leu Asp His Val Tyr
 1205 1210 1215
 Glu Phe Met Gly Gly Met Asn Leu Ala Val Arg Asn Val Thr Gly Lys
 1220 1225 1230
 Asp Pro Asp Ala Tyr Leu Ser Asp Tyr Arg Asn Arg Asn His Met Arg
 1235 1240 1245
 Met Gln Glu Val Lys Glu Ala Val Gly Val Glu Ser Arg Thr Thr Ile
 1250 1255 1260
 Leu Asn Pro Ala Tyr Ile Lys Glu Lys Met Lys Gly Gly Ser Ser Ser
 1265 1270 1275 1280
 Ala Ala Glu Phe Ala Glu Thr Val Thr Asn Thr Tyr Gly Trp Asn Val
 1285 1290 1295
 Met Lys Pro Ala Ala Ile Asp Lys Glu Leu Trp Asp Asn Ile Tyr Asn
 1300 1305 1310
 Val Tyr Val Lys Asp Glu Tyr Asn Leu Asn Val Lys Glu Phe Phe Glu
 1315 1320 1325
 Thr Gln Ser Pro Ala Ala Leu Glu Glu Met Thr Ala Ile Met Leu Glu
 1330 1335 1340
 Ser Ala Arg Lys Gly Leu Trp Lys Ala Ser Ala Glu Gln Val Ala Glu
 1345 1350 1355 1360
 Leu Ala Lys Leu His Thr Glu Thr Val Asn Lys Tyr Arg Pro Ser Cys
 1365 1370 1375
 Ser Gly Phe Val Cys Asp Asn Ala Lys Leu Arg Glu Tyr Ile Ala Ser
 1380 1385 1390
 Lys Ser Asp Ala Pro Ala Ala Ala Gln Tyr Lys Glu Asn Ile Ser Lys
 1395 1400 1405
 Ile Arg Glu Ala Lys Val Ser Gly Asp Ala Lys Gly Met Val Met Lys
 1410 1415 1420
 Lys Glu Glu Ile Asn Arg Thr Pro Glu Glu Gln Lys Thr Thr Leu Ser
 1425 1430 1435 1440
 Asn Ile Ala Val Gly Ala Ala Val Val Val Val Ile Leu Ala Leu Val
 1445 1450 1455
 Leu Phe Val Arg Lys Arg Arg Lys Thr Ser Glu
 1460 1465

<210> 9911

<211> 231

<212> PRT

<213> B.fragilis

<400> 9911

Leu Ile Ser Arg Ile Met Asp Ala Ala Asn Thr Ser Asn Pro Ser Asp
 1 5 10 15
 Lys Lys Lys Phe Ile Trp Leu Val Ile Leu Leu Ile Ile Ala Ile Val
 20 25 30
 Val Ala Val Val Trp Trp Trp Asn Tyr Arg Lys Tyr Val Ser Thr Ile
 35 40 45

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Asp Ala Asn Leu Asp Gly Ser Arg Val Asn Val Ser Val Arg Ala Met
 50                      55                      60
Ala Pro Leu Ser Ala Val Phe Lys Gln Glu Gly Asp Ser Val Lys Arg
 65                      70                      75                      80
Gly Glu Leu Leu Ala Val Leu Asp Ser Thr Met Thr Glu Asp Tyr Arg
                      85                      90                      95
Ile Val Ser Pro Val Asp Gly Leu Ile Ala Lys Gln Trp Val Val Pro
          100                      105                      110
Gly Asp Leu Leu Gln Pro Gly Glu Asn Ile Phe Thr Leu Asn Glu Gly
          115                      120                      125
Lys Lys Leu Trp Val Thr Val Tyr Leu Gln Glu Thr Lys Phe Asp Glu
          130                      135                      140
Val Arg Met Gly Gln Gln Ala Leu Phe Thr Leu Asp Ala Tyr Pro Gly
          145                      150                      155                      160
Leu Thr Phe Tyr Gly Lys Ile Phe Tyr Ile Gly Ala Asn Thr Ala Ser
                      165                      170                      175
Glu Phe Ser Leu Ile Pro Pro Asp Asn Ala Ser Gly Asn Tyr Thr Lys
          180                      185                      190
Val Ala Gln Arg Ile Pro Leu Lys Ile Ser Ile Asp Arg Val Glu Gly
          195                      200                      205
Lys Glu Lys Leu Lys Ala Asn Leu Arg Leu Leu Ser Gly Met Ser Ala
          210                      215                      220
Asn Val Lys Ile Val Lys Glu
          225                      230

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<210> 9912
<211> 88
<212> PRT
<213> B.fragilis

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<400> 9912
Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1                      5                      10                      15
Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
          20                      25                      30
Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
          35                      40                      45
Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
          50                      55                      60
Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
          65                      70                      75                      80
Pro Pro Gly Ala Leu Pro Gly Ile
                      85

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<210> 9913
<211> 269
<212> PRT
<213> B.fragilis

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<400> 9913
Tyr Glu Arg Arg Arg Trp Ala Met Val Lys Lys Ile Phe Ala Gln Thr
 1                      5                      10                      15
Tyr Leu Trp Ile Leu Leu Leu Leu Leu Tyr Ser Pro Ile Val Ile Ile
          20                      25                      30
Met Ile Tyr Ser Phe Thr Glu Ala Lys Val Leu Gly Asn Trp Thr Gly
          35                      40                      45
Phe Ser Thr Lys Leu Tyr Ser Ser Leu Phe Thr Thr Gly Thr His His
          50                      55                      60
Ser Leu Met Asn Ala Leu Ile Asn Thr Val Thr Ile Ala Leu Ile Ala

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```
<210> 9914
<211> 137
<212> PRT
<213> B.fragilis
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<210> 9915
<211> 417
<212> PRT
<213> B.fragilis
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<400> 9915
Tyr Arg Asn Gly Glu Phe Met Lys Asn Ile Arg Gln Phe His Leu Leu
1 5 10 15

Ser Ser Ile Leu Gly Gly Val Phe Leu Phe Ser Ser Cys Ser Val Val
 20 25 30
 Pro Lys Ala Glu Glu Lys Asn Leu Ser Glu Gln Trp Pro Val Val Ala
 35 40 45
 Ser Tyr Gln Trp Ala Gly Gln Asp Ser Val Val Val Cys Asp Leu Ser
 50 55 60
 Leu Leu Lys Asp Thr Val Asp Leu Pro Phe Ser Phe Phe Leu Lys Asp
 65 70 75 80
 Phe Gln Ile Ile Lys Leu Asp Asn Arg Asp Glu Ala Met Val Gly Glu
 85 90 95
 Asn Asn Leu Cys Val Ser Glu Asn Tyr Ile Leu Val Tyr Gly Ser Val
 100 105 110
 Tyr Glu Leu His Pro Cys Arg Leu Phe Thr Lys Lys Gly Glu Phe Val
 115 120 125
 Thr Asn Ile Gly Ala Ile Gly Gln Gly Pro Gly Glu Tyr Arg Ala Val
 130 135 140
 Tyr Lys Ala Glu Ile Asp Glu Lys His Asn Cys Ile Tyr Leu Met Pro
 145 150 155 160
 Phe Ala Asn Ser Asn Ala Ile Tyr Val Tyr Asp Leu Ala Gly Lys Pro
 165 170 175
 Leu Arg Ser Ile Pro Leu His Gln Ser Val Ser Lys Ala Val Phe Lys
 180 185 190
 Val Asp Ala Asp Lys Arg Glu Leu Thr Val Gly Ala Leu Pro Phe Thr
 195 200 205
 Gly Tyr Pro Phe Val Ala Trp Val Gln Asp Phe Glu Gly His Leu Leu
 210 215 220
 Asp Ser Val Pro Ala Ala Arg His Leu Ser Val Leu Pro Asp Tyr Ser
 225 230 235 240
 Asn Glu Val Met Tyr Gly Ala Asn Thr Glu Val Phe Asp Phe Tyr Ile
 245 250 255
 Ser Thr Phe Phe Glu Leu Arg Pro Asp Thr Leu Tyr His Tyr Ile Arg
 260 265 270
 Ser Gly Ser Arg Leu Lys Pro Arg Phe Thr Leu Asn Ile Gly Asp Arg
 275 280 285
 Lys Arg Ser Ile Thr Thr Phe Tyr Glu Leu Pro Gln Ala Tyr Val Gly
 290 295 300
 Arg Leu Met Val Glu Glu Gln Val Gly Asp Gly Met Trp Glu Thr Lys
 305 310 315 320
 Ser Pro Ser Asn Phe Ile Val Asp Lys Ala Ser Leu Arg Gly Thr Phe
 325 330 335
 Phe Arg Val Ile Asn Asp Phe Ala Gly Gly Met Pro Asp Arg Leu Trp
 340 345 350
 Thr Pro Trp Ser Leu Arg Asn Lys Gln Tyr Ile Arg Leu Val Glu Pro
 355 360 365
 Gly Val Leu Lys Ala Glu Ile Glu Ser Tyr Leu Ser Ser Thr Asp Gly
 370 375 380
 Arg Lys Gly Lys Asn Arg Lys Lys Leu Gln Glu Leu Cys Glu Ser Ile
 385 390 395 400
 Gly Glu Glu Asp Asn Ser Tyr Val Ile Tyr Ala Lys Gln Lys Gly Val
 405 410 415
 Gln

<210> 9916

<211> 260

<212> PRT

<213> B.fragilis

<400> 9916

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Pro Asn Leu Met Asp Ile His Gln Glu Leu Lys Glu Leu Ser Lys Phe
1      5      10      15
Leu Ser Glu Tyr Ser Thr Ser Leu Met Ala Val Gly Val Gln Thr Ser
20      25      30
Arg Ile Val Arg Asn Thr Ser Arg Ile Ala Glu Ser Phe Gly Phe Phe
35      40      45
Cys Asp Met Thr Ile Phe Gln Lys Thr Ile Ile Met Thr Leu Arg Asp
50      55      60
Ala Asp Asn Ser His Ser Tyr Ser Thr Val Asn Lys Ile Lys Pro Met
65      70      75      80
Gly Leu Asn Phe Ala Ile Asn Ser Ala Leu Ser Thr Leu Ser Trp Glu
85      90      95
Ala Tyr Asp Glu His Leu Ser Leu Ser Glu Leu Gln Arg Arg Tyr His
100      105      110
Glu Ile Val Ser Lys Pro Arg Glu Ser Lys Trp Leu Val Leu Ile Leu
115      120      125
Val Ala Phe Ala Asn Ala Ser Phe Cys Arg Leu Phe Gln Gly Asp Phe
130      135      140
Ile Ser Met Gly Ile Val Phe Val Ala Thr Leu Ala Gly Phe Phe Val
145      150      155      160
Arg Thr Glu Leu Met Gly Arg His Trp Asn His Leu Ala Ile Phe Ile
165      170      175
Ile Ser Ser Phe Ile Ala Ser Met Ile Gly Ser Thr Gly Tyr Leu Met
180      185      190
His Trp Gly Asp Thr Pro Asp Met Ala Leu Gly Thr Ser Val Leu Tyr
195      200      205
Leu Ile Pro Gly Val Pro Leu Ile Asn Ala Ile Met Asp Ile Ile Asp
210      215      220
Gly His Val Leu Ala Gly Thr Ser Arg Phe Ile Asn Ala Cys Leu Leu
225      230      235      240
Ile Ile Cys Ile Ala Ile Gly Leu Ser Met Thr Leu Leu Ile Thr Gly
245      250      255
Ile Ser Thr Leu
260

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<210> 9917

<211> 185

<212> PRT

<213> B.fragilis

<400> 9917

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Gln Asp Ile Ile Thr Trp Cys Thr Val Ala Ile Lys Tyr Thr Ser Phe
1      5      10      15
Arg Asp Thr Asp Gly Met Ile Ala Gln Arg Tyr Ile Asn Thr Pro Arg
20      25      30
Val Asp Ile Ala Gly Ile Asp Ala Asn Ala Ser Ala Lys Tyr Pro Cys
35      40      45
Gly Ile Gly Ala Arg Ile Ser Tyr Thr Tyr Ile His Glu Phe Met Arg
50      55      60
Asp Gly Gln Thr Lys Leu Ser Ser Thr Arg Pro His Ser Ala Thr Val
65      70      75      80
Arg Leu Glu Tyr Gly Lys Thr Trp Asp His Tyr Asp Phe Asn Leu Ser
85      90      95
Leu Asp Gly Arg Ala Leu Ser Gln Val Lys Thr Asn Gln Tyr Thr Ser
100      105      110
Asn Asp Pro Asn Ala Gly Thr Glu Lys Val Thr Tyr Pro Gly Tyr Thr
115      120      125
Met Trp Asn Leu Thr Leu Thr Gln Arg Ile Trp Lys Gly Ile Asn Val
130      135      140

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5803

Asn Met Ala Val Asn Asn Leu Phe Asn Tyr Arg Pro Asp Tyr Tyr Tyr
 145 150 155 160
 Ala Asn Ser Pro Tyr Thr Thr Gly Thr Asn Phe Ser Val Gly Leu Ser
 165 170 175
 Leu Asp Ile Asp Gln Met Phe Arg Lys
 180 185

<210> 9918
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 9918
 Ile Val Tyr Ile Leu Met Ala Lys Phe Asp Lys Ile Ala Val Leu Asn
 1 5 10 15
 Lys Ile Gly Ser Thr Gly Met Val Pro Val Phe Tyr His Glu Asp Val
 20 25 30
 Glu Ile Ala Lys Lys Val Val Lys Ala Cys Tyr Glu Gly Gly Val Arg
 35 40 45
 Ala Phe Glu Phe Thr Asn Arg Gly Asp Phe Ala Gln Glu Val Phe Ala
 50 55 60
 Gly Leu Val Lys Phe Ala Val Arg Glu Cys Pro Glu Met Ala Met Gly
 65 70 75 80
 Val Gly Ser Val Val Asp Pro Ala Thr Ala Ala Leu Tyr Ile Gln Ser
 85 90 95
 Gly Ala Asp Phe Val Val Gly Pro Leu Phe Asn Pro Glu Ile Ala Lys
 100 105 110
 Ile Cys Asn Arg Arg Leu Ile Ala Tyr Thr Pro Gly Cys Gly Ser Val
 115 120 125
 Ser Glu Val Gly Phe Ala Gln Glu Ala Gly Cys Asp Leu Cys Lys Ile
 130 135 140
 Phe Pro Gly Asp Val Tyr Gly Pro Asn Phe Val Lys Gly Leu Met Ala
 145 150 155 160
 Pro Met Pro Trp Ser Lys Leu Met Val Thr Gly Gly Val Glu Pro Thr
 165 170 175
 Arg Glu Asn Leu Thr Gly Trp Phe Gly Ala Gly Ala Phe Cys Val Gly
 180 185 190
 Met Gly Ser Lys Leu Phe Pro Lys Asp Lys Val Ala Ala Glu Asp Trp
 195 200 205
 Gly Tyr Val Thr Lys Lys Cys Thr Glu Ala Leu Glu Tyr Ile Ala Glu
 210 215 220
 Ala Arg Lys
 225

<210> 9919
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 9919
 Ser Val Asn Met Glu Asn Lys Ile Gln Glu Leu Thr Asp Lys Ile Tyr
 1 5 10 15
 Arg Glu Gly Val Glu Lys Gly Asn Glu Glu Ala Arg Arg Leu Ile Ala
 20 25 30
 Asn Ala Gln Glu Glu Ala Lys Lys Ile Val Glu Asp Ala His Lys Glu
 35 40 45
 Ala Glu Ser Ile Ile Ala Ser Ser Arg Lys Ser Ala Asp Glu Leu Thr
 50 55 60
 Glu Asn Thr Lys Ser Glu Leu Lys Leu Phe Ala Gly Gln Ala Val Asn

```

65          70          75          80
Ala Leu Lys Ser Glu Ile Ala Thr Met Val Thr Asp Lys Ile Val Thr
          85          90          95
Ala Pro Val Lys Glu Phe Ala Gln Asn Lys Asp Phe Leu Asn Ala Phe
          100          105          110
Ile Val Ala Leu Ala Ser Lys Trp Ser Val Asp Glu Pro Ile Ile Ile
          115          120          125
Ser Thr Ser Asp Ala Glu Ser Leu Lys Lys Tyr Phe Ala Ala Asn Ala
          130          135          140
Lys Ala Leu Leu Asp Lys Gly Val Thr Ile Glu Gln Val Asn Gly Ile
145          150          155          160
Lys Ala Leu Phe Ser Val Ser Pro Ala Asp Gly Ser Tyr Lys Val Asn
          165          170          175
Phe Gly Glu Glu Glu Phe Met Asn Tyr Phe Lys Ala Phe Leu Arg Pro
          180          185          190
Gln Leu Val Glu Met Leu Phe
          195

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<210> 9920
<211> 220
<212> PRT
<213> B.fragilis

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<400> 9920
Ser Arg Cys Ile Met Arg Arg Ile Phe Ile Phe Ile Ala Phe Ala Leu
1          5          10          15
Cys Ser Leu Trp Gln Leu Arg Ala Gln Ala Asp Thr Ala Ser Phe Leu
          20          25          30
Phe Asp Lys Tyr Glu Asp Ala Gln Val Leu Leu Arg Ala Gly Gly Glu
          35          40          45
Leu Lys Ser Lys Met Asn Tyr Ser Ile Val Val Asn Lys Phe Tyr Phe
          50          55          60
Ile Asp Pro Gln Asp Lys Gln Val Lys Glu Leu Ala Asn Pro Gly Asp
65          70          75          80
Ile Leu Leu Ile Lys Ile Ala Gly Arg Thr Phe Tyr Pro Glu Ser Asn
          85          90          95
Gly Ala Gly Ile Glu Met Leu Pro Thr Lys Pro Val Val Tyr Val Gln
          100          105          110
Tyr Lys Ala Thr Ala Arg Lys Glu Ala Pro Met Gly Ala Tyr Gly Thr
          115          120          125
Arg Ser Glu Thr Thr Ala Val Gln Ser Tyr Gly Thr Ile Thr Ser Asn
          130          135          140
Gly Gln Ser Tyr Lys Leu Glu Gly Glu Lys Ile Ile Val Ser Asn Arg
145          150          155          160
His His Val Tyr Trp Val Glu Lys Asp Asp Lys Met Lys Gln Phe Arg
          165          170          175
Asn Phe Lys Gln Leu Ala Lys Ile Tyr Ser Lys His Arg Ala Glu Val
          180          185          190
Glu Lys Tyr Ile Glu Asp Asn Lys Val Asn Phe Glu Asp Val Asp Gln
          195          200          205
Ile Val Lys Leu Cys Ser Tyr Ala Asp Ser Leu Lys
          210          215          220

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<210> 9921
<211> 130
<212> PRT
<213> B.fragilis

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<400> 9921

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Pro Glu Gln Lys Glu Arg Met Thr Trp Val Lys Lys Phe Tyr Asp Leu
 275 280 285
 Leu Ser Arg Leu Glu Val Thr Met Ala Thr Pro Thr Leu Ser Asn Ala
 290 295 300
 Arg Lys Pro Tyr His Gln Leu Ser Ser Cys Phe Ile Asp Thr Val Pro
 305 310 315 320
 Asp Ser Leu Glu Gly Ile Tyr Arg Ser Ile Asp Asn Phe Ala Met Val
 325 330 335
 Ser Lys Phe Gly Gly Met Gly Met Tyr Phe Gly Lys Val Arg Ala
 340 345 350
 Ala Gly Gly Asn Ile Arg Gly Phe Lys Gly Val Ala Gly Gly Val Ile
 355 360 365
 Arg Trp Met Lys Leu Val Asn Asp Thr Ala Val Ala Val Asp Gln Leu
 370 375 380
 Gly Met Arg Gln Gly Ala Val Ala Val Tyr Leu Asp Val Trp His Lys
 385 390 395 400
 Asp Leu Pro Glu Phe Leu Gln Leu Arg Thr Asn Asn Gly Asp Asp Arg
 405 410 415
 Met Lys Ala His Asp Ile Phe Pro Ser Val Cys Tyr Pro Asp Leu Phe
 420 425 430
 Trp Lys Met Val Lys Glu Asp Leu Asn Gln Pro Trp Tyr Leu Phe Cys
 435 440 445
 Pro Asn Glu Ile Met Thr Ile Lys Gly Tyr Cys Leu Glu Asp Tyr Tyr
 450 455 460
 Gly Glu Glu Trp Glu Lys Arg Tyr His Asp Cys Val Asn Asp Thr Arg
 465 470 475 480
 Leu Ser Lys Arg Ser Ile Ser Ile Lys Asp Ile Val Arg Leu Val Leu
 485 490 495
 Arg Ser Ala Val Glu Thr Gly Thr Pro Phe Thr Phe Asn Arg Asp Thr
 500 505 510
 Val Asn Arg Ala Asn Pro Asn Ala His Arg Gly Ile Ile Tyr Cys Ser
 515 520 525
 Asn Leu Cys Thr Glu Ile Ala Gln Asn Met Ala Ala Ile Glu Thr Val
 530 535 540
 Ser Thr Glu Ile Arg Thr Glu Glu Gly Asp Thr Val Val Val Lys Thr
 545 550 555 560
 Val Arg Pro Gly Asp Phe Val Val Cys Asn Leu Ala Ser Leu Ser Leu
 565 570 575
 Gly His Leu Pro Leu Glu Asp Glu Glu Gln Ile Lys Glu Lys Val Ser
 580 585 590
 Thr Val Val Arg Ala Leu Asp Asn Val Ile Asp Leu Asn Phe Tyr Pro
 595 600 605
 Leu Pro Phe Ala Gln Ile Thr Asn Gln Arg Tyr Arg Ser Ile Gly Leu
 610 615 620
 Gly Val Ser Gly Tyr His His Ala Leu Ala Ile Arg Asn Ile Arg Trp
 625 630 635 640
 Glu Ser Glu Glu His Leu Arg Phe Val Asp Arg Val Phe Glu Gln Ile
 645 650 655
 Asn Tyr Ala Ala Ile Glu Ala Ser Ala Asp Leu Ala Lys Glu Lys Gly
 660 665 670
 Arg Tyr Glu Tyr Phe Glu Gly Ser Asp Trp Gln Thr Gly Ala Tyr Phe
 675 680 685
 Gly Lys Arg Gly Tyr Thr Ser Pro Glu Trp Asn Arg Leu Ala Ala Lys
 690 695 700
 Val Ala Glu Asn Gly Met Arg Asn Ala Tyr Leu Leu Ala Ile Ala Pro
 705 710 715 720
 Thr Ser Ser Thr Ser Ile Ile Ala Gly Thr Thr Ala Gly Thr Asp Pro
 725 730 735
 Val Met Lys Arg Phe Phe Leu Glu Glu Lys Lys Gly Ala Met Leu Pro

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<210> 9923
<211> 234
<212> PRT
<213> B.fragilis
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<210> 9924
<211> 79
<212> PRT
<213> B.fragilis
```

```
<400> 9924
Arg Lys Arg Ile Lys Val Thr Thr Ala Ile His Met Ala Pro Ser Thr
1           5           10           15
```

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Thr Gly Leu Leu His Pro Met Glu Leu Val Asp Glu Leu Thr Ser Glu
      20                      25                      30
Ser Pro Tyr Met Lys Thr Gly Lys Lys Met Ala Glu Val Met Lys Pro
      35                      40                      45
Gly Ile Ser Lys Gly Thr Pro Val Pro Phe Thr Cys Ser Phe Cys Thr
      50                      55                      60
Met Ala Val Thr Ile Arg Ala Arg Ile Pro Ile Gly Met Leu Thr
      65                      70                      75

```

<210> 9925

<211> 470

<212> PRT

<213> B.fragilis

<400> 9925

```

Met Cys Thr Phe Ala Pro Gln Ile Ser Met Asn Met Gln Glu Ser Lys
1      5      10      15
Ser Ile Ile Glu Val Asn Gly Val Ser Lys Phe Phe Gly Glu Lys Thr
      20      25      30
Ala Leu Asp His Val Thr Leu Asn Val Lys Lys Gly Glu Phe Val Thr
      35      40      45
Ile Leu Gly Pro Ser Gly Cys Gly Lys Thr Thr Leu Leu Arg Leu Ile
      50      55      60
Ala Gly Phe Gln Thr Ala Ser Glu Gly Glu Ile Lys Ile Ser Gly Lys
65      70      75      80
Glu Ile Thr Gln Thr Pro Pro His Lys Arg Pro Val Asn Thr Val Phe
      85      90      95
Gln Lys Tyr Ala Leu Phe Pro His Leu Asn Val Tyr Asp Asn Ile Ala
      100     105     110
Phe Gly Leu Lys Leu Lys Lys Met Pro Lys Gln Thr Ile Glu Lys Lys
      115     120     125
Val Lys Ala Ala Leu Lys Met Val Gly Met Thr Asp Tyr Glu Tyr Arg
      130     135     140
Asp Val Asp Ser Leu Ser Gly Gly Gln Gln Gln Arg Val Ala Ile Ala
145     150     155     160
Arg Ala Ile Val Asn Glu Pro Glu Val Leu Leu Asp Glu Pro Leu
      165     170     175
Ala Ala Leu Asp Leu Lys Met Arg Lys Asp Met Gln Met Glu Leu Lys
      180     185     190
Glu Met His Lys Ser Leu Gly Ile Thr Phe Val Tyr Val Thr His Asp
      195     200     205
Gln Glu Glu Ala Leu Thr Leu Ser Asp Thr Ile Val Val Met Ser Glu
      210     215     220
Gly Arg Ile Gln Gln Ile Gly Thr Pro Ile Asp Ile Tyr Asn Glu Pro
225     230     235     240
Ile Asn Ser Phe Val Ala Asp Phe Ile Gly Glu Ser Asn Ile Leu Asn
      245     250     255
Gly Val Met Ile His Asp Lys Leu Val Arg Phe Cys Asn Thr Glu Phe
      260     265     270
Glu Cys Val Asp Glu Gly Phe Gly Glu Asn Met Pro Val Asp Val Val
      275     280     285
Ile Arg Pro Glu Asp Leu Tyr Ile Phe Pro Val Ser Glu Ala Ala Gln
      290     295     300
Leu Thr Gly Met Val Gln Ser Ser Val Phe Lys Gly Val His Tyr Glu
305     310     315     320
Met Thr Val Leu Cys Asn Gly Tyr Glu Phe Leu Val Gln Asp Tyr His
      325     330     335
His Phe Glu Val Gly Ala Leu Val Gly Leu Leu Val Lys Pro Phe Asp
      340     345     350

```



```

Ile His Ile Met Lys Lys Glu Arg Val Cys Asn Thr Phe Glu Gly Lys
    355                      360                      365
Leu Ile Asp Glu Thr His Val Glu Phe Leu Gly Cys Asn Phe Glu Cys
    370                      375                      380
Ala Pro Val Thr Gly Ile Glu Ala Gly Ser Glu Val Lys Val Glu Val
    385                      390                      395                      400
Gly Phe Asp Asn Val Ile Leu Gln Asp Asn Glu Glu Asp Gly Ala Leu
    405                      410                      415
Thr Gly Glu Val Lys Phe Ile Leu Tyr Lys Gly Asp His Tyr His Leu
    420                      425                      430
Thr Val Leu Ser Asp Trp Asp Glu Asn Val Phe Val Asp Thr Asn Asp
    435                      440                      445
Val Trp Asp Asp Gly Asp Arg Val Gly Ile Thr Ile Pro Pro Asp Gly
    450                      455                      460
Ile Arg Val Ile Lys Asn
    465                      470

```

<210> 9926

<211> 204

<212> PRT

<213> B.fragilis

<400> 9926

```

Ile Asn Glu Met Ala Ile Lys Phe Gln Tyr Asn Lys Thr Ser Phe Gln
1      5      10      15
Gln Leu Glu Lys Gln Leu Lys Val Arg Val Arg Thr Leu Pro Ile Ile
    20      25      30
Lys Asn Lys Glu Ser Ala Leu Arg Met Glu Val Lys Arg Cys Lys Ser
    35      40      45
Glu Ala Ala Asp Leu Glu Lys Arg Leu Glu Lys Gln Ile Gln Ala Tyr
    50      55      60
Glu Ala Met Phe Ala Leu Trp Asn Glu Phe Asp Thr Ser Leu Ile Lys
    65      70      75      80
Val Asn Asp Val His Leu Gly Val Lys Lys Ile Ala Gly Val Arg Val
    85      90      95
Pro Leu Leu Glu Asn Val Asp Phe Glu Ile Arg Pro Tyr Ser Leu Phe
    100     105     110
Asn Ala Pro Lys Trp Tyr Ala Asp Gly Ile His Leu Leu Lys Glu Leu
    115     120     125
Ala His Thr Ala Ile Glu Arg Glu Phe Thr Leu Ala Lys Leu Gly Leu
    130     135     140
Leu Glu His Ala Arg Lys Lys Thr Thr Gln Lys Val Asn Leu Phe Glu
    145     150     155     160
Lys Val Gln Ile Pro Gly Tyr Gln Asp Ala Leu Arg Lys Ile Lys Arg
    165     170     175
Phe Met Glu Asp Glu Glu Asn Leu Ser Lys Ser Ser Gln Lys Ile Leu
    180     185     190
Lys Ser Gln Gln Glu Lys Arg Lys Glu Ala Glu Ala
    195     200

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<210> 9927

<211> 439

<212> PRT

<213> B.fragilis

<400> 9927

```

Ala Asn Ile Val Asn Thr Glu Thr Lys Glu Gln Ile Leu Ala Ala Leu
1      5      10      15
Gly Asp Ile Leu Lys Asn Pro Glu Val Tyr Lys Asn Ser Glu Ile Trp

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```
<210> 9928
<211> 593
<212> PRT
<213> B.fragilis
```

<400> 9928

Asn	Leu	Val	Val	Asn	Ala	Cys	Leu	Cys	Tyr	Phe	Ala	Tyr	Ile	Phe	Cys
1				5					10					15	
Ile	Lys	His	Tyr	Phe	Ser	Ile	Asn	Asn	Ala	Tyr	Phe	Cys	Thr	Cys	Val
			20					25					30		
Ile	Lys	Arg	Val	Leu	Asn	Ile	Tyr	Met	Val	Lys	Asp	Leu	Leu	Thr	Pro
		35					40					45			
Asp	Tyr	Ile	Phe	Glu	Ala	Ser	Trp	Glu	Val	Cys	Asn	Lys	Val	Gly	Gly
	50					55				60					
Ile	Tyr	Thr	Val	Leu	Ser	Thr	Arg	Ala	Asn	Thr	Leu	Gln	Thr	Asn	Phe
65					70					75					80
Arg	Asp	Lys	Leu	Phe	Phe	Ile	Gly	Pro	Asp	Val	Trp	Gln	Gly	Lys	Asp
				85					90					95	
Asn	Pro	Leu	Phe	Ile	Glu	Ser	Asp	Asn	Leu	Cys	Ala	Ala	Trp	Lys	Glu
			100					105					110		
His	Ala	Leu	Lys	Lys	Asp	Asp	Leu	Ser	Val	Arg	Val	Gly	Arg	Trp	Asn
		115					120					125			
Ile	Pro	Gly	Glu	Pro	Ile	Val	Ile	Leu	Val	Asp	Phe	Gln	Pro	Phe	Phe
	130					135					140				
Glu	Lys	Lys	Asn	Glu	Ile	Tyr	Thr	Glu	Met	Trp	Asn	His	Phe	Gln	Val
145					150					155					160
Asp	Ser	Leu	His	Ala	Tyr	Gly	Asp	Tyr	Asp	Glu	Ala	Ser	Met	Phe	Ser
			165						170					175	
Tyr	Ala	Ala	Gly	Lys	Val	Val	Glu	Ser	Phe	Tyr	Arg	Tyr	Asn	Leu	Thr
			180					185					190		
Glu	Asn	Asp	Lys	Val	Ile	Tyr	Gln	Ala	His	Glu	Trp	Met	Thr	Gly	Leu
		195					200					205			
Gly	Ala	Leu	Tyr	Leu	Gln	Leu	Ala	Val	Pro	Glu	Ile	Gly	Thr	Ile	Phe
	210					215					220				
Thr	Thr	His	Ala	Thr	Ser	Ile	Gly	Arg	Ser	Ile	Ala	Gly	Asn	Asp	Lys
225					230					235					240
Pro	Leu	Tyr	Asp	Tyr	Leu	Phe	Ala	Tyr	Asn	Gly	Asp	Gln	Met	Ala	Gln
			245						250					255	
Glu	Leu	Asn	Met	Gln	Ser	Lys	His	Ser	Ile	Glu	Lys	Gln	Thr	Ala	His
		260						265					270		
His	Val	Asp	Cys	Phe	Thr	Thr	Val	Ser	Glu	Ile	Thr	Asn	Asn	Glu	Cys
	275						280					285			
Lys	Glu	Leu	Leu	Asp	Lys	Ala	Ala	Asp	Val	Val	Leu	Met	Asn	Gly	Phe
	290					295					300				
Glu	Asp	Asp	Phe	Val	Pro	Gln	Gly	Ser	Ala	Phe	Thr	Gly	Lys	Arg	Lys
305					310					315					320
Arg	Ala	Arg	Ala	Leu	Met	Leu	Asn	Val	Ala	Asn	Lys	Leu	Leu	Gly	Thr
				325					330					335	
His	Met	Asp	Asp	Asp	Thr	Leu	Ile	Ile	Gly	Thr	Ser	Gly	Arg	Tyr	Glu
		340					345						350		
Phe	Lys	Asn	Lys	Gly	Ile	Asp	Val	Phe	Leu	Glu	Ser	Leu	Asn	Arg	Leu
		355				360						365			
Asn	Arg	Asp	Lys	Asp	Leu	Gln	Lys	Asn	Val	Leu	Ala	Phe	Val	Asn	Val
	370					375					380				
Pro	Gly	Trp	Val	Gly	Glu	Pro	Arg	Glu	Asp	Leu	Gln	Thr	Arg	Leu	Lys
385					390					395					400
Ser	Lys	Glu	Lys	Phe	Asp	Thr	Pro	Leu	Glu	Val	Pro	Phe	Ile	Thr	His
			405						410					415	
Trp	Leu	His	Asn	Met	Thr	His	Asp	Gln	Val	Leu	Asp	Met	Leu	Lys	Tyr
		420					425						430		
Leu	Gly	Met	Gly	Asn	Arg	Pro	Glu	Asp	Lys	Val	Lys	Val	Ile	Phe	Val
	435						440					445			
Pro	Cys	Tyr	Leu	Asp	Gly	Lys	Asp	Gly	Ile	Leu	Asn	Lys	Glu	Tyr	Tyr
	450					455						460			

Asp Leu Ile Leu Gly Glu Asp Leu Ser Val Tyr Pro Ser Tyr Tyr Glu
 465 470 475 480
 Pro Trp Gly Tyr Thr Pro Leu Glu Ser Val Ala Phe Arg Val Pro Thr
 485 490 495
 Ile Thr Thr Asp Leu Ala Gly Phe Gly Leu Trp Val Asn Ser Leu Lys
 500 505 510
 Asn Gln His Gly Ile Asp Asn Gly Val Glu Val Leu His Arg Ser Asp
 515 520 525
 Tyr Asn Tyr Ser Glu Val Ala Asp Gly Ile Lys Asp Thr Ile Ala Leu
 530 535 540
 Phe Ser Gly Lys Thr Asp Asn Glu Val Lys Glu Ile Arg Lys Gln Ala
 545 550 555 560
 Ala Ala Val Ala Glu Gln Ala Leu Trp Lys His Phe Ile Lys Tyr Tyr
 565 570 575
 Tyr Glu Ala Tyr Asp Ile Ala Leu Arg Asn Ala Met Lys Arg Gln Leu
 580 585 590
 Asn

<210> 9929

<211> 268

<212> PRT

<213> B.fragilis

<400> 9929

Glu Leu Arg Val Lys Arg Leu Ser Val Phe Phe Ser Ser Arg Lys Ser
 1 5 10 15
 Trp Thr Leu Pro Tyr Ile Ile Phe Ser Ala Ile Phe Val Val Ile Pro
 20 25 30
 Leu Leu Leu Ile Val Val Tyr Ala Phe Thr Asp Asp Ser Gly His Leu
 35 40 45
 Thr Leu Glu Asn Phe Ala Lys Phe Phe Gln His His Glu Ala Ile Asn
 50 55 60
 Thr Phe Val Tyr Ser Ile Gly Ile Ala Ile Ile Thr Thr Ile Val Cys
 65 70 75 80
 Ile Leu Leu Gly Tyr Pro Ala Ala Trp Ile Leu Ser Asn Ala Lys Leu
 85 90 95
 Asn Arg Ser Lys Thr Met Val Val Leu Phe Ile Leu Pro Met Trp Val
 100 105 110
 Asn Ile Leu Val Arg Thr Leu Ala Thr Val Ala Leu Phe Asp Phe Phe
 115 120 125
 Ser Val Pro Leu Gly Glu Gly Ala Leu Ile Phe Gly Met Val Tyr Asn
 130 135 140
 Phe Ile Pro Phe Met Ile Tyr Pro Ile Tyr Asn Thr Leu Gln Lys Met
 145 150 155 160
 Asp His Ser Tyr Ile Glu Ala Ala Gln Asp Leu Gly Ala Asn Pro Val
 165 170 175
 Gln Val Phe Phe Lys Ala Val Leu Pro Leu Ser Met Pro Gly Val Met
 180 185 190
 Ser Gly Ile Met Met Val Phe Met Pro Thr Ile Ser Thr Phe Ala Ile
 195 200 205
 Ala Glu Leu Leu Thr Met Asn Asn Ile Lys Leu Phe Gly Thr Thr Ile
 210 215 220
 Gln Glu Asn Ile Asn Asn Ser Met Trp Asn Tyr Gly Ala Ala Leu Ser
 225 230 235 240
 Leu Ile Met Leu Leu Leu Ile Ala Ala Thr Ser Leu Phe Ser Thr Asp
 245 250 255
 Asp Lys Asp Asn Thr Asn Glu Gly Gly Gly Leu Trp
 260 265

<210> 9930
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 9930
 Val Ala Met Val Leu Gly Val Ser Cys Val Ala Val Thr Gly Ser Leu
 1 5 10 15
 Thr Trp Gln Leu Ser Val Val Glu Ala Val Ala Ser Met Val Leu Val
 20 25 30
 Thr Asn Ile Ser Phe Tyr Phe Phe Leu Asn Leu Cys Asp Thr Tyr Met
 35 40 45
 Leu Leu Phe Arg Ile Ser Gly Val Trp Glu Glu Met Trp Leu Met Cys
 50 55 60
 Gln Tyr Ser Val Ser Ile Ser Val
 65 70

<210> 9931
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 9931
 Gln Ile Leu Leu Ile Val Leu Ile Ile Phe Ser Met Asn Ile Phe Ile
 1 5 10 15
 Ala Gly Ile Ser Tyr Asn Leu Ser Asn Ala Asp Leu Gly Glu Leu Phe
 20 25 30
 Glu Glu Phe Gly Glu Val Ile Ser Ala Lys Ile Val Met Asp Arg Glu
 35 40 45
 Thr Gly Arg Ser Lys Gly Phe Gly Phe Val Glu Met Pro Asn Asp Glu
 50 55 60
 Glu Gly Asn Ala Ala Ile Ala Ala Leu Asn Glu Lys Glu Ile Asp Gly
 65 70 75 80
 Lys Thr Leu Ala Val Ser Val Ala Arg Pro Arg Glu Glu Gly Pro Arg
 85 90 95
 Arg Asn Ser Asn Tyr Gly Gly Gly Asn Arg Gly Gly Tyr Gly Asn Asn
 100 105 110
 Arg Gly Gly Gly Tyr Gly Gly Gly Asn Arg Gly Gly Gly Tyr Gly Gly
 115 120 125
 Gly Arg Asp Arg Tyr
 130

<210> 9932
 <211> 688
 <212> PRT
 <213> B.fragilis

<400> 9932
 Asn Thr Leu Phe Glu Ala Ile Tyr Gly Leu Ser Arg Phe Glu Val Gly
 1 5 10 15
 Ser Leu Leu Ala Gln Ile Ala Tyr Ile Cys Cys His Ser Phe Ile Tyr
 20 25 30
 Cys Thr Ser Tyr Met Arg Tyr Cys Ile Leu Ile Phe Gly Phe Ile Leu
 35 40 45
 Leu Phe Phe Leu Pro Val Gly Cys Lys Gln Ser Ser Thr Val Thr Pro
 50 55 60
 Leu Ser Phe Lys Glu Trp Met Thr His His Pro Gly Glu Cys Ile Glu
 65 70 75 80

His Tyr Met Gly Leu His Asp Ser Leu Phe Glu Ala Gly Arg Tyr Asp
 85 90 95
 Met Leu Thr Asp Ile Tyr Ser Gly Met Phe Leu Tyr Met Pro Ser Asp
 100 105 110
 Pro Asp Gly Asn Pro Asp Thr Leu Arg Arg Gln Leu Leu Arg Ile Met
 115 120 125
 Pro Leu Tyr Asn Gln Val Leu Ser Lys Thr Gly Ala Tyr Glu Ala Ala
 130 135 140
 Val Gln Leu Leu Asp Ser Ile Arg Leu Ser Gly His Pro Phe Leu Thr
 145 150 155 160
 Gly Tyr Cys Ala Tyr Pro Leu Trp Ala Phe Glu Ala Gln Asn Ser Leu
 165 170 175
 Met Thr Asp Asp Asn Arg Arg Thr Glu Ala Leu Ala Asp Ser Phe Ala
 180 185 190
 Val Leu Leu Pro Pro Asp Asp Gln Ser Val Val Met Leu Cys Cys His
 195 200 205
 Met Val Ser Trp Ala Tyr His Phe Ser Ser Ala Arg Pro Asn Val Ala
 210 215 220
 Cys Arg Met Gln Glu Arg Ala Val Glu Ala Tyr Arg Arg Gly Gly Glu
 225 230 235 240
 Thr Gln Asp Val Gly Ala Ile Leu Ala Arg Leu Gly Tyr Tyr Tyr Arg
 245 250 255
 Arg Glu Gly Arg Tyr Val Lys Ala Val Asp Leu Ser Leu Ala Ala Val
 260 265 270
 Glu Trp Tyr Asp Lys His Pro Gly Ile Ala Thr Asp Gly Met Ile Arg
 275 280 285
 Ala Tyr Ala Asp Leu Ala Ala Leu Tyr Ser Thr Leu Ala Leu Thr Glu
 290 295 300
 Lys Ala Leu Glu Ile Asn Ala Arg Val Ile Arg Met Ala Ala Arg Glu
 305 310 315 320
 Asp Ser Met Ala Leu Cys Gly Ala Tyr Arg Val Arg Ser Ser Phe Phe
 325 330 335
 Met Asp Leu Glu Gln Val Asp Ser Ala Ala Phe Tyr Leu Gly Lys Glu
 340 345 350
 Arg Glu Val Ala Gln Arg Met Gly Glu Arg Ser Leu Lys Thr Trp Leu
 355 360 365
 Arg Asp Arg Ala Lys Tyr Trp Leu Gln Met Cys Pro Asp Ser Asn Ala
 370 375 380
 Ala Ala Leu Arg Asp Met Glu Ala Ile Phe Ala Asp Ser Ala Gly Val
 385 390 395 400
 Arg Pro Ala Thr His Ser Gly Thr Arg Tyr Trp Leu Gly Leu Ala Leu
 405 410 415
 Val Arg Asp Gly Gln Glu Glu Arg Gly Leu Ala Met Met Glu Gln Ala
 420 425 430
 His Cys Glu Phe Ala Tyr Met Asp Trp Asp Glu Met Glu Ala Phe Ala
 435 440 445
 Ala Lys Gly Leu Leu Gly Ile Tyr Ala Ser Arg His Leu Gly Ser Arg
 450 455 460
 Met Leu Glu Phe Tyr Pro Arg Tyr Ala Ala Leu Gln Asp Ser Leu Asn
 465 470 475 480
 Glu Lys Asp Lys Leu Arg Tyr Thr Ala Ala Asn Val Arg Tyr Asp
 485 490 495
 Thr Gly Arg Lys Glu Gln Glu Tyr Arg Ala Leu Met Ala Glu Val Glu
 500 505 510
 Leu Lys Glu Arg Thr Leu Thr Tyr Ile Gly Ile Val Val Val Leu Leu
 515 520 525
 Phe Met Leu Leu Gly Leu Val Val Val Tyr Met Leu Gln Arg Arg Arg
 530 535 540
 His Tyr Arg Arg Glu Ala His Leu His Arg Glu Arg Leu Ser Arg Leu

545 550 555 560
 Ile Ser Ile His Gln Glu Leu Asn Gly Arg Tyr Glu Ser Leu Asn Asn
 565 570 575
 Glu Leu Glu Lys Val Ala His Ala Asp Val Ile Asp Asn Val Arg Gln
 580 585 590
 Lys Leu Asn Pro Met Leu Leu Ser Gly Asp Asp Glu Ile Arg Phe Arg
 595 600 605
 Gln Ser Phe Ala Ala Leu Tyr Pro His Tyr Leu Pro Val Leu Arg Cys
 610 615 620
 Gln Cys Pro Glu Leu Thr Arg Asn Asp Glu Leu Leu Cys Met Leu Ile
 625 630 635 640
 Arg Leu Asn Gln Ser Thr Asp Glu Ile Ala Leu Ala Leu Gly Ile Ser
 645 650 655
 Arg Ala Ser Val Asn Ser Gly Arg Ser Arg Ile Arg Lys Lys Leu Gly
 660 665 670
 Leu Gly Lys Asp Glu Ser Leu Glu Ala Tyr Leu Gln Asn Ile Lys Lys
 675 680 685

<210> 9933
 <211> 163
 <212> PRT
 <213> B.fragilis

<400> 9933
 Asn Asn Lys Leu Lys Asn Lys Ile Lys Ile Met Glu Met Asn Leu Phe
 1 5 10 15
 Ile Ala Tyr Ile Gly Ile Ala Val Met Val Gly Leu Ser Gly Ile Gly
 20 25 30
 Ser Ala Tyr Gly Val Thr Ile Ala Gly Asn Ala Ala Ile Gly Ala Leu
 35 40 45
 Lys Lys Asn Asp Ser Ala Phe Gly Asn Phe Leu Val Leu Thr Ala Leu
 50 55 60
 Pro Gly Thr Gln Gly Leu Tyr Gly Phe Ala Gly Tyr Phe Met Phe Gln
 65 70 75 80
 Thr Ile Phe Gly Ile Leu Thr Pro Gln Ile Thr Ala Ile Gln Ala Ser
 85 90 95
 Ala Val Leu Gly Ala Gly Ile Ala Leu Gly Leu Val Ala Leu Phe Ser
 100 105 110
 Ala Ile Arg Gln Gly Gln Val Cys Ala Asn Gly Ile Ala Ala Ile Gly
 115 120 125
 Gln Gly His Asn Val Phe Ser Asn Thr Leu Ile Leu Ala Val Phe Pro
 130 135 140
 Glu Leu Tyr Ala Ile Val Ala Leu Ala Ala Thr Phe Leu Ile Gly Ser
 145 150 155 160
 Ala Leu Ala

<210> 9934
 <211> 540
 <212> PRT
 <213> B.fragilis

<400> 9934
 Gln Leu Lys Leu Thr Phe Leu Phe Met Phe Thr Asp Leu Leu His Ser
 1 5 10 15
 Ser Tyr Phe Ser Leu Phe Leu Ile Val Ala Leu Gly Phe Met Leu Gly
 20 25 30
 Arg Ile Lys Ile Lys Gly Leu Ser Leu Asp Val Ser Ala Val Ile Phe
 35 40 45

Ile Ala Leu Leu Phe Gly His Phe Gly Val Ile Ile Pro Lys Glu Leu
 50 55 60
 Gly Asn Phe Gly Leu Val Leu Phe Ile Phe Thr Ile Gly Ile Gln Ala
 65 70 75 80
 Gly Pro Gly Phe Phe Asp Ser Phe Arg Ser Lys Gly Lys Thr Leu Ile
 85 90 95
 Ile Ile Thr Met Leu Ile Ile Ser Ser Ala Cys Leu Thr Ala Val Gly
 100 105 110
 Leu Lys Tyr Ala Phe Gly Ile Asp Thr Pro Ser Val Val Gly Leu Val
 115 120 125
 Ala Gly Ala Leu Thr Ser Thr Pro Gly Leu Ala Val Ala Ile Asp Ser
 130 135 140
 Thr Asn Ser Pro Leu Ala Ser Ile Ala Tyr Gly Ile Ala Tyr Pro Phe
 145 150 155 160
 Gly Val Ile Gly Val Ile Leu Phe Val Lys Leu Leu Pro Lys Ile Met
 165 170 175
 Arg Ile Asp Leu Asp Lys Glu Ala Arg Arg Leu Glu Ile Glu Arg Arg
 180 185 190
 Gly Gln Phe Pro Glu Leu Gly Thr Cys Ile Tyr Arg Ile Thr Asn Pro
 195 200 205
 Ser Val Phe Gly Arg Ser Leu Met Gln Ile Asn Ala Arg Ala Met Thr
 210 215 220
 Gly Ala Val Ile Ser Arg Leu Lys His Gln Glu Glu Ile Ser Ile Pro
 225 230 235 240
 Thr Ala His Thr Val Leu His Glu Gly Asp Tyr Ile Gln Ala Val Gly
 245 250 255
 Ser Glu Glu Ala Leu Thr Gln Leu Ala Val Leu Val Gly Glu Arg Glu
 260 265 270
 Glu Gly Glu Leu Pro Leu Glu Asn Thr Gln Glu Ile Glu Ser Leu Leu
 275 280 285
 Leu Thr Lys Lys Asp Met Ile Asn Lys Gln Leu Gly Asp Leu Asn Leu
 290 295 300
 Met Lys Asn Phe Gly Cys Thr Val Thr Arg Val Arg Arg Ser Gly Ile
 305 310 315 320
 Asp Leu Ser Pro Ser Pro Asp Leu Ala Leu Lys Phe Gly Asp Lys Leu
 325 330 335
 Met Val Val Gly Glu Lys Glu Gly Ile Lys Gly Val Ala Arg Leu Leu
 340 345 350
 Gly Asn Asn Ala Lys Lys Leu Ser Asp Thr Asp Phe Phe Pro Ile Ala
 355 360 365
 Met Gly Ile Val Leu Gly Val Leu Phe Gly Lys Leu Asn Ile Ser Phe
 370 375 380
 Pro Gly Gly Leu Ser Phe Ser Pro Gly Leu Thr Gly Gly Val Leu Met
 385 390 395 400
 Val Ala Leu Leu Leu Ser Ala Ile Gly Lys Thr Gly Pro Ile Leu Trp
 405 410 415
 Ser Met Ser Gly Pro Ala Asn Gln Leu Leu Arg Gln Leu Gly Leu Leu
 420 425 430
 Leu Phe Leu Ala Glu Val Gly Thr Ser Ala Gly Lys Asn Leu Val Ala
 435 440 445
 Thr Phe Gln Glu Ser Gly Leu Leu Leu Phe Gly Val Gly Ala Ala Ile
 450 455 460
 Thr Leu Val Pro Met Leu Ile Ala Ala Phe Val Gly Arg Leu Val Phe
 465 470 475 480
 Lys Ile Ser Leu Leu Asp Leu Leu Gly Thr Ile Thr Gly Gly Met Thr
 485 490 495
 Ser Thr Pro Gly Leu Ala Ala Ala Asp Ser Met Val Asp Ser Asn Ile
 500 505 510
 Pro Ser Val Ala Tyr Ala Thr Val Tyr Pro Ile Ala Met Val Phe Leu

515 520 525
 Ile Leu Phe Ile Gln Val Ile Ala Thr Val Val Tyr
 530 535 540

<210> 9935
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 9935
 Val Glu Tyr Pro Asp Ala Gly His Gly Ala Arg Trp Lys Arg Glu Val
 1 5 10 15
 Gly Lys Glu Lys Tyr Leu Asn Leu Phe Leu Asp Pro Ser Thr Thr Arg
 20 25 30
 Arg Glu Asn Ser Tyr Ile Ser Ala Val Ser Tyr Val Leu Asp Tyr Val
 35 40 45
 Leu Ile Asn Asp Val Ile Ile Glu Ile Ile Gly Ile Ser Leu Ser Val
 50 55 60
 Leu
 65

<210> 9936
 <211> 75
 <212> PRT
 <213> B.fragilis

<400> 9936
 Tyr Thr Asp Pro Ser Leu Leu Arg Val Thr Gly Leu Arg His Phe Pro
 1 5 10 15
 Leu Ala Ser Met Val Ser Met Ala Lys Pro Ser Cys Ala Leu Ala Asn
 20 25 30
 Ser Thr Phe Ser Val Ile Lys Asp Gly Thr Val Gly Leu Trp Phe Glu
 35 40 45
 Gln Ala Thr His Ile Ile Ala Gln Ala Ala Pro Asn Lys Gly Phe Lys
 50 55 60
 Phe Met Phe Tyr Cys Phe Phe Met Val Lys Glu
 65 70 75

<210> 9937
 <211> 67
 <212> PRT
 <213> B.fragilis

<400> 9937
 Leu Gly Leu Phe Lys Gln Val Asp Glu Ile Pro Val Ile Asn Asp His
 1 5 10 15
 Glu Gly Phe Pro Leu Pro Asp Phe Pro Val Pro Asp Gly Val Gly Ile
 20 25 30
 Phe Met Arg Glu Met Val Phe Phe Thr Glu Cys Ala Lys Pro Val Ile
 35 40 45
 Ala Leu Asp Arg Phe Phe Phe Phe Leu Asn His Tyr Asp Met Ile
 50 55 60
 Ile Phe Leu
 65

<210> 9938
 <211> 519
 <212> PRT
 <213> B.fragilis

<400> 9938

Ile	Phe	Phe	Pro	Ser	Met	Ser	Lys	Ile	Pro	Pro	Gln	Arg	Ile	Ser	Ala
1				5					10					15	
Leu	Phe	His	Val	Phe	Lys	Leu	Phe	Asn	Ser	Asn	His	Thr	Ser	Phe	Leu
			20					25					30		
Trp	Phe	Ser	Leu	Ile	Met	Gly	Ser	Lys	Asp	Ile	Gln	Asn	Phe	Val	Phe
			35				40					45			
Leu	Leu	Leu	Ile	His	Phe	Ile	Asn	Tyr	Leu	Phe	Ile	Val	Ala	Cys	His
			50			55					60				
Tyr	Arg	Thr	Phe	Gln	Leu	Gln	Gly	Ile	Ser	Gln	Phe	Pro	Phe	Phe	His
65					70					75					80
Ala	Glu	Arg	Phe	Gly	Lys	Gln	Arg	Lys	Ser	Phe	Asn	Leu	Phe	Val	Met
				85					90					95	
Gly	Lys	Leu	Leu	Leu	Gln	Arg	Ile	Asp	Thr	Cys	Ala	Glu	Gln	Ser	Ser
				100				105					110		
Asn	Phe	Arg	Met	Leu	Gln	Gln	Phe	Gly	His	Ile	Phe	Val	Phe	Asp	Ala
			115				120					125			
Phe	Leu	Phe	Gly	Ile	Leu	Phe	His	Lys	Thr	Val	Tyr	Arg	Tyr	Asn	Gln
	130				135						140				
Cys	Arg	Tyr	Lys	Leu	Thr	Leu	Val	Gly	Asn	Asn	Ser	Tyr	Leu	Ile	Asp
145				150					155						160
Ile	Thr	Val	Asp	Asn	Gln	Phe	Gly	Phe	Gln	Cys	Leu	Arg	Ser	Asp	Ile
				165					170					175	
Phe	Ser	Val	Arg	Cys	Leu	Lys	Gln	Val	Phe	Asp	Thr	Leu	Cys	Gln	Ile
			180				185						190		
Gln	Leu	Pro	Ile	Phe	Lys	Ile	Ala	Gly	Ile	Thr	Gly	Met	Lys	Pro	Thr
			195				200					205			
Phe	Phe	Ile	Asp	Gly	Cys	Ser	Arg	Arg	Phe	Arg	Leu	Phe	Ile	Ile	Pro
	210				215						220				
Phe	Arg	Asp	Gly	Leu	Ser	Thr	Lys	Gln	Asn	Leu	Val	Ile	Phe	Ala	Asp
225				230					235						240
Leu	His	Phe	Tyr	Leu	Arg	His	His	Leu	Thr	Tyr	Arg	Thr	Asn	Ile	Ile
			245					250					255		
Thr	Arg	Leu	Arg	Ser	Thr	Arg	Asn	Ser	Cys	Arg	Arg	Phe	Cys	Gln	Thr
			260				265						270		
Ile	Ser	Asp	Gln	His	Ile	Asp	Thr	His	Arg	Met	Tyr	Lys	Leu	Ala	Asn
		275				280						285			
Phe	Ile	Gly	Asn	Ser	Ser	Thr	Gly	Cys	Arg	Glu	Glu	Val	Thr	Val	Leu
	290					295					300				
Tyr	Ser	Asp	Gly	Leu	Phe	Gln	Gln	Ser	Ile	Asp	Ser	Leu	Leu	Ile	Lys
305				310					315						320
Leu	Ile	Phe	Gln	Leu	Asn	His	Ser	Gly	Arg	Arg	Leu	Thr	His	Pro	Gln
			325					330						335	
Ile	Ile	Gln	Ile	Met	Asp	Thr	Ala	Tyr	Phe	Asn	Ser	Ile	Gln	His	Gln
			340				345						350		
His	Phe	Phe	Tyr	Ser	Gly	Gly	Leu	Gly	Tyr	Phe	Phe	Leu	Asn	Ala	Gly
	355						360					365			
Val	His	Leu	Leu	Pro	Lys	Thr	Arg	Asp	Thr	Thr	His	Gln	Cys	Arg	Thr
	370					375						380			
Asp	Phe	Phe	Asn	Gly	Cys	Leu	Asp	Ile	Gly	Arg	Thr	Lys	Ile	Asp	Ala
385				390					395						400
Asp	Leu	Tyr	Ala	Leu	Met	His	Thr	Glu	Ile	Ser	Pro	Cys	Leu	Leu	Lys
			405					410					415		
His	Met	Gly	Gln	Arg	Gln	Glu	Val	His	Arg	Asn	Ile	Leu	Ile	Gly	His
			420				425						430		
Ile	Tyr	Gln	Thr	Asp	Ile	Met	Asn	Thr	Glu	Cys	Phe	Gln	Ile	Ala	Arg
	435					440						445			
Met	Met	Gln	His	Asp	Ser	Phe	Arg	Phe	Ala	Arg	Ser	Thr	Gly	Arg	Ile

450		455		460
Gln Asp Val Cys Gln Ile Leu Gly Thr Gly Thr Cys Arg Thr Phe Phe				
465		470		475
His Tyr Phe Ile Val Trp Gln Ile Phe Ser Phe Ser Gln Lys Leu Val				480
		485		490
Ile Val Asn Arg Thr His Ile Thr Arg Ile Phe His Tyr Arg Arg Ile				495
		500		505
Lys Asn Asp Gln Leu Tyr Lys				510
		515		

<210> 9939

<211> 735

<212> PRT

<213> B.fragilis

<400> 9939

Lys Tyr Ile Pro Val Arg Ile Ser Tyr Asp Arg Phe His Tyr Leu Cys		
1	5	10
Thr Val Ala Arg Ile Val Lys Ile His Arg Gln Lys Lys Glu Arg Lys		
	20	25
Lys Gln Gln Thr Lys Asn Lys Thr Met Arg Thr Tyr Arg Phe Met Phe		
	35	40
Pro Val Leu Leu Ala Met Thr Ala Thr Gly Ser Leu Thr Ala Gly Pro		
	50	55
Ser Asp Lys Gly Ser Ser Gly Ile Arg Phe Pro Glu Val Asn Gln Val		
65	70	75
Lys Ile Glu Asp Thr Phe Trp Lys Pro Lys Leu Asn Leu Trp Gln Lys		
	85	90
Val Thr Val Asn Asp Val Phe Asp Lys Phe Glu Gly Lys His Leu Glu		
	100	105
His Pro Gly Glu Phe Cys Asn Thr Phe Glu Asn Phe Asp Arg Val Ala		
	115	120
Lys Gly Glu Arg Asn Ile Gly Arg His Ala Gly Ala Pro Trp Phe Asp		
	130	135
Gly Leu Val Tyr Glu Thr Ile Arg Gly Val Ala Asp Leu Met Ala Arg		
145	150	155
Gln Ser Asp Ala Ala Leu Glu Lys Arg Val Asp Gly Tyr Ile Asp Arg		
	165	170
Ile Ala Val Ala Gln Ala Ser Glu Pro Asn Gly Tyr Ile Asp Thr Tyr		
	180	185
Thr Gln Leu Met Glu Ala Asp His Gln Trp Gly Glu Arg Gly Gly Met		
	195	200
Leu Arg Trp Gln His Asp Val Tyr Asn Ala Gly Met Leu Val Glu Ala		
	210	215
Gly Val His Tyr Tyr Asn Ala Thr Gly Lys Thr Lys Leu Leu Glu Val		
225	230	235
Ala Thr Arg Cys Ala Asn Leu Met Ala Glu Tyr Met Gly Thr Phe Pro		
	245	250
Lys Lys Asn Val Val Pro Ala His Ser Gly Pro Glu Glu Ala Leu Val		
	260	265
Lys Leu Tyr Thr Leu Tyr Arg Asp Asn Pro Gly Leu Lys Lys Gln Ile		
	275	280
Asn Val Pro Val Val Glu Arg Glu Tyr Leu Arg Leu Ala Glu Phe Trp		
	290	295
Ile Glu Gly Arg Gly Lys His Cys Gly Phe Pro Leu Trp Gly Thr Trp		
305	310	315
Gly Asn Pro Ala Ala Glu Gln Trp Ile Arg Asp Arg Lys Tyr Glu Ala		
	325	330
Pro Glu Phe Gly Asn His Thr Arg Pro Ser Trp Gly Asp Tyr Ala Gln		

340 345 350
 Asp Ser Ile Pro Leu Phe Glu Gln Lys Thr Ile Glu Gly His Ala Val
 355 360 365
 Arg Ala Thr Leu Phe Ala Thr Gly Ala Thr Ala Ala Leu Glu Asn
 370 375 380
 Arg Ser Pro Glu Tyr Ile Ala Ala Val Ser Arg Leu Trp Asp Asn Met
 385 390 395 400
 Ile Gly Lys Arg Met Phe Ile Thr Gly Gly Val Gly Ala Val His Phe
 405 410 415
 Asp Glu Lys Phe Gly Pro Asp Tyr Phe Leu Pro Thr Asp Ala Tyr Leu
 420 425 430
 Glu Thr Cys Ala Ala Val Gly Ala Gly Phe Phe Ser Gln Arg Met Asn
 435 440 445
 Glu Leu Thr Gly Asp Ala Lys Tyr Met Asp Glu Leu Glu Arg Thr Leu
 450 455 460
 Tyr Asn Asn Val Leu Thr Gly Ile Ser Leu Ser Gly Thr Gln Tyr Thr
 465 470 475 480
 Tyr Gln Asn Pro Leu Asn Ser Ala Lys His Ala Arg Trp Gly Trp His
 485 490 495
 Asp Cys Pro Cys Cys Pro Pro Met Phe Leu Lys Met Met Ser Ala Met
 500 505 510
 Pro Gly Phe Ile Tyr Ser Gln Lys Gly Asp Asp Ile Tyr Val Asn Leu
 515 520 525
 Phe Ile Gly Ser Glu Thr Glu Leu Ser Leu Ser Asp Gln Ser Arg Ile
 530 535 540
 Arg Leu Thr Gln Lys Thr Gly Tyr Pro Trp Asp Gly Ser Val Val Met
 545 550 555 560
 Thr Val Glu Pro Glu Lys Glu Lys Thr Phe Leu Leu Lys Val Arg Ile
 565 570 575
 Pro Gly Trp Ala Gln Gly Val Glu Asn Pro Tyr Asp Leu Tyr Arg Ser
 580 585 590
 Gly Val Lys Ser Ala Val Asn Leu Lys Val Asn Gly Lys Ser Ile Ala
 595 600 605
 Met Lys Ile Phe Lys Gly Tyr Ala Glu Ile Gln Arg Lys Trp Lys Lys
 610 615 620
 Gly Asp Arg Val Glu Leu Thr Leu Pro Val Gln Pro Arg Leu Val Thr
 625 630 635 640
 Ala Asn Glu Ala Val Ala Asp Leu Gln Asn Lys Val Ala Ile Ala Ala
 645 650 655
 Gly Pro Phe Val Tyr Cys Leu Glu Gly Cys Asp Asn Glu Gly Val Ala
 660 665 670
 Asp Leu Arg Leu Asp Thr Arg Ala Pro Leu Ser Met Thr Phe Glu Lys
 675 680 685
 Glu Leu Leu Asn Gly Val Asn Val Ile Lys Gly Gln Ala Leu Asp Lys
 690 695 700
 Thr Gly Lys Lys Val Ser Val Ser Ala Ile Pro Tyr Tyr Ala Leu Gly
 705 710 715 720
 Asn Arg Gln Asp Lys Gly Tyr Val Val Trp Met Pro Ala Asn Lys
 725 730 735

<210> 9940

<211> 64

<212> PRT

<213> B.fragilis

<400> 9940

Thr Asn Thr Phe Lys Leu Leu Ile Leu Ile Asn Gln Arg Ala Val Ser
 1 5 10 15
 Lys Thr Leu Phe Thr Thr Asp Tyr Thr Asp Tyr His Arg Leu Ser Thr

<400> 9943																
Leu	Ile	Arg	Thr	Gly	Met	Tyr	Phe	Tyr	Tyr	Val	Thr	Lys	His	Ile	Arg	
1				5					10					15		
Tyr	Pro	Asp	Ser	Ser	Cys	Thr	Leu	Leu	Arg	Phe	Leu	Ser	Tyr	Leu	Cys	
			20					25					30			
Ser	Thr	Lys	Asn	Lys	Ser	Met	Lys	Arg	Asn	Glu	Ser	Lys	Tyr	Lys	Gln	
		35				40						45				
Val	Val	Asn	His	Val	Ile	Asp	Gly	Ile	Asn	Asn	Gly	Ser	Tyr	Lys	Lys	
	50				55						60					
Gly	Asp	Trp	Ile	Leu	Ser	Ile	Asn	Glu	Phe	Arg	Lys	Asn	Tyr	Asn	Leu	
65				70						75					80	
Ser	Arg	Asp	Thr	Val	Phe	Ala	Gly	Leu	Ser	Glu	Leu	Lys	Ser	Lys	Gly	

130		135		140
Glu Met Thr Ser Trp	Ala Leu Ala Ala His	Leu Asn Ala Gln Gln Ser		
145	150	155		160
His Arg Ser Leu Pro Asp Phe Lys Glu Asn Ile Ile Asp Leu Thr Ala				
	165	170		175
Gly Asp Leu Gly Ser Leu Leu Ala Trp Thr Tyr Tyr Tyr Met His Lys				
	180	185		190
Glu Phe Asp Lys Leu Asn Pro Ala Ile Ser Glu Arg Leu Arg His Thr				
	195	200		205
Leu Gln Gln Arg Ile Leu Asp Pro Tyr Met Asn Asn Asp His Phe Trp				
	210	215		220
Trp Met Ala Val Asn Tyr Arg Pro Gly Met Leu Val Asn Asn Trp Asn				
225	230	235		240
Pro Trp Cys Asn Ser Asn Ala Leu Met Cys Phe Met Leu Leu Glu Asn				
	245	250		255
Asp Lys Glu Met Leu Ala Lys Ala Ile Tyr Arg Ser Met Val Ser Val				
	260	265		270
Asp Lys Phe Ile Asn Tyr Thr His Thr Asp Gly Ala Cys Glu Glu Gly				
	275	280		285
Pro Ser Tyr Trp Gly His Ala Ala Gly Lys Met Phe Asp Tyr Leu Glu				
290	295	300		
Leu Leu Ser Ala Val Thr Gly Gly Thr Val Ser Ile Phe Asp Asn Pro				
305	310	315		320
Met Ile Lys Asn Met Gly Glu Tyr Ile Ser Arg Ser Tyr Val Gly Lys				
	325	330		335
Gly Trp Val Val Asn Phe Ala Asp Ala Ser Ala Lys Gly Ser Gly Asp				
	340	345		350
Ala Pro Leu Ile Phe Arg Tyr Gly Lys Ala Val Asn Ser Asn Glu Met				
	355	360		365
Lys Gly Phe Ala Ala Met Ile Asn Thr Asn Lys Leu Pro Ser Gly Arg				
370	375	380		
Asp Ile Tyr Arg Thr Leu Ala Ala Ile Lys Ile Ala Asn Glu Leu Lys				
385	390	395		400
Glu Thr Gln Ala Ala His Leu Thr Pro Pro Phe Ser Trp Tyr Pro Glu				
	405	410		415
Thr Glu Phe Cys Tyr Ile Thr Asp Asn Lys Gly Asn Phe Leu Ala Ala				
	420	425		430
Lys Gly Gly Tyr Asn Asp Glu Ser His Asn His Asn Asp Ala Gly Thr				
	435	440		445
Phe Ser Phe Trp Ile Asp Gln Thr Pro Phe Leu Ile Asp Ala Gly Val				
450	455	460		
Gly Thr Tyr Thr Arg Gln Thr Phe Ser Lys Asp Arg Tyr Thr Ile Trp				
465	470	475		480
Thr Met Gln Ser Asn Tyr His Asn Leu Pro Leu Ile Asn Gly Val Pro				
	485	490		495
Gln Lys Tyr Gly Ala Thr Tyr Lys Ala Thr His Val Gln Ala Asp Lys				
	500	505		510
Arg Lys Asn Thr Phe Thr Ala Asn Ile Ala Thr Ala Tyr Pro Ala Glu				
	515	520		525
Ala Glu Val Glu Ser Trp Ile Arg Ser Tyr Ser Leu Gln Lys Gly Gln				
530	535	540		
Leu Arg Ile Ser Asp Ser Phe Arg Leu Thr Thr Ala Lys Gln Pro Asn				
545	550	555		560
Gln Ile Asn Phe Met Thr Trp Gly Gln Val Asn Thr Glu Ile Pro Gly				
	565	570		575
Lys Ile Gln Leu Glu Val Lys Gly Lys Lys Ala Val Ile Glu Tyr Asp				
	580	585		590
Lys Gln Leu Phe Asp Val Lys Thr Glu Ile Ile Pro Leu Thr Asp Thr				
595	600	605		

Arg Leu Ser Asn Val Trp Gly Lys Ser Ile Cys Arg Ile Thr Leu Thr
 610 615 620
 Ala Thr Asn Ile Tyr Lys Thr Gly Asn Tyr Ser Phe Thr Ile Lys Lys
 625 630 635 640
 Gln

<210> 9945
 <211> 157
 <212> PRT
 <213> B.fragilis

<400> 9945
 Tyr Met Ser Gln Glu Ile Glu Arg Lys Phe Leu Val Ser Gly Asp Tyr
 1 5 10 15
 Lys Ser Gln Ala Phe Asp Gln Ser Arg Ile Val Gln Gly Tyr Ile Ser
 20 25 30
 Ser Ala Arg Gly Arg Thr Val Arg Val Arg Ile Arg Asp Gly Lys Gly
 35 40 45
 Tyr Leu Thr Ile Lys Gly Ala Ser Asp Ala Ser Gly Ile Ser Arg Tyr
 50 55 60
 Glu Trp Glu Lys Glu Leu Ser Leu Ala Glu Ala Glu Glu Leu Met Lys
 65 70 75 80
 Leu Cys Glu Pro Gly Val Ile Asp Lys Thr Arg Tyr Leu Val Arg Ser
 85 90 95
 Gly Lys His Ile Phe Glu Val Asp Glu Phe Tyr Gly Glu Asn Glu Gly
 100 105 110
 Leu Val Val Ala Glu Val Glu Leu Gly Ser Glu Asp Glu Val Phe Val
 115 120 125
 Lys Pro Gly Phe Ile Gly Glu Glu Val Thr Gly Asp Ile Arg Tyr Tyr
 130 135 140
 Asn Ser Gln Leu Met Lys Lys Pro Tyr Thr Thr Trp Leu
 145 150 155

<210> 9946
 <211> 393
 <212> PRT
 <213> B.fragilis

<400> 9946
 Pro Asp Gly Gln Gln Ser Pro Cys Leu Trp Ala Gln Ser Arg Thr Gly
 1 5 10 15
 Thr Ala Asp Arg Glu Ile Trp Val Lys Thr Leu Val Arg Leu Ala Asp
 20 25 30
 Pro Val Leu Ser Asn Leu Ala Asn Glu Thr Leu Lys Lys Glu Met Pro
 35 40 45
 Tyr Glu Ser Leu Ala Pro Asn Arg Gln Arg Phe Ser Tyr Leu Glu Ala
 50 55 60
 Val Gly Arg Thr Val Cys Gly Ile Ala Pro Trp Leu Glu Leu Gly Glu
 65 70 75 80
 Asp Asp Thr Pro Glu Gly Gln Leu Arg Lys Lys Tyr Ile Glu Leu Thr
 85 90 95
 Ala Lys Gly Ile Ser Asn Ala Val Asn Pro Ser Ser Pro Asp Tyr Leu
 100 105 110
 Ile Phe Gly Glu Pro Ser Gln Pro Leu Val Asp Ala Ala Phe Leu Ala
 115 120 125
 Glu Gly Leu Leu Arg Ala Pro Lys Gln Leu Trp Gly Asn Leu Ser Pro
 130 135 140
 Thr Ala Arg Lys Gln Val Val Thr Glu Leu Lys Arg Ser Arg Val Ile

145		150		155		160									
Lys	Pro	Asn	Glu	Ser	Asn	Trp	Leu	Leu	Phe	Ala	Ser	Ile	Val	Glu	Ala
		165							170					175	
Ala	Leu	Gln	Glu	Phe	Thr	Gly	Glu	Cys	Asp	Thr	Thr	Arg	Leu	Asn	Tyr
		180						185					190		
Gly	Val	Arg	Lys	Phe	Arg	Asp	Leu	Trp	Tyr	Lys	Gly	Asp	Ala	Gln	Tyr
	195						200					205			
Gly	Asp	Gly	Ala	Glu	Phe	His	Leu	Asp	Tyr	Tyr	Asn	Ser	Phe	Val	Ile
	210					215					220				
His	Pro	Met	Leu	Thr	Asp	Val	Leu	Val	Val	Met	Gln	Lys	His	Arg	Met
225					230					235					240
Pro	Glu	Ser	Glu	Phe	Leu	Asn	Val	Gln	Gln	Lys	Arg	Leu	Gly	Arg	Tyr
			245						250				255		
Ala	Glu	Gln	Leu	Glu	Arg	Phe	Ile	Ser	Pro	Glu	Gly	Thr	Tyr	Pro	Val
		260					265						270		
Ile	Gly	Arg	Ser	Ile	Val	Tyr	Arg	Thr	Gly	Val	Phe	His	Ala	Leu	Gly
	275					280					285				
Gln	Ala	Ala	Leu	Leu	His	Leu	Leu	Pro	Gln	Gln	Ile	Val	Pro	Ala	Gln
	290				295					300					
Val	Arg	Cys	Gly	Met	Thr	Lys	Val	Ile	Glu	Asn	Gln	Phe	Arg	Ser	Ala
305					310					315					320
Ala	Asn	Phe	Asp	Thr	Lys	Gly	Trp	Leu	Lys	Ile	Gly	Phe	Ser	Gly	Asn
			325						330					335	
Gln	Val	Gln	Met	Ser	Glu	Ser	Tyr	Ile	Asn	Thr	Gly	Ser	Thr	Tyr	Leu
		340					345						350		
Cys	Leu	Thr	Gly	Phe	Leu	Pro	Leu	Gly	Leu	Pro	Ala	Asp	Asp	Pro	Phe
	355					360					365				
Trp	Ser	Ala	Pro	Pro	Ala	Glu	Trp	Thr	Asn	Leu	Lys	Ala	Trp	Ser	Gly
	370					375					380				
Lys	Glu	Val	Pro	Thr	Asp	His	Ser	Leu							
385					390										

<210> 9947

<211> 696

<212> PRT

<213> B.fragilis

<400> 9947

Ser	Ile	His	Asn	Gln	Glu	His	Met	Lys	Gln	Gln	Lys	Cys	Asn	Tyr	Phe
1			5					10					15		
Pro	Ser	Leu	Trp	Trp	Arg	Gly	Arg	Glu	Lys	Gly	Leu	Ser	Thr	Phe	Leu
		20					25					30			
Phe	Leu	Leu	Leu	Phe	Ser	Ile	Ser	Leu	His	Ala	Gln	Arg	Gln	Asp	Ile
	35					40					45				
Leu	Leu	Asn	Asn	Asn	Trp	Asn	Phe	Arg	Phe	Ser	His	Gln	Val	Gln	Gly
	50				55					60					
Asp	Thr	Arg	Arg	Val	Asp	Leu	Pro	His	Thr	Trp	Asn	Ala	Gln	Asp	Ala
65				70					75					80	
Leu	Ala	Gly	Lys	Ile	Asp	Tyr	Lys	Arg	Gly	Ile	Gly	Asn	Tyr	Glu	Lys
			85					90					95		
Ala	Leu	Tyr	Ile	Arg	Pro	Glu	Trp	Lys	Gly	Lys	Arg	Leu	Phe	Leu	Arg
		100					105					110			
Phe	Asp	Gly	Val	Asn	Ser	Ile	Ala	Asp	Val	Phe	Ile	Asn	Arg	Lys	His
	115					120					125				
Ile	Gly	Glu	His	Arg	Gly	Gly	Tyr	Gly	Ala	Phe	Ile	Phe	Glu	Ile	Thr
	130					135					140				
Asp	Leu	Val	Lys	Tyr	Gly	Glu	Lys	Asn	Ser	Val	Leu	Val	Arg	Ala	Asn
145				150				155						160	
Asn	Gly	Glu	Gln	Leu	Asp	Ile	Met	Pro	Leu	Val	Gly	Asp	Phe	Asn	Phe

				165					170				175				
Tyr	Gly	Gly	Ile	Tyr	Arg	Asp	Val	His	Leu	Leu	Ile	Thr	Asp	Glu	Thr		
			180					185					190				
Cys	Ile	Ser	Pro	Leu	Asp	Tyr	Ala	Ser	Pro	Gly	Val	Tyr	Leu	Val	Gln		
		195					200					205					
Glu	Val	Val	Ser	Pro	Gln	Glu	Ala	Lys	Val	Cys	Ala	Lys	Val	Asn	Leu		
	210					215				220							
Ser	Asn	Arg	Ala	Ala	Asp	Gly	Thr	Ala	Glu	Leu	Gln	Val	Leu	Val	Thr		
225					230				235						240		
Asp	Gly	Thr	Lys	Val	Ile	Cys	Lys	Glu	Ser	Arg	Asn	Val	Ser	Leu	Lys		
			245					250					255				
Gln	Gly	Ala	Asp	Ile	Gln	Glu	Gln	Leu	Pro	Leu	Leu	Ile	Gln	Lys	Pro		
		260						265					270				
Arg	Leu	Trp	Asn	Gly	Cys	Glu	Asp	Pro	Phe	Met	Tyr	Gln	Val	Ser	Ile		
		275					280					285					
Ser	Leu	His	Lys	Asp	Gly	Lys	Gln	Ile	Asp	Ser	Val	Thr	Gln	Pro	Leu		
	290					295					300						
Gly	Leu	Arg	Tyr	Tyr	His	Thr	Asp	Pro	Asp	Lys	Gly	Phe	Phe	Leu	Asn		
305					310					315					320		
Gly	Lys	His	Leu	Pro	Leu	His	Gly	Val	Cys	Arg	His	Gln	Asp	Arg	Ala		
			325					330					335				
Glu	Val	Gly	Asn	Ala	Leu	Arg	Pro	Gln	His	His	Glu	Glu	Asp	Val	Ala		
			340					345					350				
Leu	Met	Arg	Glu	Met	Gly	Val	Asn	Ala	Ile	Arg	Leu	Ala	His	Tyr	Pro		
		355					360					365					
Gln	Ala	Thr	Tyr	Met	Tyr	Asp	Leu	Met	Asp	Lys	His	Gly	Ile	Val	Thr		
	370					375						380					
Trp	Ala	Glu	Ile	Pro	Phe	Val	Gly	Pro	Gly	Gly	Tyr	Ala	Asp	Lys	Gly		
385					390					395					400		
Phe	Val	Asp	Gln	Ala	Ser	Phe	Arg	Glu	Asn	Gly	Lys	Gln	Gln	Leu	Ile		
			405					410					415				
Glu	Leu	Ile	Arg	Gln	His	Tyr	Asn	His	Pro	Ser	Ile	Cys	Phe	Trp	Gly		
		420						425					430				
Leu	Phe	Asn	Glu	Leu	Lys	Glu	Val	Gly	Asp	Asn	Pro	Val	Glu	Tyr	Val		
		435					440					445					
Lys	Glu	Leu	Asn	Val	Leu	Ala	Lys	Gln	Glu	Asp	Pro	Thr	Arg	Pro	Thr		
	450					455					460						
Thr	Ser	Ala	Ser	Asn	Gln	Asp	Gly	Asn	Leu	Asn	Phe	Ile	Thr	Glu	Asn		
465					470					475					480		
Ile	Ala	Trp	Asn	Arg	Tyr	Asp	Gly	Trp	Tyr	Gly	Ser	Thr	Pro	Lys	Thr		
			485					490					495				
Leu	Ala	Thr	Phe	Leu	Asp	Arg	Thr	His	Lys	Lys	His	Pro	Glu	Leu	Arg		
			500					505					510				
Ile	Gly	Ile	Ser	Glu	Tyr	Gly	Ala	Gly	Ala	Ser	Ile	Tyr	His	Gln	Gln		
		515					520					525					
Asp	Ser	Leu	Lys	Gln	Pro	Ser	Ala	Ser	Gly	Trp	Trp	His	Pro	Glu	Asn		
	530					535					540						
Trp	Gln	Thr	Tyr	Tyr	His	Met	Glu	Asn	Trp	Lys	Ile	Ile	Ala	Glu	Arg		
545					550					555					560		
Pro	Phe	Val	Trp	Gly	Thr	Phe	Val	Trp	Asn	Met	Phe	Asp	Phe	Gly	Ala		
			565					570					575				
Ala	His	Arg	Thr	Glu	Gly	Asp	Arg	Pro	Gly	Ile	Asn	Asp	Lys	Gly	Leu		
			580					585					590				
Val	Thr	Phe	Asp	Arg	Lys	Val	Arg	Lys	Asp	Ala	Phe	Tyr	Phe	Tyr	Lys		
		595					600					605					
Ala	Asn	Trp	Asn	Lys	Gln	Glu	Pro	Met	Ile	Tyr	Leu	Ala	Glu	Lys	Arg		
	610					615					620						
Cys	Arg	Leu	Arg	Tyr	Gln	Pro	Glu	Gln	Thr	Phe	Met	Ala	Phe	Thr	Thr		
625					630					635					640		

Ala Pro Glu Ala Glu Leu Phe Val Asn Gly Ile Ser Cys Gly Lys Gln
 645 650 655
 Lys Ala Asp Thr Tyr Ser Thr Val Val Trp Lys Asn Val Lys Leu Thr
 660 665 670
 Ser Gly Gly Glu Tyr His Ser Cys Asp Tyr Ser Pro Ala Glu Thr Thr
 675 680 685
 Tyr Arg Arg Ser Asp Ser Arg Ile
 690 695

<210> 9948
 <211> 390
 <212> PRT
 <213> B.fragilis

<400> 9948
 Leu Thr Asn Lys Thr Gln Met Ser Asn Ile Ser Ser Thr Val Phe Ala
 1 5 10 15
 Asp Thr Lys Pro His Tyr His Leu Leu Asp Gly Leu Arg Gly Val Ala
 20 25 30
 Ala Leu Met Val Ile Trp Tyr His Val Phe Glu Gly Tyr Ala Phe Ala
 35 40 45
 Gly Gly Thr Thr Ile Asp Thr Phe Asn His Gly Tyr Leu Ala Val Asp
 50 55 60
 Phe Phe Phe Ile Leu Ser Gly Phe Val Ile Gly Tyr Ala Tyr Asp Asp
 65 70 75 80
 Arg Trp Gly Lys Asn Phe Thr Met Lys Asp Phe Ile Lys Arg Arg Leu
 85 90 95
 Ile Arg Leu His Pro Met Val Ile Met Gly Ala Val Val Gly Ala Ile
 100 105 110
 Thr Phe Tyr Ile Gln Gly Ser Val Gln Trp Asp Gly Thr His Ile Gly
 115 120 125
 Ile Ser Met Val Met Leu Ser Leu Leu Cys Thr Ile Phe Phe Ile Pro
 130 135 140
 Ala Met Pro Gly Val Gly Tyr Glu Val Arg Gly Asn Gly Glu Met Phe
 145 150 155 160
 Pro Leu Asn Gly Pro Cys Trp Ser Leu Phe Phe Glu Tyr Ile Gly Asn
 165 170 175
 Ile Leu Tyr Ala Leu Phe Ile Arg Arg Leu Ser Asn Lys Ala Leu Thr
 180 185 190
 Ile Val Val Val Leu Leu Gly Val Ala Leu Ala Ser Phe Ala Ile Phe
 195 200 205
 Asn Val Ser Gly Tyr Gly Asn Ile Gly Val Gly Trp Thr Leu Asp Gly
 210 215 220
 Val Asn Phe Ile Gly Gly Leu Leu Arg Met Leu Phe Pro Phe Ser Met
 225 230 235 240
 Gly Met Leu Leu Ser Arg Asn Phe Lys Pro Met Lys Leu Arg Gly Ala
 245 250 255
 Phe Trp Ile Cys Thr Leu Val Met Ile Ala Leu Phe Ala Val Pro Tyr
 260 265 270
 Leu Glu Gly Thr Glu Ser Ile Cys Thr Asn Gly Ile Tyr Glu Ala Phe
 275 280 285
 Cys Ile Ile Ala Phe Pro Ile Leu Leu Trp Ile Gly Ala Ser Gly
 290 295 300
 Thr Thr Thr Asp Lys Lys Ser Thr Gln Ile Cys Lys Phe Leu Gly Asp
 305 310 315 320
 Ile Ser Tyr Pro Ile Tyr Val Ile His Tyr Pro Phe Met Tyr Leu Phe
 325 330 335
 Tyr Ala Trp Leu Ile Lys Asn Gln Leu Phe Thr Leu Gly Glu Thr Trp
 340 345 350

Gln Val Ala Leu Cys Val Tyr Ala Trp Asn Ile Leu Phe Ala Tyr Leu
 355 360 365
 Cys Leu Lys Leu Tyr Asp Glu Pro Val Arg Lys Tyr Leu Ala Lys Arg
 370 375 380
 Phe Leu Asn Lys Lys Gln
 385 390

<210> 9949
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 9949
 Glu Leu Ile Lys Leu Cys Lys Phe Val Asn Arg Ile Met Asn Ser Ser
 1 5 10 15
 Pro Met Lys Asn Ile Ile Asn Lys Ile Arg Gln Leu Tyr Pro Val Ser
 20 25 30
 Asp Glu Ala Leu Gln Ala Leu Gln Ala Asn Met Gln Val Lys Tyr Tyr
 35 40 45
 Pro Lys Asp Thr Tyr Ile Val Gln Ser Gly Ile Thr Asp Arg Leu Val
 50 55 60
 Tyr Phe Ile Glu Glu Gly Val Thr Arg Ser Val Phe His His Asn Gly
 65 70 75 80
 Gln Asp Thr Thr Thr Trp Phe Ser Gln Glu Gly Asp Val Thr Phe Gly
 85 90 95
 Met Asp Ser Leu Tyr Tyr Lys Gln Pro Ser Ile Glu Ser Ile Glu Thr
 100 105 110
 Leu Ser Asp Cys Lys Ile Tyr Val Leu His Ile Asp Glu Leu Asn Ala
 115 120 125
 Leu Tyr Glu Lys Tyr Ile Asp Ile Ala Asn Trp Gly Arg Ile Leu His
 130 135 140
 Gln Asp Val Asn Lys Glu Leu Ser His Met Phe Val Glu Arg Leu Gln
 145 150 155 160
 Leu Ser Pro Lys Glu Arg Tyr Glu Gln Phe Asn Arg Arg Tyr Pro Gly
 165 170 175
 Leu Ile Asn Arg Val Lys Leu Lys Tyr Val Ala Ala Phe Leu Gly Ile
 180 185 190
 Ser Ile Tyr Thr Leu Ser Arg Val Arg Ala Lys Lys
 195 200

<210> 9950
 <211> 606
 <212> PRT
 <213> B.fragilis

<400> 9950
 Leu Thr Thr Lys Asp Met Thr Tyr His His Leu Ser Val Leu Val His
 1 5 10 15
 Arg Gln Ala Glu Lys Tyr Gly Asp Lys Thr Ala Leu Lys Tyr Arg Asp
 20 25 30
 Tyr Glu Lys Ala Gln Trp Ile Pro Ile Ser Trp Asn Glu Phe Ser Gln
 35 40 45
 Thr Val Arg Gln Ala Ala Ser Ala Met Val Glu Leu Gly Val Gln Glu
 50 55 60
 Glu Glu Asn Ile Gly Ile Phe Ser Gln Asn Lys Pro Glu Cys Leu Phe
 65 70 75 80
 Thr Asp Phe Ala Ala Phe Ala Asn Arg Ala Val Thr Ile Pro Leu Tyr
 85 90 95
 Ala Thr Ser Ser Pro Ala Gln Ala Gln Tyr Ile Ile Asn Asp Ala Gln

Glu Lys Gly Glu Leu Thr Asn Thr Leu Lys Leu Lys Arg Pro Val Val
 580 585 590
 Ala Arg Asn Tyr Lys Glu Val Ile Asp Lys Met Tyr Glu Glu
 595 600 605

<210> 9951
 <211> 469
 <212> PRT
 <213> B.fragilis

<400> 9951
 Leu Cys Leu Lys His Lys Asn His Ala Thr Met Lys Ser Phe Tyr Pro
 1 5 10 15
 Val Leu Tyr Leu Cys Phe Leu Phe Gly Leu Leu Pro Phe Leu Gly Ser
 20 25 30
 Cys Ser Glu Glu Asn Glu Ser Ser Gly Thr Ile Glu Met Asn Gln Leu
 35 40 45
 Pro Gly Thr Ala Gln Ser Phe Leu Ser Asn Tyr Phe Pro Gly Gln Thr
 50 55 60
 Pro Glu Lys Ile Glu Arg Thr Asn Thr Asp Gln Glu Asn Ala Pro Leu
 65 70 75 80
 Leu Tyr Arg Val Val Phe Pro Asn Glu Val Lys Val Glu Phe Ser Glu
 85 90 95
 Asn Gly Gly Trp Lys Arg Leu Met Ile Pro Asp Gln Lys Leu Pro Gly
 100 105 110
 Ser Leu Asp Pro Leu Trp Gly Lys Ile Ile Glu Tyr Val Gln Gln Leu
 115 120 125
 Phe Pro Asp Asp Pro Phe Ile Gly Ile Glu Asn Ala Cys Tyr Gly Asp
 130 135 140
 Cys Val Leu Leu Ser Ser Gly Lys Lys Ile Ala Phe Tyr Tyr Asp Gly
 145 150 155 160
 Thr Cys Ile Gly Tyr Glu Met Asp Ile Lys Asp Glu Ser Gly Val Pro
 165 170 175
 Gln Pro Val Arg Asp Phe Val Ala Thr Tyr Phe Pro Asp Gly Val Phe
 180 185 190
 Gln Val Val Glu His Ile Pro Asn Lys Asn Val Thr Ala Gly Tyr Ser
 195 200 205
 Phe Trp Leu Glu Asn Gly Phe Lys Cys Val Leu Asn Asp Arg Gly Gln
 210 215 220
 Trp Thr Glu Val Asn Gly Thr Glu Leu Leu Pro Val Ser Ile Leu
 225 230 235 240
 Glu Ala Leu Pro Ala Lys Val Thr Glu Gln Leu His Arg Asp Tyr Pro
 245 250 255
 Ala Ala Gln Val Thr Tyr Ile Arg Leu Glu Gly Thr Cys Tyr Thr Ile
 260 265 270
 Gln Val Ser Lys Thr Val Tyr Val Thr Ile Asp Pro Glu Asn Lys Pro
 275 280 285
 Ile Val Val Pro Val Met Gln Ala Gln Ala Leu Ala Glu Glu Tyr Phe
 290 295 300
 Gly Lys Leu Arg Ser Ile Ser Ile Ser His Pro Leu His Thr Asp Val
 305 310 315 320
 Leu Asn Phe Lys Val Cys Leu Pro Asn Gly Phe Asn Met Leu Val Asn
 325 330 335
 Glu Asp Ala Ser Glu Trp Leu Asn Ile Asp Gly Asn Gly Phe Ala Phe
 340 345 350
 Pro Glu Lys Leu Val Ala Ser Leu Pro Glu Lys Ile Thr Glu Tyr Ile
 355 360 365
 Ser Ala His Ser Asn Ser Glu Ile Thr Arg Val Asp Arg Ser Val Ala
 370 375 380

Ala Ser Phe Leu Val Glu Leu Thr Asn Gly Asp Gly Leu Met Phe Asp
 385 390 395 400
 Ser Gln Gly Gly Phe Leu Gly Lys Glu Lys Ile Glu Leu Ser Ile Ser
 405 410 415
 Glu Lys Thr Tyr Arg Tyr Met Arg His Gln Phe Pro Asp Asp Leu Asn
 420 425 430
 Met Tyr Phe Ser Ser Tyr Ser Ile Glu Gly Trp Ile Tyr Lys Leu Gly
 435 440 445
 Asp Gly Ser Gln Val Arg Phe Asp Arg Asp Gly Asn Phe Val Glu Met
 450 455 460
 Ile Ala Ala Ala Lys
 465

<210> 9952

<211> 380

<212> PRT

<213> B.fragilis

<400> 9952

Asn Leu Met Lys Leu Leu Asn Lys Leu Phe Ile Leu Thr Ala Thr Ala
 1 5 10 15
 Ile Ala Ile Ser Ser Cys Gln Gly Asp Leu Leu Asp Thr Lys Pro Tyr
 20 25 30
 Asp Lys Ala Ser Ser Gly Ser Met Trp Ser Asn Glu Asn Phe Cys Thr
 35 40 45
 Met Gly Val Ala Ser Ile Tyr Ala Thr Leu Arg Glu Gly Tyr Val Ala
 50 55 60
 Lys Glu Ala Tyr Leu Met Glu Ala Phe Ser Val Gly Ala Thr Cys Arg
 65 70 75 80
 Asp Asn Asp Tyr Pro Leu Leu Ala Gly Thr Ala Ser Ile Gly Ser Gly
 85 90 95
 Ile Phe Ser Asp Tyr Trp Lys Gln His Tyr Ala Gly Ile Tyr Arg Ala
 100 105 110
 Asn Asp Ala Ile Val His Leu Pro Asp Ala Pro Ile Ser Glu Ser Val
 115 120 125
 Lys Gly Lys Leu Leu Ser Glu Ala Lys Val Leu Arg Ala Phe Tyr Tyr
 130 135 140
 Tyr Lys Leu Asn Ala Val Phe Arg Gly Val Pro Tyr Tyr Asn Thr Pro
 145 150 155 160
 Met Glu Leu Asp Gln Ala Asp Lys Pro Arg Glu Ser Glu Glu Asn Ile
 165 170 175
 Trp Asn Phe Cys Ile Gln Asp Leu Thr Asp Ala Ile Asn Asp Pro Asn
 180 185 190
 Phe Pro Asp Arg Ile Ala Ala Gly Lys Ala Glu Trp Gly His Val Thr
 195 200 205
 Lys Ser Val Ala Tyr Ala Leu Arg Gly Lys Ile Tyr Leu Trp Thr Lys
 210 215 220
 Glu Trp Ser Lys Ala Glu Ala Asp Phe Arg Lys Val Gly Glu Leu Gly
 225 230 235 240
 His Ser Leu Phe Gln Asp Gly Tyr Lys Gln Leu Phe Lys Glu Ala Asn
 245 250 255
 Glu Gln Ser Asp Glu Ala Ile Phe Ser Leu Gln Cys Ile Asp Asn Asn
 260 265 270
 Gly Ser Thr Tyr Gly Asn Ser Met Ser Phe Arg Tyr Gly Gly Arg Thr
 275 280 285
 Thr Phe Gly Ser Cys Trp Asn Thr Met Leu Ala Ser Val Asp Phe Val
 290 295 300
 Glu Thr Tyr Glu Asn Ile Asp Gly Ser Lys Phe Asn Trp Asp Glu Tyr
 305 310 315 320

Phe Val Ser Gly Phe Ser Asp Ile Thr Pro Phe Ile Leu Asn Leu Leu
 355 360 365
 Gln Gly Thr Gly Ser Val Ala Ala Thr Val Val Met Ala Cys Thr Met
 370 375 380
 Gln Ala Ile Ile Ser Asn Ile Val Val Asn Met Cys Tyr Ala Leu Phe
 385 390 395 400
 Phe Ser Gly Lys Gln Ser Lys Leu Arg Ser Trp Ile Leu Gly Gly Phe
 405 410 415
 Gly Cys Val Ile Ala Ala Asn Val Val Val Leu Phe Phe Phe Tyr Leu
 420 425 430
 Ile

<210> 9954
 <211> 62
 <212> PRT
 <213> B.fragilis

<400> 9954
 Leu Met Tyr Cys Ser Asp Ser Arg Lys Phe Arg Leu Asn Asn Leu Cys
 1 5 10 15
 Asn His Gln Met Pro Phe Pro Arg Leu Asp Ser Ser Ile Met Arg Val
 20 25 30
 Ala Val Asn Ser Leu Lys Ala Tyr Leu Lys Val Ile Ser Leu Gln Leu
 35 40 45
 Phe Tyr Leu Ser Tyr Val Phe Met Phe Val Ala Leu Leu Ile
 50 55 60

<210> 9955
 <211> 848
 <212> PRT
 <213> B.fragilis

<400> 9955
 Leu Lys Ala Arg His Trp Ile Arg Gln Glu Arg Lys Cys Arg Phe Arg
 1 5 10 15
 Leu Phe Leu Ile Met Leu Trp Ala Ile Val Arg Ile Lys Ala Met Ser
 20 25 30
 Phe Gly Cys Pro Gln Ile Asn Asp Met Asn Glu His Lys His Asn Tyr
 35 40 45
 Asn Met Lys Ile Asn Cys Leu Leu Ala Leu Ala Leu Ser Ala Ser Ser
 50 55 60
 Leu Ala Ala Gln Asp Ala Val Ile Arg Val Asp Ala Gly Lys Val Glu
 65 70 75 80
 Asn Lys Ile Thr Pro Tyr Leu Tyr Gly Ala Cys Met Glu Asp Val Asn
 85 90 95
 His Glu Ile Tyr Gly Gly Leu Tyr Asp Gln Lys Ile Phe Gly Glu Ser
 100 105 110
 Phe Glu Glu Pro Val Ser Met Asp Asn Phe Ile Gly Phe Thr Arg Cys
 115 120 125
 Glu Gly Val Trp Lys Leu Gln Asp Gly Gln Leu Ser Val Gln Ala His
 130 135 140
 Pro Gly Ala Lys Leu Val Tyr Asp Asp Thr Gln Leu Ser Asp Gly Thr
 145 150 155 160
 Val Gly Val Asp Leu Lys Phe Thr Asn Gly Thr Ser Ser Ser Asn Asn
 165 170 175
 Ala Gly Leu Leu Arg Val Gly Glu Tyr Gly Gly Gly Ala Asp Asn
 180 185 190
 Phe Asp Gly Tyr Glu Val Ser Leu Phe Ala Asp Gly Lys Arg Leu Leu

195	200	205
Leu Gly Lys His Leu His Asn Trp Gln Glu Leu Lys Thr Thr Pro Val		
210	215	220
Asp Val Asp Pro Thr Gln Trp Asn Arg Met Glu Val Lys Leu Asp Gly		
225	230	235
Asp Glu Leu Val Ile Leu Leu Asn Asp Cys Glu Val Leu Arg Phe Glu		
245	250	255
Asp Arg Asp Thr Gly Leu Arg Asn Gly Lys Val Ala Phe Arg Asn Trp		
260	265	270
Gly Ala Asp Val Ser Tyr Arg Ser Leu Thr Ile Gly Ser Asn Thr Pro		
275	280	285
Val Lys Leu Leu Thr Lys Ala Thr Pro Gln Val Ser Gly Met Trp Asp		
290	295	300
Ala Phe Ala Asp Leu Ala Ala Ala Val Tyr Lys Gln Ile Ala Asp		
305	310	315
Lys Pro Phe His Gly Arg Tyr Ala Gln Glu Ile Glu Tyr Leu Ala Gly		
325	330	335
Thr Gly Lys Val Gly Ile Ala Asn Arg Ser Leu Asn Arg Trp Gly Ile		
340	345	350
Ser Val Arg Gln Gly Glu Lys Lys Thr Gly Ser Leu Tyr Leu Lys Gly		
355	360	365
Lys Ala Glu Val Arg Val Ala Leu Gln Ser Val Asp Gly Glu Lys Glu		
370	375	380
Tyr Ala Val Gln Cys Ile Arg Ala Asn Ala Gly Asp Trp Lys Lys Tyr		
385	390	395
Thr Phe Glu Leu Thr Pro Asp Lys Thr Asp Glu Asn Ala Arg Leu Ala		
405	410	415
Ile Tyr Leu Glu Glu Lys Gly Arg Ile Gln Val Asp Met Val Thr Leu		
420	425	430
Met Asn Gly Ala Asp Arg Gln Phe Cys Gly Leu Pro Leu Arg Asn Asp		
435	440	445
Ile Gly Gln Ala Met Val Asp Gln Gly Leu Arg Phe Leu Arg Tyr Gly		
450	455	460
Gly Thr Met Val Asn Ala Pro Glu Tyr Arg Phe Lys Lys Met Ile Gly		
465	470	475
Asp Arg Ala Glu Arg Pro Pro Tyr Lys Gly His Trp Tyr Thr Tyr Ser		
485	490	495
Thr Asn Gly Phe Gly Ile Glu Asp Phe Leu His Phe Cys Glu Lys Ala		
500	505	510
Gly Phe Met Pro Ala Tyr Ala Val Asn Val Glu Glu Ser Ala Gln Asp		
515	520	525
Met Glu Asp Met Ile Glu Tyr Leu Asn Gly Ser Val Asp Thr Lys Trp		
530	535	540
Gly Lys Lys Arg Ala Glu Asn Gly His Pro Glu Pro Tyr Gly Leu Lys		
545	550	555
Tyr Leu Glu Ile Gly Asn Glu Glu Val Ile Trp Gly Asp Ile Glu Ala		
565	570	575
Asp Tyr Gln His Tyr Ile Asp Arg Phe Asn Asp Ile Tyr Glu Ala Val		
580	585	590
His Ala Lys Asp Pro Glu Val Gln Phe Ile His Ser Ala Trp Trp Arg		
595	600	605
Pro Glu Ser Pro Asn Met Glu Lys Val Phe Lys Ala Leu Asp Gly Lys		
610	615	620
Ala Ala Tyr Trp Asp Tyr His Pro Trp Thr Asp Leu Gly Ser His		
625	630	635
Val Asn Ile Asp Arg Glu Leu Thr Asp Met Lys Ala Lys Phe Leu Lys		
645	650	655
Trp Asn Pro Lys Thr Ser Met Arg Cys Ala Ile Phe Glu Glu Asn Gly		
660	665	670

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Asn Leu His Asn Val Gln Arg Ala Ile Val His Ala Thr Val Gln Asn
675 680 685
Val Val Arg Arg His Gly Asp Phe Ile Leu Thr Thr Cys Ala Ala Asn
690 695 700
Ala Leu Gln Pro Tyr Leu Gln Asn Asp Asn Gly Trp Asp Gln Gly Gln
705 710 715 720
Ile Phe Phe Thr Pro Gly Gln Val Trp Gly Met Pro Thr Phe Tyr Ala
725 730 735
Gln Gln Met Ser Ser Ala His His His Pro Leu Arg Leu Trp Ser Glu
740 745 750
Thr Val Gly Glu Leu Asp Met Thr Ala Thr Thr Asn Glu Ala Arg Asp
755 760 765
Glu Val Ile Leu His Val Val Asn Thr Ser Ser Glu Val Arg Glu Thr
770 775 780
Gln Val Ser Leu Ser Gly Phe Ile Pro Lys Gly Asn Met Glu Ile Tyr
785 790 795 800
Thr Leu Ser Gly Glu Leu Asn Asp Glu Asn Leu Pro Asp Thr Pro Thr
805 810 815
Arg Ile Leu Pro Lys Ala Thr Trp Lys Gln Ala Pro Gly Ser Asp Phe
820 825 830
Thr Tyr Ser Phe Pro Gly Tyr Ser Tyr Thr Ile Val Val Leu Lys Lys
835 840 845

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<210> 9956

<211> 444

<212> PRT

<213> B.fragilis

<400> 9956

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Ser Leu Lys Arg Arg Met Asn Lys Gln Leu Ile Thr Ile Phe Ser Ile
1 5 10 15
Phe Ser Ile Thr Cys Leu Gly Met Val Ser Ala Gln Glu Ser Lys Ser
20 25 30
Phe Leu Pro Glu Val Lys Lys Glu Ser Leu Thr Phe Ser Ser Glu Asp
35 40 45
Asn Lys Phe Lys Leu Thr Phe Asn Gly Arg Ile Gln Ala Asp Gly Ala
50 55 60
Met Phe Phe Gly Glu Asp Tyr Gln Pro Ile Gly Asn Gly Val Gly Phe
65 70 75 80
Arg Arg Val Arg Leu Gly Ala Thr Ala Ala Phe Gly Lys Arg Leu Ser
85 90 95
Gly Lys Ile Glu Met Asp Leu Thr Asp Gly Gly Phe Ser Leu Lys Asp
100 105 110
Cys Phe Ile Lys Tyr Ala Phe Pro Asn Gly Leu Tyr Phe Arg Ala Gly
115 120 125
Asn Phe Lys Glu Ser Phe Gly Met Ala Ala Met Thr Ser Ser Gly Asp
130 135 140
Leu Trp Phe Met Glu Lys Ala Asn Val Val Ser Ala Phe Ala Pro Glu
145 150 155 160
Tyr His Ile Gly Val Gln Gly Thr Trp Glu His Asp Gln Phe Leu Gly
165 170 175
Val Ala Gly Val His Phe Lys Lys Ile Glu Gly Asn Lys Glu Lys Asp
180 185 190
Tyr Ser Glu Ser Asn Asn Lys Ala Gly Glu Asp Glu Gly Ile Ser Val
195 200 205
Thr Ala Arg Ala Val Trp Gln Pro Val Ser Ala Asp Lys Val Lys Gly
210 215 220
Phe His Leu Gly Ile Ala Ala Ser Tyr Arg Thr Pro Lys Thr Thr Val
225 230 235 240

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Gly Ser Leu Met Pro Asn Thr Val Arg Tyr Ser Thr Arg Ser Leu Ser
 245 250 255
 Tyr Ile Asn Lys Ile Lys Phe Leu Asp Thr Ser Pro Ile Ala Ser Val
 260 265 270
 Ser His Asp Trp Leu Ala Gly Ala Glu Leu Ala Gly Phe Tyr Arg Gly
 275 280 285
 Phe Arg Phe Gln Gly Glu Tyr Ile Met Asn Asn Thr Val Arg Met Glu
 290 295 300
 Gly Leu Ala Thr Glu Lys Phe Asn Gly Phe Tyr Val Gln Ala Ala Tyr
 305 310 315 320
 Leu Leu Phe Gly Gly Gln Gln Arg Tyr Ser Lys Ser Arg Gly Ala Phe
 325 330 335
 Ser Gln Pro Ser Phe Gly Arg Ser Trp Gly Asp Ile Glu Leu Ala Ala
 340 345 350
 Arg Phe Asp Arg Ile Asp Leu Asn Gly Thr Glu Val Met Gly Gly Ser
 355 360 365
 Ser Asn Gly Trp Thr Phe Gly Val Asn Tyr Tyr Ala Thr Arg Asn Leu
 370 375 380
 Lys Phe Gln Leu Asn Tyr Ser Tyr Val Asp Asn Asp Lys Tyr Ala Asn
 385 390 395 400
 Ala Phe Gly Gln Ala Ala Val Gly Tyr Lys Ser Asn Gly Glu Ile Ala
 405 410 415
 Tyr Lys Pro Glu Glu Val Asp Glu Ser Leu Gly Lys Gly Gly Asn Ala
 420 425 430
 Tyr Gly Ile Leu Gly Leu Arg Ile Gln Leu Asn Phe
 435 440

<210> 9957
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 9957
 Leu Ser Arg Ser Ser Arg Arg Thr Leu Ala Met Ser Leu Glu Lys Glu
 1 5 10 15
 Arg Ile Glu Lys Glu His Ile Glu Glu Met Asn Gln Ala Lys Leu Arg
 20 25 30
 Phe Phe Thr Asn Val Ser His Glu Phe Arg Thr Pro Leu Thr Leu Ile
 35 40 45
 Ile Ser Gln Val Glu Leu Met Leu Gln Lys Asn Thr Ile Pro Pro Ser
 50 55 60
 Leu His Asn Ser Ile Phe Arg Ile Arg Lys His Ala Gln Gln Met Lys
 65 70 75 80
 Leu Leu Ile Ser

<210> 9958
 <211> 1119
 <212> PRT
 <213> B.fragilis

<400> 9958
 Ser Ile Met Arg Lys Ser Lys Leu His Leu Leu Pro Leu Ser Ser Lys
 1 5 10 15
 Arg Val Leu Val Ser Thr Ser Leu Ile Met Leu Leu Ser Gly Ser Ala
 20 25 30
 Trp Ala Val Ser Ser Gln Glu Thr Val Glu Asn Gly Asp Ala Ile Thr
 35 40 45
 Ala Val Pro Gln Gln Arg Arg Thr Val Lys Gly Ile Val Lys Asp Ala

50	55	60
Asn Gly Glu Pro Ile	Ile Gly Ala Asn Val	Ile Val Lys Gly Asn Lys
65	70	75
Thr Ile Gly Val	Ile Thr Asn Leu Asn Gly	Glu Phe Ser Leu Glu Val
85	90	95
Pro Ser Asn Ala	Thr Leu Gln Ile Ser Tyr	Ile Gly Tyr Leu Asn Lys
100	105	110
Glu Val Lys Val	Ser Gly Asn Gln Val Ser Phe	Asn Ile Gln Leu Glu
115	120	125
Glu Asp Ser Lys	Thr Leu Asp Glu Val Val Val	Val Gly Tyr Gly Thr
130	135	140
Gln Lys Lys Ala	Asn Leu Thr Gly Ala Val Ser	Ser Val Asp Phe Glu
145	150	155
Glu Gln Thr Lys	Ser Arg Pro Ile Thr Thr	Val Ser Ser Ala Leu Ala
165	170	175
Gly Leu Ser Pro	Gly Leu Gln Ala Ser Ser	Gly Ser Ala Met Pro Gly
180	185	190
Glu Asp Asn Thr	Thr Leu Arg Val Arg Gly	Asn Gly Thr Met Asn Asn
195	200	205
Ala Ser Pro Leu	Ile Ile Ile Asp Gly Met Glu	Gly Ser Leu Asn Ala
210	215	220
Ile Asn Pro Gln	Asp Ile Glu Asn Ile Ser Ile	Leu Lys Asp Ala Ala
225	230	235
Ser Cys Ala Ile	Tyr Gly Ala Arg Ala Ala	Asn Gly Val Ile Leu Val
245	250	255
Thr Thr Lys Ser	Gly Asp Arg Asp Lys Ile	Gln Val Asn Tyr Ser Gly
260	265	270
Arg Ile Ser Phe	Asn Ser Pro Thr Arg Met	Ile Glu Thr Met Ser Asn
275	280	285
Tyr Ala Asp Tyr	Met Glu Leu Met Asn Glu	Ser Cys Glu Asn Val Gly
290	295	300
Ser Gly Thr Leu	Phe Asp Gln Lys Tyr Ile	Asp Leu Trp Arg Glu Lys
305	310	315
Ser Lys Asp Pro	Asn Gly Val Asn Glu Asn	Gly Val Pro Asn Tyr Ile
325	330	335
Ala Tyr Pro Asn	Thr Asn Trp Leu Lys Glu	Leu Tyr Ser Gly Gly Met
340	345	350
Ile His Glu His	Asn Leu Ser Val Ser Gly	Gly Ser Asn Lys Ile Arg
355	360	365
Phe Leu Ser Ala	Arg Tyr Gln Asp Asn Glu	Gly Ile Val Asp Asn
370	375	380
Thr Ala Asn Lys	Thr Tyr Ser Val Arg Ala	Asn Ile Glu Ala Asn Pro
385	390	395
Thr Gln Trp Leu	Thr Leu Gly Thr Arg Thr	Tyr Ala Ser Gln Met Asp
405	410	415
Arg Glu Val Gly	Asp Phe Ser Asn Ala Asn	Thr Phe Leu Arg Gln Ser
420	425	430
Thr Ala Gly Thr	Tyr Pro Glu Trp Asn Gly	Ser Phe Gly Tyr Pro Glu
435	440	445
Cys Pro Asp Glu	Arg Ala Thr Ala Asn Asn	Pro Leu Tyr Lys Leu Ala
450	455	460
Arg Asn Asp Gly	Phe Lys Arg Tyr Asn Arg	Phe Asn Thr Thr Leu Phe
465	470	475
Ser Lys Val Lys	Phe Phe Lys Asp Leu Ser	Trp Asp Phe Asn Phe Asn
485	490	495
Tyr Asn Arg Tyr	Ile Tyr Glu Thr Arg Gln	Trp Gly Val Pro Ala Tyr
500	505	510
Gln Thr Arg Phe	Ser Asp Gly Val Ile Val	Asp Gly Ile Thr Pro Pro
515	520	525

Ser Gln Leu Ser Thr Ser Phe Gly Tyr Glu Ser Asn Tyr Ser Tyr Thr
 530 535 540
 Leu Glu Asn Leu Leu Asn Tyr His His Thr Phe Ala Gln Lys His Asp
 545 550 555 560
 Val Ser Ala Leu Leu Gly Tyr Gln Glu Phe Tyr Lys Asn Tyr Tyr Thr
 565 570 575
 Val Asp Ala Ala Lys Lys Gly Leu Ile Asp Glu Ser Leu Asn Gln Phe
 580 585 590
 Asp Glu Ala Thr Glu Met Thr Ser Thr Lys Gly Ala Thr Gln Asp Tyr
 595 600 605
 Ala Thr Arg Ser Val Phe Gly Arg Val Asn Tyr Ala Tyr Asn Ser Arg
 610 615 620
 Tyr Leu Phe Glu Ala Asn Phe Arg Tyr Asp Gly Ser Ser Arg Phe His
 625 630 635 640
 Lys Asp His Arg Trp Gly Phe Phe Pro Ser Leu Ser Gly Ala Trp Arg
 645 650 655
 Ile Ser Glu Glu Ser Phe Met Glu Asn Thr Arg Thr Trp Leu Asp Asn
 660 665 670
 Leu Lys Val Arg Ala Ser Trp Gly Lys Leu Gly Asn Ser Glu Ile Gly
 675 680 685
 Asn Tyr Glu Tyr Met Ser Val Tyr Ser Thr Thr Asn Ala Val Phe Gly
 690 695 700
 Asn Ala Leu Asn Ser Ala Leu Tyr Met Gly Ala Ile Ala Asn Ser Leu
 705 710 715 720
 Leu Lys Trp Glu Ser Thr Thr Ser Val Asn Phe Gly Ile Asp Val Asn
 725 730 735
 Leu Leu Lys Asn Arg Leu Ser Ile Ser Ala Asp Leu Tyr Gln Lys Lys
 740 745 750
 Thr Asp Gly Ile Leu Tyr Arg Pro Thr Ile Pro Tyr Val Phe Gly Thr
 755 760 765
 Met Thr Ala Pro Arg Gln Asn Leu Ala Lys Val Ser Asn Lys Gly Val
 770 775 780
 Glu Leu Ser Leu Gly Trp Arg Asp Asn Ile Gly Gly Val Ser Tyr Ser
 785 790 795 800
 Ile Asn Gly Asn Phe Ser Tyr Asn Lys Ser Asn Ile Asp Ala Tyr Asn
 805 810 815
 Gly Thr Tyr Glu Arg Thr Trp Val Glu Asp Pro Asn Asn Lys Leu Thr
 820 825 830
 Gly Gly Lys Trp Glu Asp Asn Ile Gly Lys Val Ser Ser Gly Gly Thr
 835 840 845
 Thr Pro Ile Val Glu Gly Arg Met Met Asn Glu Tyr Tyr Leu Arg Asn
 850 855 860
 Val Tyr His Gly Asn Gly Ser Tyr Tyr Asn Ala Asp Gly Ser Val Asn
 865 870 875 880
 Pro Gln Gly Gly Pro Lys Thr Gly Met Ile Arg Thr Glu Lys Asp Met
 885 890 895
 Ala Trp Val Lys Asp Met Ile Ala Ala Gly Tyr Glu Phe Gln Pro Gly
 900 905 910
 Lys Thr Val Ala Lys Asn Lys Ile Trp Tyr Gly Asp Tyr Ile Tyr Ala
 915 920 925
 Asp Ser Asn Asn Asn Gly Val Tyr Gly Asp Asp Asn Asp Tyr Thr Phe
 930 935 940
 Gln Lys Thr Ser Asn Lys Pro Lys Tyr Asn Phe Gly Phe Gln Ala Ser
 945 950 955 960
 Ala Ala Trp Lys Gly Phe Asp Leu Ser Met Val Trp Ala Gly Ala Ala
 965 970 975
 Gly Phe Ser Ile Tyr Trp Gly Ala Thr Thr Gly Tyr Asn Ala Ala Ser
 980 985 990
 Thr Glu Trp Gly Ser Thr Ile Ala Gln Arg Val Ala Glu Asn His Tyr

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          995                1000                1005
Phe Tyr Asn Pro Glu Asn Pro Asp Asp Pro Arg Thr Asn Ile Asn Ala
1010                1015                1020
Lys Tyr Pro Arg Met Ala Tyr Ile Asp Gly Tyr Val Gln Asn Arg His
1025                1030                1035                1040
Gly Asn Thr Thr Leu Trp Leu Tyr Lys Gly Asp Tyr Ile Lys Leu Lys
          1045                1050                1055
Asn Leu Ser Leu Gly Tyr Thr Leu Pro Lys Asn Trp Val Ser Lys Ile
          1060                1065                1070
Ala Met Gln Asn Ala Arg Ile Tyr Val Ser Ala Glu Asn Leu Leu Thr
          1075                1080                1085
Ile Thr Gly Phe Glu Gly Gln Asp Pro Glu Ser Ala Thr Gly Met Gly
          1090                1095                1100
Tyr Ser Pro Phe Arg Thr Ile Ala Ile Gly Ala Asn Ile Thr Phe
1105                1110                1115

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<210> 9959

<211> 860

<212> PRT

<213> B.fragilis

<400> 9959

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Leu His Met Arg Asn Lys Leu Leu Leu Leu Leu Leu Met Phe Met
1      5      10      15
Thr Ser Gly Met Met Tyr Ala Gln Gln Gln Lys Thr Gln Gln Ser Gln
          20      25      30
Gln Arg Thr Ala Ala Pro Ser Tyr Thr Leu Lys Gly Val Leu Leu Asp
          35      40      45
Ser Leu Thr Gln Glu Gly Glu Pro Tyr Ala Thr Ile Lys Ile Ala Lys
          50      55      60
Lys Asn Ala Pro Gln Lys Ala Leu Lys Met Ala Val Thr Asp Leu Asn
65      70      75      80
Gly Lys Phe Gln Glu Lys Leu Thr Val Ala Pro Gly Glu Tyr Ile Ile
          85      90      95
Thr Leu Ser Ser Val Gly Lys Val Thr Ile Val Lys Asp Phe Thr Val
          100      105      110
Lys Ala Ser Glu Lys Val Ile Asp Leu Gly Lys Leu Asn Met Ala Glu
          115      120      125
Ala Thr Asn Glu Leu Lys Gly Ile Glu Val Val Ala Gln Lys Pro Leu
130      135      140
Val Lys Val Asp Val Asp Lys Ile Glu Tyr Asn Ile Glu Asp Asp Pro
145      150      155      160
Asp Ser Lys Thr Asn Thr Val Met Glu Met Leu Arg Lys Val Pro Leu
          165      170      175
Val Thr Val Asp Gly Glu Asp Asn Ile Lys Val Asn Gly Ser Ser Ser
          180      185      190
Phe Lys Ile His Val Asn Gly Lys Pro Asn Asn Met Met Ser Asn Asn
          195      200      205
Pro Lys Asp Val Leu Lys Ser Met Pro Ala Asn Thr Ile Lys His Ile
210      215      220
Glu Val Ile Thr Ser Pro Gly Ala Lys Tyr Asp Ala Glu Gly Val Gly
225      230      235      240
Gly Ile Leu Asn Ile Val Thr Val Gly Gly Gly Phe Glu Gly Tyr Thr
          245      250      255
Ala Thr Phe Arg Ala Ser Gly Ser Asn Arg Gly Ala Gly Ala Gly Gly
260      265      270
Tyr Ala Thr Ile Lys Ser Gly Lys Leu Thr Ile Thr Gly Asn Tyr Asn
275      280      285
Tyr Asn Tyr Asp Thr Ser Pro Lys Ser Tyr Ser Asp Ser Tyr Arg Glu

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290	295	300
Asn Tyr Asp Ser Glu Asp	Gln Lys Tyr Leu Glu Ser Lys Ser Ser Ser	
305	310	315
Asp Tyr Asn Gly Ser Phe	Gln Tyr Gly Asn Leu Glu Ala Ser Tyr Glu	320
	325	330
Ile Asp Thr Leu Arg Leu Leu Thr	Ala Ser Phe Gly Met Tyr Gly Gly	335
	340	345
Ala Asn Asp Asn Lys Ser Asp	Gly Leu Thr Thr Met Trp Asn Ala Gln	350
	355	360
Arg Asp Arg Leu Ala Tyr Gln	Tyr Arg Ser Leu Ser Asp Gly Asp Gly	365
	370	375
Ser Trp Tyr Ser Met Arg Gly	Asn Val Asp Tyr Gln Arg Thr Ser Lys	380
385	390	395
Lys Asn Lys Asp Arg Met Ile Thr	Leu Ser Tyr Lys Ile Ser Thr Gln	400
	405	410
Pro Gln Asn Ser Asp Tyr Tyr Thr	Asp Tyr Lys Asp Ile Lys Asp Pro	415
	420	425
Phe Glu Met Asp Ile Val Lys Lys	Phe Leu Leu Asn Asn Ser His Ser	430
	435	440
Asp Gly Lys Thr Asn Thr Thr	Glu His Thr Phe Gln Val Asp Tyr Thr	445
	450	455
Thr Pro Ile Gly Lys Leu His Thr	Ile Glu Ala Gly Ala Lys Tyr Ile	460
465	470	475
Ile Arg Asn Asn Leu Ser Asp Asn	Lys Leu Phe Glu Ala Glu Gly Val	480
	485	490
Ser Asp Asn Tyr Glu Tyr Asn Asn	Asp Arg Ser Ser Lys Tyr Lys His	495
	500	505
Leu Asn Asp Ile Leu Ala Ala Tyr	Leu Gly Tyr Thr Leu Arg Tyr Lys	510
	515	520
Thr Phe Ser Phe Lys Pro Gly Val	Arg Tyr Glu Tyr Thr Ser Gln Asp	525
	530	535
Val Lys Tyr Leu Ala Gly Ala Ile	Gly Pro Glu Ala Asp Phe Ser Thr	540
545	550	555
Ser Tyr Asn Asp Phe Val Pro Ser	Val Thr Met Gly Ile Lys Ile Gly	560
	565	570
Lys Thr Gln Asn Leu Arg Gly Gly	Tyr Asn Met Arg Ile Trp Arg Pro	575
	580	585
Gly Ile Trp Asn Leu Asn Pro Tyr	Phe Asp Asp Arg Asn Pro Met Phe	590
	595	600
Ile Ser Gln Gly Asn Ser Asn Leu	Glu Ser Glu Lys Ser His Ser Phe	605
	610	615
Asn Leu Ser Tyr Ser Met Phe Ser	Met Lys Phe Asn Val Asn Ile Ser	620
625	630	635
Leu Arg His Ser Phe Gly Asn Asn	Gly Ile Glu Arg Val Ser Arg Leu	640
	645	650
Ile Gly Lys Gly Gly Glu Glu Phe	Pro Gly Gly His His Ala Pro Glu	655
	660	665
Gly Ala Leu Tyr Ser Thr Tyr Glu	Asn Ile Gly Lys Asn Arg Asn Thr	670
	675	680
Gly Leu Ser Leu Tyr Gly Asn Trp	Asn Ala Ser Pro Asn Thr Arg Ile	685
	690	695
Tyr Leu Asn Gly Asp Gly Ser Tyr	Val Asp Ile Lys Ser Pro Ala Gln	700
705	710	715
Gly Leu His Asn Tyr Gly Trp Asn	Ala Ser Leu Tyr Gly Gly Ile Gln	720
	725	730
His Thr Phe Pro Leu Lys Ile Arg	Ala Ser Leu Asn Ala Gly Gly Ser	735
	740	745
Thr Pro Tyr Ile Ser Leu Gln Gly	Lys Gly Ser Gly Tyr Tyr Tyr Tyr	750
	755	760
		765

Ser Leu Gly Val Asn Arg Ser Phe Ile Lys Asp Arg Phe Thr Val Ser
 770 775 780
 Ala Tyr Val Ser Asn Ile Phe Glu Lys Tyr Arg Ser Tyr Asn Asn Thr
 785 790 795 800
 Thr Met Gly Glu Asn Phe Leu Ser Lys Ser Ser Arg Tyr Gln Ser
 805 810 815
 Arg Ser Phe Gly Ile Ser Leu Ser Tyr Arg Ile Gly Glu Leu Lys Ala
 820 825 830
 Ser Val Lys Lys Ala Ala Arg Ser Ile Asn Asn Asp Asp Val Lys Gly
 835 840 845
 Gly Gly Gly Gln Gly Gly Gln Gly Gly Gly Ala Asn
 850 855 860

<210> 9960

<211> 882

<212> PRT

<213> B.fragilis

<400> 9960

Val Ala Phe Met Lys Ile Gly Tyr Leu Lys Pro Gly Ile Leu Leu Leu
 1 5 10 15
 Val Leu Leu Phe Ser Phe Arg Gln Asp Leu Phe Ala Lys Lys Arg Ile
 20 25 30
 Thr Ser Leu Lys Cys Glu Tyr Ile Glu Ala Pro Leu Gly Leu Asp Val
 35 40 45
 Gln Arg Pro Arg Leu Met Trp Lys Val Asp Thr Ser Asp Val Pro Ser
 50 55 60
 Arg Gln Thr Ala Tyr Arg Ile Leu Val Ser Ser Thr Pro Glu Leu Leu
 65 70 75 80
 Arg Gln Gly Glu Ala Asp Ile Trp Asp Ser Gly Lys Gln Lys Ser Asp
 85 90 95
 Glu Gln Leu Val Ser Tyr Ala Gly Ser Thr Leu Arg Pro His Thr Arg
 100 105 110
 Tyr Trp Trp Arg Val Glu Val Trp Leu Asn Asn Lys Lys Val Val Ser
 115 120 125
 Glu Pro Val Trp Phe Glu Thr Gly Lys Phe Ser Ala Thr Asp Trp Glu
 130 135 140
 Ala Ser Trp Ile Thr Asp Gly Tyr Asp Lys Asp Tyr Glu Pro Ser Pro
 145 150 155 160
 Met Phe Arg Lys Val Phe Asp Val Ser Lys Glu Val Ala Ser Ala Arg
 165 170 175
 Cys Tyr Ile Ser Gly Leu Gly Tyr Tyr Arg Leu Ser Phe Asn Gly Lys
 180 185 190
 Ala Val Asn Asp His Ala Leu Asp Pro Gly Phe Thr Asp Tyr Ser Lys
 195 200 205
 Arg Val Leu Tyr Leu Thr Tyr Asp Ile Ser Gly Leu Leu Arg His Gly
 210 215 220
 Lys Asn Cys Ile Gly Val Gln Leu Gly Asn Gly Trp Phe Asn Glu Gln
 225 230 235 240
 Thr Pro Ala Val Trp Tyr Phe His Glu Ala Pro Trp Arg Lys Arg Pro
 245 250 255
 Gln Met Ile Ala Glu Ile His Leu Cys Tyr Thr Asp Gly Ser Lys Asp
 260 265 270
 Ile Ile Thr Thr Asp Thr Ser Trp Lys Thr Ser Thr Gly Pro Leu Leu
 275 280 285
 Phe Asp Asn Leu Tyr Val Gly Ser Phe Tyr Asp Ala Arg Leu Glu Gln
 290 295 300
 Lys Gly Trp Asp Thr Glu Leu Phe Asp Asp Val Ser Trp Gln His Ala
 305 310 315 320

Lys Leu Thr Ala Ala Pro Ala Pro Leu Ile Glu Ala Gln Lys Met Pro
 325 330 335
 Ser Ile Thr Thr Ala Asp Thr Leu Ser Val Val Ser Val Asn Cys Ile
 340 345 350
 Ser Asp Thr Cys Tyr Val Phe Asp Met Gly Ile Asn Thr Ala Gly Val
 355 360 365
 Pro Arg Leu Glu Ile Lys Gly Glu Arg Gly Thr Arg Ile Arg Leu Arg
 370 375 380
 His Ser Glu Met Leu Gln Lys Asp Gly Asn Ile Asp Gln Arg Asn Ile
 385 390 395 400
 Asp Met His Leu Arg Pro Arg Asn Lys Arg Glu Ile Ile Gln Thr Asp
 405 410 415
 Glu Tyr Val Leu Lys Gly Glu Gly Val Glu Thr Phe Ile Pro Pro Phe
 420 425 430
 Thr Tyr His Gly Phe Arg Tyr Ile Glu Leu Thr Ser Asp Arg Pro Leu
 435 440 445
 Thr Val Ala Asp Val Lys Leu Gln Thr Leu Arg Met His Ser Asp Val
 450 455 460
 Ala Glu Val Gly Ser Phe Lys Cys Ser Asp Gln Leu Leu Asn Thr Ile
 465 470 475 480
 Phe Asn Ile Cys Arg Asn Ser Tyr Leu Ser Asn Leu Phe Gly Ile Pro
 485 490 495
 Thr Asp Cys Pro Thr Arg Glu Lys Asn Gly Trp Met Ala Asp Gly Phe
 500 505 510
 Met Val Gln Glu Ala Gly Met Phe Asn Tyr Asp Ser Arg Asn Val Tyr
 515 520 525
 Ala Lys Trp Val Lys Asp Met Ile Asp Thr Gln Glu Ala Asn Gly Asn
 530 535 540
 Val Ala Gly Ile Ala Pro Thr Ser Arg Arg Trp Asp Ser Asn Trp Ala
 545 550 555 560
 Gly Pro Leu Trp Asp Ala Ala Ile Phe Ile Val Pro Ser Tyr Leu Tyr
 565 570 575
 Arg Tyr Thr Gly Asp Ile Glu Thr Met Arg Gln Val Tyr Pro Ala Ala
 580 585 590
 Glu Arg Tyr Leu Lys Tyr Ile Glu Thr Thr Glu Asp Glu Arg Gly Leu
 595 600 605
 Ile Asn His Gly Leu Gly Asp Trp Leu Phe Tyr Lys Ala Glu Thr Pro
 610 615 620
 Val Asp Phe Met Ala Thr Gly Phe Val Tyr Trp Asp Asn Leu Met Met
 625 630 635 640
 Ala Gln Met Ala Glu Leu Thr Gly Arg Val Glu Asp Arg Gln Lys Tyr
 645 650 655
 Leu Ala Lys Ala Glu Glu Leu Lys Lys Arg Ile Asn Asp His Phe Phe
 660 665 670
 Asp Pro Gln Thr Val Ser Tyr Ala Asn Lys Thr Gln Leu Ser Tyr Ala
 675 680 685
 Leu Pro Leu Tyr Leu His Ile Val Pro Glu Ala Tyr Arg Glu Arg Leu
 690 695 700
 Ala Glu Asn Leu His Lys Ile Ile Ala Ala Asn Asp Tyr Ser Leu Asp
 705 710 715 720
 Phe Gly Phe Ile Gly Ser Val Met Val Pro Asp Val Leu Ala Glu Thr
 725 730 735
 Gly Tyr Ala Glu Thr Ala Tyr Arg Met Leu Thr Lys Thr Ile Leu Pro
 740 745 750
 Ser Trp Gly Tyr Trp Ile Lys Glu Thr Gly Ala Thr Ser Leu Tyr Glu
 755 760 765
 Thr Trp Asp Val Thr Arg Arg Ile Gly Asp Ala Ser Leu Asn His Pro
 770 775 780
 Ser Met Gly Ala Val Ser Ala Trp Met Tyr Lys Tyr Pro Ala Gly Ile

5843

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785          790          795          800
Arg Leu Ser Pro Asp Ala Pro Ala Phe Lys Lys Ile Leu Ile Gln Pro
      805          810          815
Cys Phe Leu Ser Asp Leu Asp Phe Val Glu Ala Ser His Glu Ser Met
      820          825          830
Tyr Gly Thr Ile Arg Val Asp Trp Arg Arg Glu Glu Gly Lys Ile Arg
      835          840          845
Leu His Leu Val Leu Pro Ser Thr Ala Met Ala Thr Val Val Leu Pro
      850          855          860
Gly Gln Lys Pro Lys Ala Val Lys Gly Gly Glu His Ile Phe Val Ile
865          870          875          880
Pro Glu

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<210> 9961

<211> 272

<212> PRT

<213> B.fragilis

<400> 9961

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Lys His Ser Ile Ser Glu Ile Gly Phe Ala Gly Thr Glu Glu Ala Leu
1          5          10          15
Asp Asp Met Val Lys Lys Ile Lys Ala Lys Val Asp Gly Arg Leu Glu
20          25          30
Lys Leu Ser Asp Lys Ala Lys Ala Leu Tyr Leu Pro Ala Gly Asn Glu
35          40          45
Ala Arg Ile Lys Ala Ala Tyr Asp Ser Arg Asp Pro Arg Leu Ser Gln
50          55          60
Thr Val Ile Thr Pro Tyr Ala Thr Tyr Asp Gly Ser Gly Asn Ser Val
65          70          75          80
Asp His Thr Phe Thr Ser Arg Trp Pro Tyr Tyr Gly Ala Asp Thr Asp
85          90          95
Tyr Pro Tyr Asp Leu Arg Thr Asp Thr Gln Ser His Leu Tyr Tyr Leu
100          105          110
Phe Arg Lys Phe Val Ala Glu Gly Ser Ser Glu Met Thr Asn Arg Glu
115          120          125
Gln Ser Pro Ile Asp Leu Pro Ile Ile Arg Tyr Ala Thr Val Val Ile
130          135          140
Gly Leu Ala Glu Ala Leu Asn Glu Gln Gly Lys Thr Asp Glu Ala Ile
145          150          155          160
Glu Trp Leu Asn Lys Val Arg Gln Arg Ala Gly Val Ala Leu Leu Asn
165          170          175
Ser Asn Thr Ala Thr Met Val Gln Gly Gln Glu Asp Met Arg Val Arg
180          185          190
Ile Gln Asn Glu Phe Arg Trp Glu Thr Ala Gly Glu Gly Val Asp Phe
195          200          205
Tyr Glu Glu Leu Arg Trp Lys Thr Trp Lys Glu Ser Lys Phe Asn Asn
210          215          220
Ala Asp Gly Thr Ala Gly Met Lys Asp Val Trp Gly Thr Ile Thr Tyr
225          230          235          240
Pro Tyr Thr Trp Gly Gly Asp Gln Tyr Tyr Val Trp Pro Ile Pro Lys
245          250          255
His Glu Thr Asp Met Asn Lys Ser Leu Thr Gln Asn Ser Gly Trp Asn
260          265          270

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<210> 9962

<211> 354

<212> PRT

<213> B.fragilis

<400> 9962

Gly Gly Ile Phe Asp Ile Asp Gly Lys Lys Ile Gln Val Glu Glu Glu
 1 5 10 15
 Gln Leu Arg Thr Gln Ala Pro Gly Phe Trp Asp Asp Gln Lys Lys Ala
 20 25 30
 Glu Ala Gln Met Lys Leu Val Lys Gly Leu Gln Lys Trp Ile Glu Gly
 35 40 45
 Tyr Asn Asp Val Lys Thr Leu Thr Asp Glu Leu Glu Leu Ala Phe Asp
 50 55 60
 Phe Tyr Lys Asp Glu Leu Val Thr Glu Gln Glu Val Asp Glu Ala Tyr
 65 70 75 80
 Ala Lys Ala Leu Glu His Val Glu Asn Leu Glu Leu Gln Asn Met Leu
 85 90 95
 Arg Asp Glu Ala Asp Gln Met Ser Cys Val Leu Lys Ile Asn Ser Gly
 100 105 110
 Ala Gly Gly Thr Glu Ser Gln Asp Trp Ala Ser Met Leu Met Arg Met
 115 120 125
 Tyr Leu Arg Tyr Ala Glu Thr Asn Gly Tyr Lys Ala Thr Met Ala Asn
 130 135 140
 Leu Gln Glu Gly Asp Glu Ala Gly Ile Lys Thr Cys Thr Ile Gln Ile
 145 150 155 160
 Glu Gly Asp Tyr Ala Tyr Gly Tyr Leu Lys Gly Glu Asn Gly Val His
 165 170 175
 Arg Leu Val Arg Val Ser Pro Tyr Asn Ala Gln Gly Lys Arg Met Thr
 180 185 190
 Ser Phe Ala Ser Val Phe Val Thr Pro Leu Val Asp Asp Ser Ile Glu
 195 200 205
 Val Asn Ile Leu Pro Ala Cys Ile Ser Trp Asp Thr Phe Arg Ser Gly
 210 215 220
 Gly Ala Gly Gly Gln Asn Val Asn Lys Val Glu Ser Gly Val Arg Leu
 225 230 235 240
 Arg Tyr Gln Tyr Lys Asp Pro Tyr Thr Gly Glu Glu Glu Glu Ile Leu
 245 250 255
 Ile Glu Asn Thr Glu Thr Arg Asp Gln Pro Lys Asn Arg Glu Asn Ala
 260 265 270
 Met Arg Gln Leu Arg Ser Ile Leu Tyr Asp Lys Glu Leu Gln His Arg
 275 280 285
 Met Ala Glu Gln Ala Lys Val Glu Ala Gly Lys Lys Lys Ile Glu Trp
 290 295 300
 Gly Ser Gln Ile Arg Ser Tyr Val Phe Asp Asp Arg Arg Val Lys Asp
 305 310 315 320
 His Arg Thr Asn Phe Gln Thr Ser Asp Val Asn Gly Val Met Asp Gly
 325 330 335
 Lys Ile Glu Gly Phe Ile Lys Ala Tyr Leu Met Glu Phe Ser Ser Glu
 340 345 350
 Glu Ala

<210> 9963

<211> 306

<212> PRT

<213> B.fragilis

<400> 9963

Lys Ser Ile Met Lys Thr Gln Val Phe Lys Leu Ala Cys Leu Ile Ile
 1 5 10 15
 Cys Leu Leu Thr Ile Val Pro Asn Cys His Ala Gly Ser Lys Trp Lys
 20 25 30

Ala Lys His Val Val Leu Ile Gly Leu Asp Gly Trp Gly Ser Tyr Ser
 35 40 45
 Val Glu Lys Ala Asn Ile Pro His Ile Lys Gln Leu Met Asn Asp Gly
 50 55 60
 Ser Tyr Thr Leu Thr Lys Arg Ser Val Leu Pro Ser Ser Ser Ala Val
 65 70 75 80
 Asn Trp Ala Ser Met Phe Met Gly Ala Gly Pro Glu Leu His Gly Tyr
 85 90 95
 Thr Thr Trp Asn Ser Ser Thr Pro Asp Leu Pro Ser Lys Glu Leu Ser
 100 105 110
 Lys Asp Gly Ile Phe Pro Thr Ile Phe Gln Leu Leu Arg Glu Ala Asp
 115 120 125
 Pro Lys Ala Glu Ile Gly Thr Phe Tyr Glu Trp Val Gly Ile Lys Tyr
 130 135 140
 Leu Val Asp Thr Leu Ala Val Asn Lys Tyr Asn Gln Gly Ile Asn Tyr
 145 150 155 160
 Glu Lys His Pro Thr Glu Leu Cys Glu Thr Ala Val Lys Tyr Ile Lys
 165 170 175
 Glu Lys Lys Pro Ala Leu Thr Leu Ile Ala Trp Asp Asn Pro Asp His
 180 185 190
 Val Gly His Lys Glu Gly His Asp Thr Pro Ala Tyr Tyr His Lys Leu
 195 200 205
 Glu Glu Ile Asp Gly Tyr Ile Gly Lys Val Met Asn Ala Val Lys Glu
 210 215 220
 Ala Gly Ile Leu Asp Glu Thr Ile Phe Ile Ile Thr Ser Asp His Gly
 225 230 235 240
 Gly Ile Asn Lys Gly His Gly Gly Lys Thr Met Gln Glu Met Glu Thr
 245 250 255
 Pro Phe Ile Ile Ser Gly Lys Asn Ile Lys Lys Gly His Glu Ile Gln
 260 265 270
 Ala Ser Met Met Gln Phe Asp Val Ala Ala Thr Val Ala Ala Ile Phe
 275 280 285
 Lys Leu Lys Gln Pro Gln Val Trp Ile Gly Arg Pro Ile Met Glu Val
 290 295 300
 Phe Lys
 305

<210> 9964

<211> 135

<212> PRT

<213> B.fragilis

<400> 9964

Ser Cys Leu Met Val Asn Gln Asp Ala Lys Ala Ala Cys Met Gly Leu
 1 5 10 15
 Leu Asn Leu Asn Ser Leu Cys Phe Tyr Asp Leu Lys Gly Asn Leu Met
 20 25 30
 Lys Glu Ile Val Ile Gly Lys Glu Leu Lys Phe Pro Glu Tyr Asp Pro
 35 40 45
 Glu Phe Leu Asp Phe Pro Asn Ala Leu Lys Tyr Phe Ile Ser Leu Cys
 50 55 60
 Gly Thr Pro Asn Tyr Leu Tyr Ala Leu Tyr Asn Gly Phe Pro Gly Thr
 65 70 75 80
 Ser Gly Glu Ser Lys Ile Met Val Phe Thr Trp Gln Gly Ala Pro Asp
 85 90 95
 Ala Ile Tyr Gln Thr Asp Val Lys Leu Glu Arg Ile Ala Asp Ala Pro
 100 105 110
 Ser Gly Arg Tyr Val Leu Gly Leu Asn Ile Thr Glu Glu Val Gly Ser
 115 120 125

Asp Val Leu Lys Phe Glu Leu
130 135

<210> 9965

<211> 514

<212> PRT

<213> B.fragilis

<400> 9965

Arg	His	Arg	Met	Lys	Arg	Thr	Asn	Arg	Thr	Leu	Phe	Ile	His	Asn	Thr
1				5					10					15	
Ala	Arg	Gly	Arg	Ile	Lys	Phe	Leu	Leu	Leu	Ala	Leu	Phe	Ala	Phe	Gln
			20					25					30		
Gly	Leu	Gln	Ala	Gln	Lys	Leu	Phe	Pro	Ala	Pro	Ser	Ala	Ile	Glu	Thr
			35				40					45			
His	Lys	Gly	Thr	Phe	Ser	Tyr	Asp	Glu	Val	Ser	Ala	Lys	Cys	Val	Arg
	50					55				60					
Thr	Thr	Ile	Ser	Lys	Ser	Leu	Pro	Ala	Ile	Gly	Ile	Glu	Tyr	Ser	Asp
65					70					75					80
Glu	Ala	Tyr	Gln	Leu	Glu	Ile	Thr	Pro	Asp	Ser	Ile	Phe	Ile	Asp	Ala
			85					90						95	
Thr	Ser	Ala	Lys	Gly	Ala	Phe	Tyr	Ala	Arg	Gln	Ala	Ile	Lys	Gln	Leu
			100					105						110	
Ala	Arg	His	Glu	Arg	Gly	Lys	Ile	Arg	Cys	Cys	Arg	Ile	Tyr	Ser	Ser
		115					120					125			
Pro	Arg	Tyr	Ala	Trp	Arg	Gly	Phe	Met	Leu	Asp	Glu	Ser	Arg	His	Phe
		130				135					140				
Phe	Gly	Lys	Glu	Lys	Val	Lys	Gln	Tyr	Leu	Asp	Leu	Met	Ala	Leu	Leu
145				150						155					160
His	Leu	Asn	Val	Phe	His	Trp	His	Leu	Thr	Asp	Glu	Pro	Gly	Trp	Arg
			165					170						175	
Ile	Glu	Ile	Lys	Lys	Tyr	Pro	Lys	Leu	Thr	Lys	Ile	Gly	Ala	Val	Gly
			180					185					190		
Asn	Trp	His	Asp	Ala	Gln	Ala	Thr	Pro	Gln	Phe	Tyr	Thr	Gln	Asp	Asp
		195					200					205			
Ile	Arg	Glu	Ile	Val	Ala	Tyr	Ala	Ala	Glu	Arg	Gln	Ile	Met	Val	Val
	210					215					220				
Pro	Glu	Phe	Asp	Met	Pro	Gly	His	Ala	Thr	Ala	Val	Cys	Arg	Ala	Tyr
225				230						235					240
Pro	Glu	Val	Ser	Gly	Gly	Glu	Gly	Arg	Trp	Lys	His	Phe	Thr	Phe	
			245					250					255		
His	Pro	Cys	Lys	Glu	Glu	Thr	Tyr	Arg	Phe	Ile	Ser	Asp	Val	Leu	Asp
			260					265					270		
Glu	Ile	Val	Ala	Leu	Phe	Pro	Ala	Pro	Tyr	Ile	His	Ile	Gly	Gly	Asp
		275					280					285			
Glu	Val	His	Tyr	Gly	Asn	Gln	Asn	Trp	Phe	Thr	Asp	Pro	Glu	Ile	Gln
	290					295					300				
Asn	Phe	Ile	Lys	Glu	Lys	Gly	Leu	Ile	Asn	Glu	Thr	Gly	Leu	Glu	His
305					310					315					320
Tyr	Phe	Ile	Arg	Arg	Ala	Ala	Asp	Leu	Val	Ala	Ala	Lys	Gly	Lys	Lys
			325					330					335		
Met	Ile	Gly	Trp	Asp	Glu	Ile	Val	Asp	Ala	Gly	Ile	Ser	Pro	Ser	Lys
		340						345				350			
Ala	Leu	Val	Met	Trp	Trp	Arg	His	Asp	Arg	Lys	Tyr	Gln	Leu	Leu	Lys
		355					360					365			
Ala	Leu	Glu	Gln	Gly	Tyr	Gln	Val	Val	Leu	Thr	Pro	Arg	Arg	Pro	Leu
	370					375					380				
Tyr	Gly	Asp	Phe	Val	Gln	Asp	Ala	Ser	His	Lys	Val	Gly	Arg	Tyr	Trp
385					390					395					400

Asp Val Leu Lys Phe Glu Leu
130 135

Asp Gly Phe Asn Pro Leu Gln Asp Ile Tyr Ala Leu Pro Glu Pro Ile
 405 410 415
 Ser His Leu Phe Lys Gly Tyr Glu Asp Gln Ile Leu Gly Met Gln Phe
 420 425 430
 Thr Leu Trp Thr Glu Arg Ile Ala Asp Gly Lys Arg Leu Asp Phe Met
 435 440 445
 Thr Phe Pro Arg Leu Ile Ala Leu Ala Glu Ser Ala Trp Thr Ser Ser
 450 455 460
 Lys Glu Lys Asp Trp Ser Arg Phe Cys Met Arg Leu Pro Ser Phe Leu
 465 470 475 480
 Glu Tyr Leu Lys Glu Gln Gly Ile Tyr Tyr Phe Asp Val Ile His Pro
 485 490 495
 Gln Glu Thr Pro Glu Pro Gly Gly Pro Glu Lys Ala Asp Val Leu Gln
 500 505 510
 Asn Gly

<210> 9966

<211> 404

<212> PRT

<213> B.fragilis

<400> 9966

Asn Met Asn Leu Lys Pro Leu Leu Gly Ala Ala Cys Ala Met Ile Cys
 1 5 10 15
 Val Ala Cys Ser Asn His Lys Pro Thr Val Pro Ser Phe Ile Thr Glu
 20 25 30
 Asn Val Glu Phe Ala Lys Ala Gln Leu Gly Leu Ala Ile Asp Thr Ile
 35 40 45
 Glu Ala Ser Gly Lys Cys Leu Asn Pro Val Thr Leu Asn Arg Asp Gly
 50 55 60
 Ser Val Tyr Tyr Cys Gly Tyr Ala Asp Trp Arg Ser Gly Phe Phe Pro
 65 70 75 80
 Gly Ser Ile Trp Tyr Leu Tyr Glu Leu Thr Gly Asp Thr Ser Tyr Leu
 85 90 95
 Pro Leu Ala Arg Lys Tyr Thr Glu Ala Ile Arg Pro Ala Glu His Leu
 100 105 110
 Thr Trp His His Asp Ile Gly Phe Ile Ile Asn Cys Ser Phe Gly Asn
 115 120 125
 Gly Leu Arg Leu Ala Pro Asp Thr Ala Ser Tyr Lys Asp Val Met Val
 130 135 140
 Gln Ala Ala Lys Ser Leu Cys Thr Arg Phe Arg Pro Asn Ala Gly Val
 145 150 155 160
 Ile Gln Ser Trp Asp Val Lys Gly Asn Ser Trp Gln Ser Glu Arg Gly
 165 170 175
 Trp Glu Cys Pro Val Ile Ile Asp Asn Met Met Asn Leu Glu Leu Leu
 180 185 190
 Phe Glu Ala Thr Lys Leu Ser Gly Asp Ser Thr Phe His Lys Val Ala
 195 200 205
 Val Ala His Ala Asp Arg Thr Leu Ser Glu His Phe Arg Pro Asp Gly
 210 215 220
 Ser Cys Tyr His Val Val Asp Tyr Asn Ile Ser Asp Gly Ser Val Arg
 225 230 235 240
 His Lys Gln Thr Ala Gln Gly Tyr Ala Asp Glu Ser Val Trp Ser Arg
 245 250 255
 Gly Gln Ala Trp Ala Ile Tyr Gly Phe Thr Ile Cys Tyr Arg Glu Thr
 260 265 270
 Lys Asp Arg Lys Tyr Leu Asp Gln Ala Leu Lys Thr Phe Asn Arg Met
 275 280 285

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Lys Asn Asp Pro His Met Pro Glu Asp Leu Ile Pro Tyr Trp Asp Met
 290          295          300
Asp Ala Pro Asn Ile Pro Asp Glu Pro Arg Asp Val Ser Ser Ala Ser
305          310          315          320
Cys Ile Ala Ser Ala Leu Tyr Glu Ile Ser Thr Tyr Asp Val Pro Asp
          325          330          335
Ala Ala Ser Tyr Arg Glu Tyr Ala Asp Arg Ile Met His Ser Leu Ala
          340          345          350
Ser Pro Asp Tyr Arg Ala Ala Leu Gly Thr Asn Gly Asn Phe Ile Leu
          355          360          365
Met His Ser Val Gly Ser Ile Pro His Asn Ser Glu Ile Asp Val Pro
          370          375          380
Leu Asn Tyr Ala Asp Tyr Tyr Phe Leu Glu Ala Leu Lys Arg Arg Lys
385          390          395          400
Asp Leu Asp Lys

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<210> 9967

<211> 474

<212> PRT

<213> B.fragilis

<400> 9967

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Leu Leu Asp Phe Arg Lys Phe Asp Gln Asn Tyr Ile Gln Leu Lys Leu
 1          5          10          15
Ser Glu Gln Ser Leu Asn Thr Phe Leu Glu Glu Val Tyr Leu Ser Phe
          20          25          30
Ser Ala Tyr Ala Ser Gln Lys Ser Ile Ser Tyr His Leu Lys Leu Leu
          35          40          45
Glu Gln Asp Ile Ser Ile Trp Ile Asp Asp Trp Gln Met Arg Lys Val
          50          55          60
Leu Phe Asn Leu Leu Ser Asn Ala Phe Lys His Val Pro Asp Lys Gly
65          70          75          80
Glu Ile Ser Ile Leu Thr Ser Thr Thr Pro Asp Gln Val Val Ile Ala
          85          90          95
Val Lys Asp Ser Gly Asn Gly Ile Ser Lys Glu Glu Gln Glu Arg Ile
          100          105          110
Phe Asp Arg Phe Tyr Gln Ala Asp Asn Arg Asn Lys Ala Ile His Val
          115          120          125
Gly Thr Gly Ile Gly Leu Ala Leu Thr Lys Ser Ile Ile Gln Leu His
          130          135          140
His Gly Thr Ile Glu Val Glu Ser Glu Leu Asn Glu Gly Ser Cys Phe
145          150          155          160
Ile Val Lys Leu Pro Lys Thr Arg Asp Cys Phe Glu Lys Asp Thr Glu
          165          170          175
Val Val Phe Leu Glu Ser Pro Glu Lys Glu Pro Met Val Gln Glu Asn
          180          185          190
Thr Ile Pro Asp Glu Asn Phe Met Lys Lys Asp Asp Ser Thr Phe Glu
          195          200          205
Thr Pro Leu Ile Asp Glu Arg Glu Gly Lys Arg Lys Val Leu Leu Val
          210          215          220
Glu Asp Asn Val Glu Leu Leu Gln Val Leu Lys Glu Ile Phe Ser Ser
225          230          235          240
Leu Tyr Gln Val Val Thr Ala Ala Asn Gly Glu Glu Gly Leu Lys Gln
          245          250          255
Ala Phe Ala Glu Val Pro Asp Leu Ile Val Ser Asp Val Met Met Pro
          260          265          270
Val Met Thr Gly Thr Glu Met Cys Leu Lys Ile Lys Asn Asn Ile Asn
275          280          285

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Leu Cys His Ile Pro Val Val Leu Leu Thr Ala Leu Asp Thr Val Asp
 290 295 300
 Gln Asn Ile Glu Gly Leu Arg Arg Gly Ala Asp Asp Tyr Ile Thr Lys
 305 310 315 320
 Pro Phe Asn Ala Lys Ile Leu Ile Thr Arg Cys Asn Asn Leu Ile Arg
 325 330 335
 Asn Arg Leu Leu Met Gln Ser Arg Phe Ala Lys Asp Gln Ile Leu Glu
 340 345 350
 Ile Asn Leu Leu Ala Ala Asn Pro Ile Asp Lys Gly Phe Leu Asp Arg
 355 360 365
 Val Ile Lys Val Val Asp Lys His Ile Asp Asn Glu Asp Phe Asp Ile
 370 375 380
 Gly Tyr Val Cys Gln Glu Leu Glu Met Gly Arg Thr Leu Leu His Thr
 385 390 395 400
 Asn Phe Lys Ala Leu Thr Gly Met Thr Pro Asn Glu Phe Ile Leu Asn
 405 410 415
 His Arg Leu Lys Ile Ala Ser Leu Met Leu Lys Asn Glu Pro Tyr Leu
 420 425 430
 Gln Val Ala Glu Ile Ser Asp Arg Leu Gly Phe Gly Ser Pro Arg Tyr
 435 440 445
 Phe Ser Arg Cys Phe Lys Asn Gln Tyr Asn Val Thr Pro Met Glu Tyr
 450 455 460
 Arg Lys Gly Ala Lys Gln Glu Asn Leu Lys
 465 470

<210> 9968

<211> 370

<212> PRT

<213> B.fragilis

<400> 9968

Lys Ile Gln Val Leu Phe Val His Leu His Pro Phe Lys Ala Lys Lys
 1 5 10 15
 Glu Met Ile Asp Glu Ser Ile Thr Ser Glu Ala Val Gly Leu Leu Lys
 20 25 30
 Ser Leu Ile Ser Ile Pro Ser Leu Ser Arg Glu Glu Glu Lys Ala Ala
 35 40 45
 Asp Tyr Leu Gln Asn Tyr Ile Glu Ala Glu Gly Met Thr Thr Gly Arg
 50 55 60
 Lys Gly Asn Asn Ile Trp Cys Leu Ser Pro Met Phe Asp Leu Lys Lys
 65 70 75 80
 Pro Thr Ile Leu Leu Asn Ser His Ile Asp Thr Val Lys Pro Val Asn
 85 90 95
 Gly Trp Arg Lys Asp Pro Phe Thr Pro Arg Glu Glu Asn Gly Lys Leu
 100 105 110
 Tyr Gly Leu Gly Ser Asn Asp Ala Gly Ala Ser Val Val Thr Leu Leu
 115 120 125
 Gln Val Phe Leu Gln Leu Cys Arg Lys Gln Gln Ser Tyr Asn Leu Ile
 130 135 140
 Tyr Leu Ala Ser Cys Glu Glu Glu Val Ser Gly Lys Gly Gly Ile Glu
 145 150 155 160
 Ser Val Leu Pro Gly Leu Pro Pro Ile Ser Phe Ala Val Val Gly Glu
 165 170 175
 Pro Thr Glu Met Gln Pro Ala Ile Ala Glu Lys Gly Leu Met Val Leu
 180 185 190
 Asp Val Thr Ala Thr Gly Lys Ala Gly His Ala Ala Arg Asn Glu Gly
 195 200 205
 Asp Asn Ala Ile Tyr Lys Val Leu Asp Asp Ile Ala Trp Phe Arg Asp
 210 215 220

Tyr Arg Phe Ala Lys Glu Ser Pro Leu Leu Gly Pro Val Lys Met Ser
 225 230 235 240
 Val Thr Val Ile Asn Ala Gly Thr Gln His Asn Val Ile Pro Asp Arg
 245 250 255
 Cys Ser Phe Val Val Asp Val Arg Ser Asn Glu Leu Tyr Ser Asn Glu
 260 265 270
 Glu Leu Phe Thr Glu Ile Gln Lys His Ile Ser Cys Lys Ala Glu Ala
 275 280 285
 Arg Ser Phe Arg Leu Asn Ser Ser Arg Ile Glu Glu Ser His Pro Phe
 290 295 300
 Val Gln Lys Ala Lys Lys Leu Gly Arg Val Pro Phe Gly Ser Pro Thr
 305 310 315 320
 Leu Ser Asp Gln Ala Leu Met Val Phe Pro Ser Val Lys Ile Gly Pro
 325 330 335
 Gly Arg Ser Ser Arg Ser His Thr Ala Asp Glu Tyr Ile Met Ile Lys
 340 345 350
 Glu Ile Glu Glu Ala Leu Glu Leu Tyr Leu Lys Ile Leu Asp Gly Leu
 355 360 365
 Glu Ile
 370

<210> 9969

<211> 170

<212> PRT

<213> B.fragilis

<400> 9969

Val Thr Met Ser Ile Asp Phe Phe Ile Ala Lys Cys Gln Thr Glu Asn
 1 5 10 15
 Ile Val Asp Lys Glu Phe Gly Ile Cys Asp Asp Glu Asp Glu Glu Lys
 20 25 30
 Lys Thr Pro Ala Tyr Val Asp Arg Asn Gln Pro Asp Lys Trp Val Ala
 35 40 45
 Val Val Lys Asn Gln Thr Asn Gln Ser Ile Asn Phe Thr Ala Val Asp
 50 55 60
 Asn Cys Val Glu Met Asn Arg Ser Asp Gly Thr Met Asp Phe Arg Cys
 65 70 75 80
 Asp Ala Met Leu Thr Asn Asp Asp Asn Ile Val Phe Val Glu Leu Lys
 85 90 95
 Val Gln Ala Ala Asp Trp Ile Phe His Ala Val Asp Glu Gln Leu Gln
 100 105 110
 Thr Thr Ile Asp His Phe Lys Ala Asn His Asp Leu Ser Arg Tyr Lys
 115 120 125
 Tyr Lys Arg Ala Phe Val Cys Asn Lys Arg His Pro Asn Phe Arg Val
 130 135 140
 Ser Tyr Lys Asp Lys Met Thr Ser Phe Ser Met Lys Asn Gly Ile Arg
 145 150 155 160
 Leu Asn Leu Val Arg Glu Ile Ile Phe Lys
 165 170

<210> 9970

<211> 299

<212> PRT

<213> B.fragilis

<400> 9970

Leu Leu Pro Thr Ser Phe Cys Ile Ser Phe His Ser Leu His Asn His
 1 5 10 15
 Cys Pro Phe Pro Leu His Asn Thr Phe Phe Leu Phe Ser Thr Ala Leu

20 25 30
 Leu Pro Pro Phe Pro His Tyr Asn Ile Phe Leu Phe Phe Ile Lys Ile
 35 40 45
 Phe Phe Thr Phe Pro Phe Phe Ser Phe Pro Pro Phe Thr Leu Leu Pro
 50 55 60
 Ser Leu Phe Leu Phe Leu Arg Phe Ser Phe Ile Ser Phe Ser Leu Ser
 65 70 75 80
 Phe Phe Leu Leu Phe Phe Leu Ser Phe Pro His Pro Pro Leu Pro Leu
 85 90 95
 Leu Leu Leu Ser Leu Phe Ser Leu Leu Ile Pro Thr Pro Leu Phe Phe
 100 105 110
 Ser His Leu Phe Leu Phe Ser Ser Leu Ser Phe Leu Ser Ile Ser Phe
 115 120 125
 Pro Leu Ile Leu Ser Phe Leu Ser Ser Tyr Phe Leu Phe Ser Phe Pro
 130 135 140
 Leu Leu Ile Thr Phe Ser Ser Glu Thr Leu Leu Leu Phe Leu Leu Leu
 145 150 155 160
 Phe Leu Ser Phe Leu Ser Leu Leu Thr Phe Phe Phe His Ser His Pro
 165 170 175
 Ser Pro Pro Phe Leu Phe His Leu Cys Leu Phe Tyr Pro Ser Leu Phe
 180 185 190
 Leu Ser Leu Pro Ser Pro Ser Ser Ser Leu Ile Pro Ser Leu Tyr
 195 200 205
 Ser Pro Leu Leu Cys Pro Pro Pro Pro Ser Ser Ser Ser Tyr Phe
 210 215 220
 Thr Pro Ile Pro Leu Leu Leu Leu Ser Phe Leu Phe His Ile Phe His
 225 230 235 240
 Pro Pro Phe Ser Ser Ser Leu Thr Phe Pro Ser Leu Ser Pro Phe Leu
 245 250 255
 Ile Leu His Leu Phe Leu Leu Phe Ser Pro Leu Pro Leu Leu Phe Cys
 260 265 270
 Tyr Leu Pro Ser Ser Phe Pro Phe Ser Ser Phe Pro Tyr Asn Tyr Ser
 275 280 285
 Leu Phe Leu Leu Ser His Ser Pro Leu Ser Phe
 290 295

<210> 9971
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 9971
 Glu Thr Tyr Thr Leu Leu Leu Lys Arg Tyr Lys Ser Asp Asp Val Glu
 1 5 10 15
 Gly Glu Tyr Gln Asn Tyr Ile Val Ser Ala Val Ile Gln Ile Lys Ser
 20 25 30
 Asn Lys Ile Leu Leu Phe Thr Asp Ser Tyr Phe Ser Phe Ser Gly Ser
 35 40 45
 Thr Arg Thr Val Glu Val Arg Asn Gly Trp Phe Leu Trp Arg Arg Thr
 50 55 60
 Ala Leu Leu Ser Arg
 65

<210> 9972
 <211> 405
 <212> PRT
 <213> B.fragilis

<400> 9972

Asp Val Ser Ala Val Gly Thr Phe Arg Arg Lys Ile Gly Gly Leu Trp
 1 5 10 15
 Ala Ala Val Asn Ile Val Leu Pro Asp Leu Thr Ala Gly Ser Thr Glu
 20 25 30
 Gly Val Ile Asp Phe Ala Gly Val Thr Ser Gly Met Leu Thr His Asp
 35 40 45
 Gly Gly Gln Asp Thr Asp Asn Ile Ile Ala Val Arg Val Lys Ala Asn
 50 55 60
 Asp Arg Trp Ser Asp Ala Gly Met Tyr Thr Ile Arg Thr Val Lys Pro
 65 70 75 80
 Val Phe Lys Val Gly Tyr Tyr Pro Gly Asn Val Trp Thr Lys Glu Phe
 85 90 95
 Thr Leu Asn Thr Leu Thr Ala Asp Ser Val Lys Thr Gly Asn Leu Asp
 100 105 110
 Lys Phe Thr Asp Ile Ala Tyr Glu Phe Ser Ala Asp Gly Asn Ser Trp
 115 120 125
 Glu Ala Met Pro Gly Asp Leu Arg Lys Ala Gly Leu Ser Pro Gly Thr
 130 135 140
 Ser Tyr Tyr Val Arg Ala Lys Tyr Arg Gly Glu Val Pro Gly Glu Lys
 145 150 155 160
 Val Glu Val Lys Thr Tyr Glu Ala Leu Ser Ile Pro Asn Ser Asp Phe
 165 170 175
 Asn Ala Gly Tyr Asp Val Thr Tyr Pro Lys Ser Glu Asn Pro Leu Tyr
 180 185 190
 Thr Phe Lys Gly Asp Trp Ile Gly Thr Arg Asn Pro Leu Thr Cys His
 195 200 205
 Thr Asp Gly Ala Asn Ala Phe Tyr Val Ser Lys Ser Ser Thr Leu Pro
 210 215 220
 Val Val Asp Gly Glu Arg Asn Val Ala His Met Met Thr Leu Gly Trp
 225 230 235 240
 Gly Ala Gly Asn Thr Cys Ser Phe Gly Asn Lys Asp Tyr Trp Leu Gly
 245 250 255
 Asn Ser Val Ile Asn His Ile Ser Ala Gly Ile Val Cys Val Gly Asp
 260 265 270
 Tyr Glu Ala Ala Gly Asp Val Val Asn Gly Lys Ala Ala Tyr Ile Arg
 275 280 285
 Pro Thr Ser Met Ser Phe Val Tyr Lys Ala Ala Pro Tyr Lys Asp Asp
 290 295 300
 Glu Tyr Leu Ile Glu Ala Tyr Leu Glu Asn Ile Thr Gly Glu Val Glu
 305 310 315 320
 Thr Ile Ile Gly Lys Ala Tyr Leu Lys Ser Gly Thr Ala Tyr Ser Ser
 325 330 335
 Tyr Gln Thr Gln Thr Leu Asn Phe Glu Tyr Asn Asn Glu His Arg Asn
 340 345 350
 Leu Pro Ile Ser His Val Lys Ile Ile Phe Lys Ala Gly Thr Lys Glu
 355 360 365
 Asp Arg Asp His Leu Glu Asp Lys Phe Arg Asp Ala Lys Val Pro Tyr
 370 375 380
 Gly Asp Ala Tyr Ile Ile Gly Ser Gln Phe Trp Leu Asp Ser Phe Thr
 385 390 395 400
 Leu His Tyr Asp Lys
 405

<210> 9973

<211> 246

<212> PRT

<213> B.fragilis

<400> 9973

Cys Leu Tyr His Arg Phe Thr Val Leu Ala Arg Phe Ile His Phe Thr
 1 5 10 15
 Leu Arg Gln Ile Asn Met Lys Thr Tyr Ile Tyr Leu Phe Leu Leu Leu
 20 25 30
 Leu Ala Thr Ala Ser Cys Ser Glu Gln Thr Ala Pro Asp His Ser Val
 35 40 45
 Gly Tyr Leu Arg Val Glu Asn Ile Ile Leu Ser Cys Asp Thr Glu Thr
 50 55 60
 Leu Pro Ile Thr Arg Ala Val Asp Ala Gly Leu Lys Leu Glu Ile Trp
 65 70 75 80
 Gln Gly Ser Glu Cys Val Arg Ser Tyr Asp Pro Gly Ala Ala Glu Leu
 85 90 95
 Ser Lys Arg Ile Val Leu Pro Val Gly Glu Tyr Thr Leu Lys Ala Phe
 100 105 110
 Thr Pro Asp Gln Thr Glu Ala Pro Asp Asn Glu Ser Gly Thr Pro Ile
 115 120 125
 Tyr Ser Val Asp Tyr Pro Phe Ala Ile Val Ser Glu Asp Val Thr Leu
 130 135 140
 Ile Ser Val Lys Ala Pro Gln Ile Asn Ile Gly Val Gly Val Glu Tyr
 145 150 155 160
 Ser Asp Glu Phe Met Ala Asn Phe Thr Asp Phe Ser Val Thr Val Ser
 165 170 175
 Ser Pro Thr Gly Arg Gln Ala Ser Leu Ala Gly Asn Val Thr Asp Leu
 180 185 190
 Leu Tyr Phe Asn Val Pro Thr Gly Gly Thr His Leu Ser Tyr Thr Leu
 195 200 205
 Thr Ala Thr Asn Ala Asp Gly Glu Thr Met Thr Ser Glu Ala Arg Ser
 210 215 220
 Ile Leu Gln Glu Ser Gly Ala Glu Leu Thr Ser Gly Asn Tyr Lys Val
 225 230 235 240
 Arg Ile Gly Leu Val Gln
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<210> 9974
 <211> 199
 <212> PRT
 <213> B.fragilis

<400> 9974
 Phe Cys Lys His Ile Arg Ile Pro Tyr Ile Leu Phe Leu Ser Lys Val
 1 5 10 15
 Ile Phe Ile Leu Phe Ile Leu Phe His Phe Phe Val Tyr Leu Leu Arg
 20 25 30
 Thr Glu His Phe Asn Gly Asn Arg Cys Ser Lys Ser Lys Lys Asn Met
 35 40 45
 Glu Thr Glu Glu Glu Ile Gln Asn Val Asn Val His His Gly His Asn
 50 55 60
 Ile Arg Arg Thr Arg Ile Glu Lys Asn Ile Lys Gln Asp Ala Leu Ala
 65 70 75 80
 Ala Leu Val Asn Met Thr Gln Pro Asn Val Ser Lys Tyr Glu Lys Met
 85 90 95
 Arg Val Ile Glu Asp Glu Met Leu Asn Arg Phe Ala Arg Ala Leu Asn
 100 105 110
 Val Pro Val Glu Tyr Leu Lys Thr Leu Glu Glu Asp Ala Pro Ser Val
 115 120 125
 Val Phe Glu Asn Ile Thr Asn Asn Val His Asp Asn Lys Asp Ser Ser
 130 135 140
 Val Pro Ile Thr Gly Tyr Lys Gly Gln Asp Ala Thr Thr Asn Ser Phe
 145 150 155 160

Asn Pro Ile Asp Lys Ile Thr Glu Leu Tyr Glu Arg Leu Leu Glu Glu
 165 170 175
 Lys Asp Glu Lys Tyr Ala Ala Leu Glu Lys Arg Ile Gln Gly Leu Glu
 180 185 190
 Gln Gln Asn Asn Ser Gly Lys
 195

<210> 9975
 <211> 85
 <212> PRT
 <213> B.fragilis

<400> 9975
 Glu Ile Phe Lys Lys Glu Val Ser Lys Leu Gly Lys Cys Asn Arg Leu
 1 5 10 15
 Ser Arg Gln Met Leu Thr Cys Phe Glu Val Asn Ala Tyr Leu Phe Ser
 20 25 30
 Gly Lys Ala Arg Leu Tyr Arg Leu Lys Arg Ala Val Leu Arg Gln Arg
 35 40 45
 Asn Gln Pro Phe Leu Thr Ser Thr Val Leu Val Asp Pro Glu Lys Glu
 50 55 60
 Lys Tyr Glu Ser Val Lys Arg Arg Ile Leu Leu Leu Phe Ile Cys Ile
 65 70 75 80
 Thr Ala Glu Thr Ile
 85

<210> 9976
 <211> 244
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (27), (71), (93), (130), (171), (174), (201), (203)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 9976
 Arg Leu Val Glu Val Glu Asn Gln Ala Leu Pro Ala Ile Ile Asp Asp
 1 5 10 15
 Lys Asn His Thr Val Leu Val Tyr Val Ser Xaa Lys Gln Asp Leu Ser
 20 25 30
 Ala Val Lys Ile Thr Lys Met Ile Leu Gly Gly Ser Lys Ala Thr Ile
 35 40 45
 Thr Pro Asp Pro Ser Thr Val Thr Asn Phe Arg Arg Pro Gln Glu Phe
 50 55 60
 Val Val Asn Arg Phe Asp Xaa Glu Glu Leu Trp Thr Val Asp Val Val
 65 70 75 80
 Arg Thr Thr Ser Thr Gly Thr Thr Gly Ser Ala Asp Xaa Trp Ala Thr
 85 90 95
 Arg Ala Thr Leu Asn Gly Gly Met Lys Gln Gly Thr Thr Pro Arg Val
 100 105 110
 Glu Tyr Arg Lys Lys Ser Glu Asp Thr Trp Thr Val Val Pro Glu Thr
 115 120 125
 Asp Xaa Lys Leu Glu Ser Gly Thr Thr Phe Ser Thr Thr Leu Thr Gly
 130 135 140
 Leu Gln Asp Gly Thr Asp Tyr Val Trp Arg Val Val Val Glu Glu Val
 145 150 155 160
 Pro Ser Thr Glu Ser Gly Phe Thr Thr Glu Xaa Ile Gln Xaa Ile Pro
 165 170 175

Asn Leu Asn Phe Asp Thr Trp Ser Gln Asn Pro Thr Gly Thr Phe Lys
 180 185 190
 Lys Ser Trp Tyr Pro Asn Ala Asp Xaa Ser Xaa Ser Phe Trp Ala Thr
 195 200 205
 Gly Asn Asp Gly Val Thr Ser Ser Leu Ala Gly Ser Arg Asp Ser Ser
 210 215 220
 Thr Arg Pro Gly Arg Lys Glu Arg Cys Glu Arg Lys Gly Gly Leu Tyr
 225 230 235 240
 Gly His Phe Met

<210> 9977
 <211> 183
 <212> PRT
 <213> B.fragilis

<400> 9977
 Pro Leu His Trp Arg Ala Ala Val Ile Arg Val Pro Ala Pro Glu Glu
 1 5 10 15
 Lys Ser Val Val Asn Gly Lys Ala Ala Tyr Met Val Thr Leu Cys Ser
 20 25 30
 Val Pro Leu Val Gly Val Ala Ala Gly Asn Leu Phe Ile Gly Asp Tyr
 35 40 45
 Lys Thr Asn Ala Gln Ser Pro Lys Asp Ser Pro Lys Phe Gly Arg Ser
 50 55 60
 Phe Thr Gly Ala Arg Pro Thr Gly Leu Lys Gly Trp Tyr Lys Tyr Thr
 65 70 75 80
 Ser Lys Pro Val Asp Tyr Val Gly Asn Pro Asp Asn Leu Lys Asn Asp
 85 90 95
 Glu Cys His Ile Tyr Leu Arg Leu Trp Asp Asp Lys Asp Asn Glu Ile
 100 105 110
 Gly Tyr Gly Glu Phe Ile Gly Lys Glu Thr Val Thr Gln Tyr Thr Gln
 115 120 125
 Phe Arg Phe Asp Val Thr Tyr Thr Asn Lys Thr Ala Lys Pro Ala Lys
 130 135 140
 Ile Thr Ile Val Ala Thr Ser Ser His Tyr Gly Asp Phe Thr Gly
 145 150 155 160
 Met Lys Val Thr Gly Ser Val Gly Val Gly Ser Glu Leu Trp Val Asp
 165 170 175
 Glu Phe Glu Leu Leu Tyr Glu
 180

<210> 9978
 <211> 329
 <212> PRT
 <213> B.fragilis

<400> 9978
 Ile Arg Lys Arg Ala Met His Lys Ser Val Leu Ser Leu Val Cys Cys
 1 5 10 15
 Leu Phe Phe Phe Leu Ser Cys Gln Glu Glu Ile Glu Thr Met Pro Asn
 20 25 30
 Gly Ser Leu Asn Ile Val Leu Thr Asp Glu Ala Ala Val Thr Arg Thr
 35 40 45
 Leu Pro Glu Ala Leu Ser Asp Glu Leu Arg Gln Gln Phe Thr Ile Glu
 50 55 60
 Leu Leu Arg Asp Arg Glu Gly Thr Ile Val Pro Glu Tyr Lys Gly Ala
 65 70 75 80
 Leu Arg Asp Phe Gly Asp Gln Arg Val Phe Lys Val Gly Ser Tyr Gln

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      85              90              95
Leu Lys Ala Tyr Leu Gly Glu Asn Pro Ser Leu Ala Leu Asp Ala Pro
      100              105              110
Tyr Tyr Tyr Gly Glu Val Gln Asp Ile Ala Ile Glu Lys Gly Lys Ala
      115              120              125
Thr Thr Val Thr Val Gly Cys Lys Val Ala Asn Ala Leu Ala Thr Phe
      130              135              140
Glu Ile Val Asn Gln Glu Val Phe Asp Lys Arg Leu Lys Asp Tyr Tyr
      145              150              155              160
Val Glu Val Ser Ala Gly Gly Glu Ser Val Thr Trp Lys Pro Gly Asp
      165              170              175
Ala Thr His Pro Tyr Phe Lys Ala Gly Gly Arg Val Thr Met Ala Leu
      180              185              190
Ile Gly Thr Ser Val Glu Thr Gly Gln Glu Gly Ser Tyr Ala Leu Asn
      195              200              205
Pro Ile Glu Thr Val Lys Ala Gly Val Lys Tyr Asn Tyr Lys Leu Ser
      210              215              220
Met Lys Ala Ser Asn Val Ser Leu Glu Val Thr Thr Glu Thr Gln Gln
      225              230              235              240
Glu Pro Ile Thr Ile Asn Glu Thr Val Pro Asp Ser Trp Leu Pro Lys
      245              250              255
Ala Lys Val Phe Ser Glu Asp Phe Asp Glu Asn His Val Leu Thr Tyr
      260              265              270
Thr Glu Thr Ala Asp Ala Leu Ser Arg Ala Gly Ile Ala Tyr Thr Ala
      275              280              285
Leu Arg Pro Val Gln Asp Val Glu Phe Ala Phe Asn Phe Ala Asp Lys
      290              295              300
His Leu Glu His Leu Asn Lys Thr Tyr Leu Leu Ser Glu Leu Ser Glu
      305              310              315              320
Glu Arg Ser Ala Gly Phe Gly Leu Leu
      325

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<210> 9979

<211> 65

<212> PRT

<213> B.fragilis

<400> 9979

```

Lys Ser Glu Gly Gly Lys Arg Lys Glu Gly Glu Ser Lys Glu Asn Phe
1      5      10      15
Tyr Glu Lys Glu Glu Asn Val Ile Met Trp Lys Arg Trp Glu Lys Cys
      20      25      30
Ser Arg Lys Lys Lys Lys Gly Val Met Glu Arg Lys Gly Ala Val Ile
      35      40      45
Met Lys Gly Val Lys Arg Asp Thr Lys Arg Ser Arg Lys Lys Leu Lys
      50      55      60
Gly
65

```

<210> 9980

<211> 133

<212> PRT

<213> B.fragilis

<400> 9980

```

Gly Ile Arg Ile Cys Leu Gln Asn Gln Leu Phe Tyr Ala Tyr Phe Thr
1      5      10      15
Ala Ile Glu Ile Thr Thr Ile Leu Leu His Thr Met Ile Gly Leu Leu
      20      25      30

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Thr Thr Lys Glu Leu Asp Phe Leu Thr Lys Leu Ala Glu Leu Leu Lys
      35          40          45
Glu Tyr Ser Ala Ile Ile Ser Tyr Gly His Cys Ser Glu Leu Arg Ile
      50          55          60
Leu Val Cys Ala Gly Asp Ser Glu Asp Val Glu Lys Tyr Pro Ile Ile
      65          70          75          80
Phe Glu Asp Ser Phe Asp Glu Asn Glu Ile Tyr Asp Leu Leu Arg Lys
      85          90          95
Asn Arg Lys Arg Ile Glu Glu Ile Ile Glu Arg Glu Val Ala Glu Ala
      100          105          110
Val Pro Glu Gly Glu Leu Ser Gln Pro Asp Asp Gln Ala Gly Ser Met
      115          120          125
Ala Asp His Phe His
      130

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<210> 9981

<211> 422

<212> PRT

<213> B.fragilis

<400> 9981

```

Cys Ile Phe Val Val Tyr Leu Asn Val Asn Ile Asn Arg Gly Leu Phe
1      5          10          15
Met Asn Glu Thr Val Asn Leu Thr Val Tyr Gln Phe Gly Pro Ile Ser
      20          25          30
Glu Ala Asp Val Val Phe Asp Lys Tyr Thr Val Leu Ile Gly Lys Gln
      35          40          45
Gly Ser Gly Lys Ser Thr Ile Ala Lys Leu Tyr Ser Met Phe Thr Trp
      50          55          60
Leu Glu Lys Gly Leu Ala Arg Arg Ile Thr Ser Glu Lys Tyr Ile Thr
      65          70          75          80
Gln Tyr Ser Arg Phe Gln Lys Ile Tyr Cys Ala Tyr His Arg Leu Glu
      85          90          95
Ser Tyr Phe Lys Arg Glu Thr Val Ile Arg Phe Tyr Gly Leu His Tyr
      100          105          110
Asn Phe Phe Tyr Glu Asn Glu Lys Phe His Val Glu Ala Lys Gly Leu
      115          120          125
Pro Glu Ser Tyr Lys Val Ala Lys Val Met Tyr Val Pro Ala Glu Arg
      130          135          140
Asn Phe Leu Ser Thr Ala Asp Asp Thr Asp Gly Leu Lys Ser Leu Pro
      145          150          155          160
Glu Ser Leu Glu Thr Leu Leu Glu Glu Phe Asp Lys Ala Lys Glu Ala
      165          170          175
Phe Lys Thr Gly Tyr Arg Leu Pro Phe Asn Asp Thr Asp Phe Glu Tyr
      180          185          190
Asp Ala Leu Asn Lys Ile Ser Trp Ile Lys Gly Ser Asp Tyr Lys Ile
      195          200          205
Arg Leu Ser Ala Ala Ser Ser Gly Tyr Gln Ser Val Leu Pro Leu Ser
      210          215          220
Leu Ile Thr Arg Phe Leu Ser Asp Leu Val Leu Asp Asn Ala Asn Lys
      225          230          235          240
Glu Asp Leu Ser Ile Lys Glu Lys Lys Gln Ile Glu Lys Glu Val Asn
      245          250          255
Lys Val Met Asn Asp Lys Ser Leu Thr Asp Gly Val Lys Phe Ala Met
      260          265          270
Leu Arg Asn Ile Ser Ser Arg Phe Lys Tyr Ser Cys Phe Val Asn Ile
      275          280          285
Val Glu Glu Met Glu Leu Asn Leu Tyr Pro Glu Ser Gln Arg Ser Val
      290          295          300

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Leu Phe Asp Leu Leu Ser Tyr Ala Asn Lys Ile Glu Leu Asn Arg Leu
 305 310 315 320
 Val Leu Thr Thr His Ser Pro Tyr Val Ile Asn Tyr Leu Thr Leu Ala
 325 330 335
 Ala Lys Ala Phe Leu Leu Thr Gln Lys Val Ser Ala Asn Glu Thr Leu
 340 345 350
 Gln Glu Arg Ile Lys Glu Val Val Pro Ala Asp Ser Thr Ile Asp Pro
 355 360 365
 Ala Arg Leu Arg Ile Tyr Glu Leu Lys Asp Gly Gly Val Phe Arg Leu
 370 375 380
 Ser Thr Tyr Glu Gly Leu Pro Ser Asp Glu Asn Phe Leu Asn Ile Gln
 385 390 395 400
 Leu Gly Val Thr Asn Glu Leu Phe Asp Gln Leu Leu Glu Ile Glu Gln
 405 410 415
 Glu Phe Asp Tyr Lys Asn
 420

<210> 9982

<211> 681

<212> PRT

<213> B.fragilis

<400> 9982

Phe Ser Val Pro His Gln Pro Met Val Met Tyr Asp Arg Gln Asn Ile
 1 5 10 15
 Thr Arg Gln Ala Gln His Gln Gly Tyr Pro Val Thr Met Glu Lys Asn
 20 25 30
 Pro Asp Gly Thr Trp Thr Glu Ala Ala Val Tyr Ile Gly Trp Ala Gly
 35 40 45
 Phe Val Glu Gly Thr Ser Trp Gln Lys Asp Asn Lys Leu Asp Val Arg
 50 55 60
 Asn Thr Thr Thr Leu Thr Tyr Thr Pro Ile Lys Gln Gln Leu Ile Phe
 65 70 75 80
 Lys Gly Asp Phe Thr Tyr Tyr Ser Ser Lys Ser Thr Arg Leu Arg Ala
 85 90 95
 Glu Asn Gln Tyr Asn Tyr Tyr Thr Gly Pro Glu Ile Met Gly Thr Arg
 100 105 110
 Asn Thr Phe Ser Ser Leu Glu Asn Met Asp Tyr Asn Arg Glu Tyr Ile
 115 120 125
 Ser Ser Asn Ile Thr Gly Asn Tyr Ile Pro Lys Phe Ser Asn Ser Asp
 130 135 140
 His Tyr Leu Asn Val Leu Leu Gly Trp Asn Leu Glu His Gln Asp Tyr
 145 150 155 160
 Lys Thr Ile Gln Thr Tyr Arg Arg Gly Leu Ile Ser Ala Thr Lys Pro
 165 170 175
 Ser Phe Ala Leu Met Asp Gly Asp Tyr Tyr Thr Thr Gly Gln Gly Gly
 180 185 190
 Asn Glu Trp Ala Tyr Val Gly Phe Leu Tyr Arg Leu Asn Tyr Asn Tyr
 195 200 205
 Lys Ser Arg Tyr Leu Ala Glu Val Ser Gly Arg Tyr Asp Ala Ser Ser
 210 215 220
 Lys Phe Pro Glu Asn Gln Gln Trp Gly Phe Phe Pro Ser Gly Ser Leu
 225 230 235 240
 Gly Trp Arg Ile Ser Glu Glu Pro Phe Met Lys Ser Thr Arg Asn Trp
 245 250 255
 Leu Asp Asn Leu Lys Val Arg Ala Ser Val Gly Ser Leu Gly Asn Gly
 260 265 270
 Asn Val Ser Pro Tyr Leu Tyr Leu Ser Thr Ile Pro Ile Lys Lys Thr
 275 280 285

Ser Val Ile Leu Gly Asp Ala Leu Gln Thr Tyr Ala Thr Thr Pro Asn
 290 295 300
 Ile Val Pro Asn Ser Leu Thr Trp Glu Lys Ser Thr Thr Tyr Asp Ile
 305 310 315 320
 Gly Leu Asp Val Asp Met Leu Ser Asn Arg Leu Ser Met Val Phe Asp
 325 330 335
 Tyr Tyr Gln Arg Tyr Thr Thr Asp Met Tyr Thr Val Gly Pro Thr Leu
 340 345 350
 Pro Ala Val Leu Gly Ala Ala Thr Pro Lys Gly Asn Asn Ala Glu Met
 355 360 365
 Lys Thr Lys Gly Trp Glu Leu Ser Val Met Trp Arg Asp Asn Phe Thr
 370 375 380
 Leu Ala Asn Lys Pro Phe Asn Tyr Ser Val Lys Ala Met Leu Trp Asp
 385 390 395 400
 Asn Arg Thr Trp Val Thr Lys Phe Asn Asn Pro Thr Lys Leu Leu Ser
 405 410 415
 Thr Tyr Tyr Glu Gly Gln Glu Ile Gly Thr Ile Trp Gly Tyr His Ile
 420 425 430
 Glu Gly Leu Phe Lys Asp Gln Ala Glu Ile Asp Ala His Ala Asp Gln
 435 440 445
 Ser Lys Leu Lys Val Ser Ala Thr Asn Ile Leu Lys Pro Gly Asp Leu
 450 455 460
 Lys Phe Ala Asp Leu Asp Lys Ser Gly Thr Val Asp Asn Gly Gln Asn
 465 470 475 480
 Thr Leu Asp Asp His Gly Asp Leu Lys Val Ile Gly Asn Thr Thr Pro
 485 490 495
 Arg Tyr Gln Phe Gly Leu Asn Leu Ser Ala Asn Trp Asn Gly Ile Gly
 500 505 510
 Ile Cys Ala Phe Phe Gln Gly Val Gly Lys Arg Asn Trp Tyr Pro His
 515 520 525
 Arg Glu Ser Ala Phe Phe Trp Gly Gln Tyr Asp Arg Pro Tyr Ser Tyr
 530 535 540
 Met Leu Lys Glu His Thr Gly Asn Asn Val Trp Thr Glu Glu Asn Gln
 545 550 555 560
 Asn Thr Asp Ala Tyr Trp Pro Arg Tyr Arg Gly Tyr Leu Ala Asn Gly
 565 570 575
 Ser Thr Lys Ala Leu Gly Ile Gln Ala Asn Asp Arg Tyr Leu Gln Asn
 580 585 590
 Ile Ala Tyr Val Arg Leu Lys Asn Leu Gln Ile Asp Tyr Thr Phe Asn
 595 600 605
 Lys Lys Phe Cys Asp Lys Leu His Leu Gln Asp Leu Lys Ile Tyr Leu
 610 615 620
 Ala Gly Glu Asn Leu Leu Thr Trp Thr Pro Leu Asn Lys His Thr Lys
 625 630 635 640
 Met Tyr Asp Pro Glu Gly Ile Ser Ala Gly Asp Ala Asp Phe Arg Ser
 645 650 655
 Thr Ala Asn Thr Asp Gly Asp Gly Tyr Gly Tyr Pro Ile Leu Ser Ser
 660 665 670
 Tyr Thr Ile Gly Ile Asn Val Thr Phe
 675 680

<210> 9983

<211> 190

<212> PRT

<213> B.fragilis

<400> 9983

Asp Tyr Gln Ala Gln Ala Ala Ile Ala Arg Leu Thr Arg Asn Ala Ala
 1 5 10 15

Phe Arg Tyr Lys Ala Tyr Leu Glu Gln Ile Asp Tyr Ala Thr Asn Arg
 20 25 30
 Gly Leu Glu Arg Asn Gln Met Glu Arg Leu Ala Thr Leu Asp Tyr Val
 35 40 45
 His Lys Gly Gln Asn Leu Phe Ile Thr Gly Ser Ser Gly Thr Glu Lys
 50 55 60
 Ser Tyr Leu Ala Cys Ala Leu Gly His Glu Ala Cys Lys Lys Gly Phe
 65 70 75 80
 Arg Thr Leu Tyr Ala Asn Ala Pro Lys Leu Leu Gly Ala Leu Lys Val
 85 90 95
 Ala Lys Val Lys Gly Thr Gln Glu Thr Glu Leu Lys Lys Ile Glu Arg
 100 105 110
 Cys Gln Leu Leu Ile Leu Asp Asp Leu Phe Leu Val Pro Leu Asp Ala
 115 120 125
 Lys Glu Arg Pro Ile Leu Leu Glu Ile Ile Glu Asp Arg His Glu Arg
 130 135 140
 Lys Ser Ile Ile Ile Thr Ser Gln Tyr Pro Ser Phe Asn Trp Tyr Asp
 145 150 155 160
 Met Val Gly Asp Pro Thr Ile Ala Asp Ala Ile Leu Asp Arg Ile Ile
 165 170 175
 His Thr Ala His Thr Ile Glu Leu Tyr Gly Glu Ser Met Arg
 180 185 190

<210> 9984

<211> 89

<212> PRT

<213> B.fragilis

<400> 9984

Cys Asn Leu Leu Thr Gln Lys Met Ser Met Lys Lys Tyr Trp Leu Ile
 1 5 10 15
 Gly Leu Tyr Ala Leu Ala Leu Thr Ser Cys Asp Ser Phe Leu Asn Cys
 20 25 30
 Glu Pro Glu Asn Ser Phe Ser Ser Glu Gly Phe Leu Glu Ser Gln Ser
 35 40 45
 Asp Leu Arg Leu Tyr Thr Asn Gly Phe Leu Gln Ser Phe Leu Pro Ser
 50 55 60
 Glu Glu Thr Ile Ala Trp Gly Gly Asp Gln Tyr Ala Ser Ser Pro Arg
 65 70 75 80
 Gly Trp Lys Asp Gln Arg Gly Ala Lys
 85

<210> 9985

<211> 130

<212> PRT

<213> B.fragilis

<400> 9985

Ser His Ser Arg Thr Arg Ser Met Glu Arg Lys Val Ser Ala Val Gln
 1 5 10 15
 Val Gly Gly Ser Leu Gly Arg Ser His Tyr Val Asn Gly Lys Phe Ile
 20 25 30
 Ala Ser Asn Leu Gly Ile Ile Leu Thr Pro Thr Asn Asn Pro Glu Tyr
 35 40 45
 Pro Ile Asn Val Arg Phe Tyr Ser Met Tyr Ser Asn Ala Ile Arg Lys
 50 55 60
 Gln Ile Val Asn Glu Leu Ala Asn Gly Thr Ser Lys Leu Thr Ile Pro
 65 70 75 80
 Val Asn Asp Leu Met Asn Tyr Tyr Val Glu Tyr Phe His Ile Ser Lys

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<210> 9986
<211> 207
<212> PRT
<213> B.fragilis
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<210> 9987
<211> 79
<212> PRT
<213> B.fragilis
```

<210> 9988

<211> 92
 <212> PRT
 <213> B.fragilis

<400> 9988

```

Lys Asp Asn Met Thr Glu Gln Glu Val Arg Arg Tyr Leu Arg Lys Met
1          5          10          15
Ser Glu Gln Asp Ser Gln Ser Ala Phe Arg Glu Phe Tyr Asp Met Thr
          20          25          30
Tyr Asp Arg Leu Phe Arg Ile Ala Tyr Tyr Tyr Thr His His Glu Glu
          35          40          45
Trp Ser Gln Lys Ile Val Leu Asp Val Phe Met Lys Leu Trp Glu Leu
          50          55          60
Glu Lys Pro Leu Tyr Phe Ala Pro Phe Gly Gln Ile Gly Phe Thr Thr
65          70          75          80
Leu Gly Arg Asp Met Ile Asp Pro Leu Lys Ser Trp
          85          90

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<210> 9989
 <211> 156
 <212> PRT
 <213> B.fragilis

<400> 9989

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Arg Gln Lys Met Val Ser Leu Val Met Val Cys Ser Gly Pro Met Ala
1          5          10          15
Gly Ile Gln Leu Ile Cys Lys Val Lys Arg Arg Pro Pro Gly Gly Ile
          20          25          30
Asn Asn Val Phe Lys Tyr Ser Thr Asp Trp Tyr Asn Glu Leu Val Arg
          35          40          45
Arg Asp Ala Asp Pro Ser Leu Asp Lys Val Arg Val Asn Asp Lys Gly
          50          55          60
Glu Tyr Glu Tyr Phe Gly Asn Thr Asn Trp Leu Asp Ile Ile Tyr Lys
65          70          75          80
Asp Gln Asn Tyr Ser Thr Glu His Asn Val Ser Ile Ser Gly Gly Asn
          85          90          95
Glu Arg Ala Arg Tyr Tyr Val Ser Gly Arg Tyr Tyr Asn Gln Asp Gly
          100          105          110
Ile Tyr Asn Ala Gly Asp Glu Lys Tyr Thr Gln Tyr Asn Ile Arg Ser
          115          120          125
Lys Gly Glu Ile Gln Ile Asn Lys Ser Leu Leu Leu Glu Asn Asn Thr
          130          135          140
Glu Cys His Asp Phe Pro Phe Pro Thr Ser Leu Trp
145          150          155

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<210> 9990
 <211> 299
 <212> PRT
 <213> B.fragilis

<400> 9990

```

Leu Pro Ser Leu Arg Leu Glu Arg Ile Leu Asn Leu Phe Tyr Gln Leu
1          5          10          15
Asn Ser Met Lys Val Lys Arg Cys Phe Leu Glu Trp Ser Leu Val Ser
          20          25          30
Arg Arg Phe Ala Val Ala Leu Thr Phe Val Leu Glu Gly Gly Met Leu
          35          40          45
Leu Ala Ala Asn Leu Ile Pro Val Lys Gly Val Val Lys Asp Thr Ser
          50          55          60

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Gly Glu Pro Leu Ala Gly Val Thr Val Arg Ile Lys Asp Gly Lys Ser
 65 70 75 80
 Gly Thr Ile Thr Asp Val Asn Gly Tyr Phe Val Leu Asp Val Glu Lys
 85 90 95
 Gly Lys Lys Leu Leu Ser Tyr Ile Gly Tyr Ser Glu Thr Glu Val
 100 105 110
 Leu Val Lys Asp Asp Gln Gln Met Gln Ile Val Leu Lys Glu Asp Val
 115 120 125
 Gln Gln Leu Gln Glu Val Val Val Gly Tyr Gly Thr Ala Lys Lys
 130 135 140
 Val Asn Leu Val Gly Ala Val Asp Gln Ile Asp Ser Lys Arg Ile Ala
 145 150 155 160
 Glu Arg Ser Asn Ser Asn Ile Ser Arg Ser Leu Gln Gly Met Val Pro
 165 170 175
 Gly Leu Asn Ile Thr Phe Ser Asp Gly Lys Pro Ser Arg Thr Pro Ser
 180 185 190
 Ile Asn Leu Arg Gly Thr Gly Ser Ile Gly Ala Gly Gly Ser Ala Leu
 195 200 205
 Val Leu Ile Asn Gly Val Glu Gly Asp Leu Asn Ser Val Asn Pro Ala
 210 215 220
 Asp Val Glu Ser Val Ser Val Leu Lys Asp Ala Ser Ser Ala Ala Ile
 225 230 235 240
 Tyr Gly Ala Arg Gly Ala Phe Cys Val Ile Leu Val Thr Thr Lys Asn
 245 250 255
 Ala Thr Ala Gly Lys Thr Lys Ile Asn Tyr Asn Gly Ser Phe Ser Met
 260 265 270
 His Gln Arg Thr Val Lys Thr Glu Asp Gly Ile Val Ser Asn Gly Leu
 275 280 285
 Gln Trp Thr Asp Gly Trp Tyr Thr Ala Tyr Leu
 290 295

<210> 9991

<211> 600

<212> PRT

<213> B.fragilis

<400> 9991

Ala Ala Met Thr Phe Cys Ser Met Leu Val Phe Cys Ser Phe Pro Thr
 1 5 10 15
 Leu Ala Gly Glu Ala Glu Ala Arg Val Val Leu Asn Met Asn Thr Gly
 20 25 30
 Trp Ala Phe His Arg Gly Glu Val Glu Ser Gly Gly Gln Pro Gly Leu
 35 40 45
 Asp Asp Ser Gly Trp Ile Ala Ala Thr Ile Pro His Ile Met Gln Leu
 50 55 60
 Glu Lys Lys His Cys Gly Gly Asp Ile Ile Tyr Asp Gly Val Gly Trp
 65 70 75 80
 Tyr Arg Arg Thr Phe Arg Val Pro Ser Gln Tyr Lys Asp Lys Gln Ile
 85 90 95
 Lys Ile Ser Phe Glu Gly Val Met Asn Ala Cys Glu Val Tyr Leu Asn
 100 105 110
 Gly Gln Lys Ile Ser Ala His Arg Gly Gly Tyr Val Gly Phe Val Thr
 115 120 125
 Asp Ile Thr Thr Arg Ile Asn Trp Asp Arg Asp Asn Leu Leu Ala Val
 130 135 140
 Arg Val Ser Ala Glu Tyr Asp Pro Leu Thr Pro Pro Gly Lys Pro Gln
 145 150 155 160
 Ala Gly Met Asp Phe Tyr Tyr Tyr Ser Gly Ile Tyr Arg Asp Val Glu
 165 170 175

Met Val Ile Ser Asp Pro Leu His Ile Thr His Ala Leu Glu Glu Glu
 180 185 190
 Glu Val Ala Gly Gly Gly Ile Phe Val Thr Tyr Pro Val Val Gly Lys
 195 200 205
 Glu Lys Ala Val Thr His Val Lys Ala His Val Arg Asn Glu Gly Lys
 210 215 220
 Arg Lys Arg Lys Ala Gln Leu Arg Thr Gln Leu Ile Asp Lys Ser Gly
 225 230 235 240
 Lys Ile Val Ala Cys Gln Leu Thr Pro Phe Arg Leu Ser Ala Gly Glu
 245 250 255
 Ala Ile His Leu Glu Gln Asn Leu Glu Ile Val His Pro Ser Leu Trp
 260 265 270
 His Pro Tyr Asp Pro Asn Leu Tyr Thr Leu Gln Asn Glu Ile Val Glu
 275 280 285
 Asn Gly Lys Val Val Asp Cys His Thr Glu Ser Ile Gly Ile Arg Thr
 290 295 300
 Ile Ala Tyr Thr Arg Asp Gly Gly Phe Tyr Ile Asn Gly Glu Ser Leu
 305 310 315 320
 Tyr Leu Arg Gly Ala Asn Arg His Gln Ala Phe Ala His Ile Gly Asp
 325 330 335
 Ala Ala Ala Asn Ser Met Gln Glu Arg Asp Val Ile Asp Leu Lys Arg
 340 345 350
 Gly Gly Cys Asn Ala Val Arg Ala Ala His Tyr Pro Gln Asp Pro Ala
 355 360 365
 Phe Leu Ala Ala Cys Asp Lys Tyr Gly Leu Leu Val Val Glu Cys Ile
 370 375 380
 Pro Gly Trp Gln Tyr Phe Lys Asn Asp Ser Thr Phe Ile Ser Arg Leu
 385 390 395 400
 Tyr Glu Val Gly Lys Gln Met Ile Arg Arg Asp Arg Asn His Pro Ser
 405 410 415
 Val Ile Leu Trp Glu Thr Ala Leu Asn Glu Ser Arg Tyr Pro Ala Glu
 420 425 430
 Ile Ala Arg Asn Leu Tyr Ala Ile Ala His Thr Glu Tyr Pro Gly Asp
 435 440 445
 Gln Met Tyr Thr Ala Gly Asp Tyr Phe Gly His Ala Asp Arg Val Asp
 450 455 460
 Cys Phe Asp Val Phe Tyr Lys Gln Val Ser Arg Phe Pro Lys Asp Gly
 465 470 475 480
 Asp Val Met Ser Asn Tyr Pro Glu Asp Gln Ile Ala Val Lys Pro Leu
 485 490 495
 Phe Cys Arg Glu Trp Gly Asp Gly Val Gly Glu Lys Pro Arg Val Ser
 500 505 510
 Leu Met Glu Asn Glu Glu Glu Gln Leu Lys Gln Cys Arg Gly Arg Phe
 515 520 525
 Leu Gln Leu Asn Gly His Gly Tyr Phe Asp Trp Cys Met Leu Asp Ala
 530 535 540
 Asn Pro Arg Met Gly Gly His Phe Leu Trp Ser Tyr Asn Asp Tyr Ala
 545 550 555 560
 Arg Gly Ala Asp His Glu Thr Met Phe Cys Gly Ile Val Asp Ile Asn
 565 570 575
 Arg Ile Pro Arg Cys Arg Tyr Tyr Met Met Gln Ser Ile Phe Arg Gln
 580 585 590
 Glu Ile Ser Leu Pro Ala Asn Ile
 595 600

<210> 9992

<211> 374

<212> PRT

<213> B.fragilis

<400> 9992

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Asn Val Gly Ser Gly Ser Arg Ser Leu Glu Ser Val Val Ser Arg Met
1          5          10          15
Gly Ile Asp Ile Phe Asp Asn Phe Tyr Arg Gly Lys Arg Val Leu Val
20        25        30
Thr Gly His Thr Gly Phe Lys Gly Ser Trp Leu Ser Ile Trp Leu His
35        40        45
Glu Leu Gly Ala Glu Val Ile Gly Val Ala Gln Asp Pro Phe Thr Ala
50        55        60
Arg Asp Asn Phe Val Leu Ser Gly Ile Gly Glu Lys Ile Lys Ala Asp
65        70        75        80
Leu Arg Ala Asp Ile Arg Asp Gly Glu Arg Ile Lys Ala Ile Phe Gln
85        90        95
Glu Tyr Gln Pro Glu Ile Val Phe His Leu Ala Ala Gln Pro Leu Val
100       105       110
Arg Leu Ser Tyr Asp Ile Pro Val Glu Thr Tyr Glu Thr Asn Val Met
115       120       125
Gly Thr Ile His Val Leu Glu Ala Val Arg Ser Thr Asp Ser Val Lys
130       135       140
Val Gly Val Met Ile Thr Thr Asp Lys Cys Tyr Glu Asn Lys Glu Gln
145       150       155       160
Ile Trp Gly Tyr Arg Glu Asn Glu Pro Met Gly Gly Tyr Asp Pro Tyr
165       170       175
Ser Ser Ser Lys Gly Ala Ala Glu Ile Ala Ile Ala Ser Trp Arg Arg
180       185       190
Ser Phe Phe His Pro Glu Gln Tyr Asp Lys His Gly Lys Ser Ile Ala
195       200       205
Ser Val Arg Ala Gly Asn Val Ile Gly Gly Gly Asp Trp Ala Leu Asp
210       215       220
Arg Ile Ile Pro Asp Cys Ile Lys Ala Leu Glu Ser Gly Arg Thr Ile
225       230       235       240
Asp Ile Arg Ser Pro Lys Ala Val Arg Pro Trp Gln His Val Leu Glu
245       250       255
Pro Leu Ser Gly Tyr Met Leu Leu Ala Gln Lys Met Trp Ser Asp Pro
260       265       270
Thr Arg Tyr Cys Glu Gly Trp Asn Phe Gly Pro Arg Ala Glu Ser Ile
275       280       285
Ser Thr Val Trp Asp Val Ala Thr Lys Val Val Asn Asn Tyr Gly Ser
290       295       300
Gly Glu Leu Arg Asp Leu Ser Asp Pro His Ala Leu His Glu Ala Lys
305       310       315       320
Leu Leu Met Leu Asp Ile Ser Lys Ala Lys Phe Arg Leu Gly Trp Glu
325       330       335
Pro Lys Met Asn Ile Glu Gln Thr Val Glu Leu Thr Val Asp Trp Tyr
340       345       350
Lys Arg Tyr Arg Glu Glu Glu Val Tyr Asp Val Cys Val Glu Gln Ile
355       360       365
Val Asn Phe Ile Gln Lys
370

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<210> 9993

<211> 298

<212> PRT

<213> B.fragilis

<400> 9993

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Leu Phe Lys Thr Ile Thr Met Lys Tyr Leu Ile Thr Gly Gly Cys Gly
1          5          10          15

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Phe Ile Gly Ser Asn Leu Ala Ala Glu Val Leu Lys Arg Gly Glu Glu
 20 25 30
 Leu Phe Val Leu Asp Asn Leu Phe Arg Tyr Gly Ser Gly Ser Asn Leu
 35 40 45
 Glu Trp Leu Arg Thr Lys Gly Asp Phe Thr Tyr Tyr Pro Tyr Asp Thr
 50 55 60
 Arg Asn Thr Asn Asp Val Glu Thr Val Ile Lys Glu Val Gln Pro Asp
 65 70 75 80
 Tyr Ile Phe His Leu Ala Gly Gln Val Ala Met Thr Thr Ser Ile Ser
 85 90 95
 Asn Pro Arg Leu Asp Tyr Glu Thr Asn Ala Leu Gly Thr Phe Asn Leu
 100 105 110
 Leu Asp Ala Val Arg Lys Tyr Ser Pro Asp Ser Val Ile Leu Tyr Ser
 115 120 125
 Ser Thr Asn Lys Val Tyr Gly Asp Phe Glu Tyr Leu His Phe Arg Glu
 130 135 140
 Glu Ser Thr Arg Tyr Val Cys Glu Glu Tyr Pro Asn Gly Phe Pro Glu
 145 150 155 160
 Ser Ile Ser Leu Asp Phe His Ser Pro Tyr Gly Cys Ser Lys Gly Cys
 165 170 175
 Ala Asp Gln Tyr Leu Leu Asp Phe His Arg Ile Tyr Gly Leu Lys Thr
 180 185 190
 Ile Val Phe Arg His Ser Ser Met Tyr Gly Ser Asn Gln His Ala Thr
 195 200 205
 Tyr Asp Gln Gly Trp Ile Gly Trp Phe Cys Gln Lys Ala Leu Glu Ile
 210 215 220
 Lys Asn His Thr Leu Gln Lys Pro Phe Thr Ile Ser Gly Thr Gly Lys
 225 230 235 240
 Gln Val Arg Asp Val Leu His Gly Glu Asp Val Val Asn Leu Tyr Phe
 245 250 255
 Thr Ala Lys Asp Ile Asp Lys Ala Tyr Gly Glu Val Phe Asn Ile Gly
 260 265 270
 Gly Gly Ile Glu Asn Ser Leu Ser Leu Ser Ser Pro Arg Gly Cys Asn
 275 280 285
 Glu Arg Cys His Trp Gly Met Gly Gly Arg
 290 295

<210> 9994

<211> 306

<212> PRT

<213> B.fragilis

<400> 9994

Leu Ile Leu Tyr Arg Asn Lys Met Glu Thr Val Phe Leu Ile Gly Gly
 1 5 10 15
 Ser Gly Phe Ile Gly Lys Asn Leu Ala Gln Tyr Leu Ser Gln Lys Tyr
 20 25 30
 His Val His Val Phe Asp Lys Tyr Ile Asp Gln Pro Phe Phe Thr Ser
 35 40 45
 Tyr Pro Ser Ile Glu Thr Thr Glu Leu Asp Leu Val Ser Gln Arg Ile
 50 55 60
 Pro Gln Asp Met Pro Ser Pro Asp Tyr Ile Ile Asn Leu Ala Ser Val
 65 70 75 80
 Val Thr Ala Glu Arg Asn Met Ser Leu Phe Asp Glu Leu Ile Ser Ser
 85 90 95
 Asn Leu Lys Ile Leu Leu Asn Leu Tyr Glu Arg Phe Lys Glu Glu Ser
 100 105 110
 Ser Leu Lys Leu Phe Ile Gln Phe Gly Ser Ser Glu Glu Tyr Gly Ser
 115 120 125

Glu Gln Ser Pro Phe Arg Glu Glu Asp Arg Glu Cys Pro Asn Ser Pro
 130 135 140
 Tyr Ala Leu Val Lys Gln Leu Thr Thr Asn Thr Ser Met Met Leu Tyr
 145 150 155 160
 Arg Asn Tyr Gly Phe Pro Ile Met Val Val Arg Pro Gly Asn Leu Phe
 165 170 175
 Gly Pro Leu Gln Asn Lys Asp Lys Phe Ile Pro Tyr Val Val Gly Gln
 180 185 190
 Leu Arg Ser Gly Leu Pro Leu Asn Val Ser Pro Cys Glu Gln Lys Arg
 195 200 205
 Asp Phe Ile Tyr Val Asp Asp Phe Ser Cys Ala Ile Glu Ser Leu Leu
 210 215 220
 Gln Asn Tyr Phe Lys Cys Leu Gly Glu Ile Val Asn Val Ser Ser Gly
 225 230 235 240
 Glu Ser Ile Ser Leu Lys Gln Ile Ile Glu His Cys Lys Ala Ser Leu
 245 250 255
 His Ser Ser Ser Asp Val Asn Tyr Gly Ala Leu Pro Tyr Arg Glu Asn
 260 265 270
 Glu Ala Met Asp Leu Lys Cys Ser Ile Ala Lys Leu Ser Ser Ile Thr
 275 280 285
 Gly Cys Asn Ile His Phe Asp Asn Glu Lys Arg Leu Thr Asp Tyr Leu
 290 295 300
 Lys Gln
 305

<210> 9995
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 9995
 Glu Thr Lys Tyr Ser Phe Gly Arg Gly Ala Thr Val Thr Ser Phe His
 1 5 10 15
 Ile Ala Ser Gly Arg Gly Gln Lys Lys Thr Tyr Leu Trp Gly Arg Phe
 20 25 30
 Arg Pro Gln Asp Ile Thr Phe Asp Pro Ile Arg Gly Asp Gln Gln Leu
 35 40 45
 Ala Tyr Pro Pro Ile Arg Phe Ile Gly Thr Arg Thr Ser Asp Thr Thr
 50 55 60
 Pro Ala Asp Lys Lys Ala His His Thr Arg Arg Val Asn Ala Thr Ile
 65 70 75 80
 Glu Leu Leu Asp Arg Ala
 85

<210> 9996
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 9996
 Val Ser Arg Lys Arg Ser Phe Pro Arg Tyr Phe Cys Thr Arg Arg Ile
 1 5 10 15
 Arg Pro Pro Val Trp Val Phe Ser Pro Val Ser Thr Ile Glu Thr Phe
 20 25 30
 Gln His Ser Glu Trp Leu Phe Thr Met Val Val Val Leu Leu Glu Arg
 35 40 45
 His Thr Ala Ile Ser Val Leu Leu Arg Lys Lys Val Gly Glu Thr Leu
 50 55 60
 Leu Asp Glu Lys Trp Gly Leu Ala Ala Thr Phe Ser Lys Arg Gly Gly

65
Trp

70

75

80

<210> 9997

<211> 69

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (19)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 9997

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Pro Thr Phe Phe Phe Gly Ala Gly Trp Ile Thr Glu Glu Arg Arg Gly
1          5          10          15
Val Gly Xaa Thr Ala Asp Val Ile Asn Asn Arg Ser Leu Ile Phe Phe
          20          25          30
Pro Ile Asp Gly Met Leu Tyr Trp Ile Ser Gly Ile Cys Leu Pro Ser
          35          40          45
Pro Ser Lys Arg Glu Ile Gly Gly Phe Val Ala Lys Leu Asp Gln Val
          50          55          60
Thr Arg Leu Leu His
65

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<210> 9998

<211> 285

<212> PRT

<213> B.fragilis

<400> 9998

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Phe Phe Gly Glu Gly Ser Pro Pro Pro Lys Arg Ser Pro Lys Ile Ile
1          5          10          15
Asp Cys Pro Glu Lys Arg Asn Lys Gly Lys Lys Ala Pro Pro Arg Val
          20          25          30
Thr Ser Thr Arg Pro Pro Pro Gln Asn Met Trp Trp Trp Val Ile Lys
          35          40          45
Thr Thr Lys Lys Phe Ser Phe Gly Glu Asn Thr Phe Ser Cys Ser His
          50          55          60
Phe Phe Lys Lys Ala Ile His His Pro Pro Leu Leu Glu Asn Val Ala
65          70          75          80
Ala Arg Pro His Phe Ser Ser Arg Ser Val Ser Pro Thr Phe Phe Arg
          85          90          95
Asn Asn Thr Glu Met Ala Val Cys Leu Ser Ser Asn Thr Thr Thr Ile
          100          105          110
Val Asn Asn His Ser Glu Cys Trp Lys Val Ser Met Val Asp Thr Gly
          115          120          125
Leu Asn Thr Gln Thr Gly Gly Arg Ile Arg Arg Val Gln Lys Tyr Leu
          130          135          140
Gly Asn Glu Arg Phe Leu Leu Thr Tyr Gly Asp Gly Val Thr Asp Leu
145          150          155          160
Asn Ile Gly Asp Thr Leu Lys Ala His Glu Ser Ser Asp Cys Leu Leu
          165          170          175
Ser Leu Thr Ala Tyr Lys Pro Gly Gly Lys Phe Gly Ala Leu Gln Leu
          180          185          190
Asp Leu Asp Thr Asp Lys Val Leu Ser Phe Gln Glu Lys Pro Asp Gly
          195          200          205
Asp Arg Asn Trp Ile Asn Ala Gly Tyr Phe Val Cys Glu Pro Glu Val

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210		215		220
Phe Asp Tyr Ile Pro Glu Gly Asp Ser Thr Ile Phe Glu Arg Gln Pro				
225		230		240
Leu Glu Ser Ile Ala Lys Ala Gly Arg Met His Ala Phe Arg His Thr				
	245		250	255
Gly Phe Trp Lys Pro Met Asp Thr Leu Arg Asp Asn Thr Glu Leu Asn				
	260		265	270
Glu Met Trp Asp Gln Gly Val Ala Pro Trp Lys Val Trp				
	275		280	285

<210> 9999

<211> 845

<212> PRT

<213> B.fragilis

<400> 9999

Cys Arg Gln Pro Ile Arg Phe Arg Gln Leu Ile Arg Arg Ile Ser Asn				
1	5		10	15
Leu Leu Arg Ser Leu Lys Asp Ala Ser Ala Thr Ala Ile Tyr Gly Ser				
	20		25	30
Arg Gly Ala Asn Gly Val Val Leu Ile Thr Thr Lys Arg Gly Ala Lys				
	35		40	45
Gly Lys Asp Asn Ile Ser Phe Ser Ala Asn Phe Gly Ile Ser Lys Val				
	50		55	60
Val Lys Lys Leu Asp Met Leu Asp Gly Tyr Ala Tyr Ala Met Tyr Arg				
	65		70	75
Asn Glu Ala Ala Gln Met Phe Asn Glu Tyr Glu Asn Ala Asn Glu Ala				
	85		90	95
Ile Pro Tyr Pro Gly Thr Ser Lys Val Asp Pro Ser Thr Gly Glu Ser				
	100		105	110
Val Tyr Ser Pro Gly Pro Glu Asp Tyr Arg Asn Gly Thr Tyr Pro Ser				
	115		120	125
Val Asn Trp Gln Asp Glu Val Phe Glu Thr Ala Phe Ser Gln Glu Tyr				
	130		135	140
Asn Leu Ser Val Asn Gly Ser Asn Asp Lys Gly Tyr Tyr Ala Ile Ser				
	145		150	155
Gly Asn Ile Leu Asp Gln Ser Gly Ile Ile His Asn Ser Gly Tyr Lys				
	165		170	175
Arg Tyr Ser Phe Arg Ala Asn Leu Ala Arg Lys Val His Glu Trp Ile				
	180		185	190
Glu Ile Gly Thr Asn Met Ser Phe Thr Asn Ser Leu Asn Lys Leu Ala				
	195		200	205
Lys Thr Asn Ser Val Ser Asp Gly Ile Ile Arg Gly Ala Leu Phe Tyr				
	210		215	220
Pro Ala Thr Ala Pro Leu Asp Asp Glu Thr Asn Asn Ala Gln Leu Asn				
	225		230	235
Trp Phe Ser Ser Asn Pro Tyr Val Tyr Thr Arg Ala Ala Lys Asp Glu				
	245		250	255
Leu Thr Thr Asn Ser Phe Phe Ser Ser Ser Phe Val Glu Ile Thr Pro				
	260		265	270
Tyr Lys Asp Leu Lys Val Arg Gln Asn Val Gly Phe Ser Tyr Asn Ile				
	275		280	285
Asn Glu Arg Asp Val Tyr Tyr Asn Arg Glu Thr Val Glu Gly Lys Asp				
	290		295	300
Pro Thr Asn Gly Tyr Ala Ser Lys Ala Asp Asn Trp Ser Lys Asn Leu				
	305		310	315
Val Leu Glu Thr Met Ala Thr Tyr Asn Lys Thr Phe Asn Arg Asn His				
	325		330	335
Ser Leu Asn Val Val Ala Ala Phe Ser Tyr Glu Arg Gly Asp Tyr Gly				

Phe Gly Ser Asp Ala Ser Arg Arg Gly Val Asp Leu Phe Ser Tyr Pro
 820 825 830
 Ser Ser Arg Thr Phe Ser Phe Gly Leu Gln Cys Thr Phe
 835 840 845

<210> 10000
 <211> 264
 <212> PRT
 <213> B.fragilis

<400> 10000
 Met Thr Pro Ile Ala Pro Leu Pro Met Ile Pro Trp Asn Met Gln Asn
 1 5 10 15
 Met Met Met Leu Leu Met Ala Leu Leu Met Ser Gly His Met Met Ala
 20 25 30
 Gln Gln Thr Ile Val Thr Gly Val Ile Thr Asp Ala Asn Asp Gly Ser
 35 40 45
 Ser Leu Ile Gly Ala Asn Val Leu Val Lys Gly Ala Gly Thr Gly Ser
 50 55 60
 Ile Ala Asn Val Asp Gly Lys Tyr Ser Val Asn Val Pro Asn Gly Lys
 65 70 75 80
 Asn Val Leu Val Phe Ser Cys Val Gly Tyr Lys Glu His Glu Ile Thr
 85 90 95
 Leu Lys Pro Gly Gln Lys Val Leu Asn Val Ile Met Lys Glu Asp Thr
 100 105 110
 Glu Leu Leu Asp Glu Val Val Val Ile Gly Tyr Gly Ser Met Lys Lys
 115 120 125
 Ser Asp Leu Thr Gly Ser Val Thr Ser Ile Lys Ser Glu Asp Leu Met
 130 135 140
 Lys Thr Asn Pro Ile Ser Ile Asn Gln Gly Leu Gln Gly Arg Ile Ala
 145 150 155 160
 Gly Val Gln Val Asn Gln Asn Asp Gly Ala Pro Gly Ala Gly Val Ser
 165 170 175
 Ile Gln Ile Arg Gly Ala Asn Ser Phe Ser Thr Ser Thr Glu Pro Leu
 180 185 190
 Tyr Ile Val Asp Gly Ile Pro Phe Thr Ser Ser Gly Met Pro Gly Thr
 195 200 205
 Gly Lys Asp Gly Met Met Gln Thr Ala Asn Pro Leu Ser Thr Ile Asn
 210 215 220
 Pro Ser Asp Ile Glu Ser Ile Glu Ile Phe Glu Arg Cys Leu Cys His
 225 230 235 240
 Ser His Leu Trp Ile Ala Trp Arg Lys Trp Cys Gly Ile Asp Tyr Tyr
 245 250 255
 Gln Thr Trp Cys Lys Arg Lys Arg
 260

<210> 10001
 <211> 419
 <212> PRT
 <213> B.fragilis

<400> 10001
 Gln Lys Ser Ser Thr Ser Pro Cys Ala Leu Lys Gly Glu Ser Leu Leu
 1 5 10 15
 Ala Gln Gln Ile Ala Leu Glu Ile Ser Lys Leu Leu Arg His Arg Gln
 20 25 30
 Thr Phe Leu Phe Ala Phe His Lys Ser Pro Glu Leu Ser Arg Tyr Phe
 35 40 45
 Asp Leu Gly Thr Asn Asp Ala Leu His Arg Leu Gln Glu Phe Gly Arg

50 55 60
 Met Gly Arg Phe Glu Glu Tyr Ala Cys Leu Thr Arg Leu Gln Ala Phe
 65 70 75 80
 Leu Gln Cys Thr Val Thr Ala Cys Ser Met Arg Ile Glu Gln Ile Thr
 85 90 95
 Arg Leu Leu Pro Ala Arg Phe His Ala Phe Thr Asn Leu Leu Val Gly
 100 105 110
 Val Arg Arg Ser Gly Tyr Leu Gly Ser Asp Gly Cys Met Arg Thr Ala
 115 120 125
 Ile Gln Val Glu His Thr Gly Lys Val Ala Arg Ile Thr His Ile His
 130 135 140
 Arg Ile Gly Asn Gly Gly Asn Gly Arg Thr Gly Ile Val Leu Ser Cys
 145 150 155 160
 Leu Gln Ile Leu Ile Glu Asn Ile Ile Leu Ile Val Gly Gly Asp Lys
 165 170 175
 Thr Ala Asp Gly Gln Ala His Leu Phe Ala Glu Gln Ala Cys Ser Asn
 180 185 190
 Val Thr Lys Val Ser Ala Arg His Thr Asp Asp Asp Ile Leu Cys Pro
 195 200 205
 Ala Gly Leu Leu Gln Leu Arg Ile Gly Ile Lys Ile Ile Glu Cys Leu
 210 215 220
 Arg Gln Glu Thr Cys His Val Asp Arg Val Ser Arg Gly Gln Gln Gln
 225 230 235 240
 Leu Phe Val Gln Phe Leu Ile His Lys Gly Cys Phe His Gln Arg Leu
 245 250 255
 Ala Val Ile Lys Arg Ser Val His Leu Gln Gly Cys Asn Ile Pro Pro
 260 265 270
 Gln Arg Ser Glu Leu Phe Phe Leu Tyr Leu Ala Asp Phe Ser Leu Arg
 275 280 285
 Ile Glu His Ile His Met Asn Thr Leu Tyr Pro Gln Lys Ala Ile Gly
 290 295 300
 Tyr Arg Thr Thr Gly Ile Ser Gly Ser Gly Asn Glu His Ile His Leu
 305 310 315 320
 Phe Pro Pro Leu Phe Pro Asp Glu Val Ser Gln Gln Thr Gly His Lys
 325 330 335
 Pro Ser Thr Tyr Ile Phe Lys Ser Gln Cys Arg Thr Val Glu Lys Leu
 340 345 350
 Gln Gly Ile Asp Val Leu Leu His Arg His Gln Arg Asp Ile Lys Ile
 355 360 365
 Gln Arg Ile Ile Asn Asp Leu Phe Gln Arg Phe Arg Arg Asn Ile Phe
 370 375 380
 Ser Lys Glu Ser Ile Cys His Pro Val Ser Asp Phe Pro Glu Arg Lys
 385 390 395 400
 Ile Leu Tyr Leu Val Ile Lys Leu Leu Arg Gln Gly Leu Asp Gly His
 405 410 415
 Gly His Glu

<210> 10002
 <211> 270
 <212> PRT
 <213> B.fragilis

<400> 10002
 Val Ala Thr Pro Pro Thr Val Thr Ser Ser Ser Asn Ser Ser Arg Phe
 1 5 10 15
 Thr Pro Ile Thr Ser Ile Asp Ile Trp Gln Ala Ile Asn Ser Thr Pro
 20 25 30
 Phe Ser Arg Ala Cys Cys Arg Arg Asp Ser Ser Glu Ser Met Pro Phe

35 40 45
 Arg Cys Met Met Tyr Arg Ile Ile Phe Pro Pro Ile Pro Pro Met Leu
 50 55 60
 Ile Leu Glu Ser Phe Ser Phe Ser Glu Leu Asp Gly Ser Ile Val Pro
 65 70 75 80
 Asn Ile Leu Pro Lys Met Ser Phe Ser Thr Leu Gly Leu Cys Asn Phe
 85 90 95
 Leu Ile Thr Phe Ser Pro Gln Lys Val Lys Lys Ile Val Thr Phe Cys
 100 105 110
 Pro Val Ala Ala Ala Pro Leu Ala Arg Thr Lys Val Ala Ser Ala Leu
 115 120 125
 Ser Lys Ser Ser Leu Asn Ile Ile Arg Val Leu Pro Leu Leu Ser His
 130 135 140
 Val Val Val Arg Leu Gln Ala Trp Gly Ser Pro Phe Ser Met Thr Thr
 145 150 155 160
 Thr Asp Phe Pro Pro Val Leu Ser Leu Glu Ile Asn Leu Phe Pro Val
 165 170 175
 Glu Leu His His Ala Ala Ala Ser Arg Glu Asn Pro Gly Ser Val Ala
 180 185 190
 Thr Ile Ser Thr Leu Ser Pro Gly Thr Ser Val Ser Ile Val Phe Phe
 195 200 205
 Ile Phe Arg Thr Gly Pro Gly His Cys Asn Pro Gln Ala Ser Thr Arg
 210 215 220
 Ile Val Leu Gly Phe Ala Ala Val Val Val Trp Gly Ala Ser Ala Val
 225 230 235 240
 Thr Glu Gly Phe Ala Gly Leu Ser Cys Ala Glu Gly Val Ser Ser Val
 245 250 255
 Ser Ser Phe Ser Cys Lys Met Met Gly Ala Val Ala Ala Arg
 260 265 270

<210> 10003

<211> 321

<212> PRT

<213> B.fragilis

<400> 10003

Lys Asn Asn Pro Arg Met Met Lys Asn Lys Lys Val Glu Ala Asn Leu
 1 5 10 15
 Ser Met Val Val Ser Lys Thr Phe Ser Gly Leu Asn Met Asn Ala Leu
 20 25 30
 Lys Tyr Leu Leu Pro Val Trp Val Ser Pro Leu Ser Gly Val Thr Leu
 35 40 45
 Arg Cys Val Phe Ala Ala Ile Ala Phe Trp Ile Ile Gly Met Phe Val
 50 55 60
 Lys Pro Glu Ile Ser Thr Arg Lys Glu Lys Ile Phe Leu Phe Leu Leu
 65 70 75 80
 Gly Ala Leu Gly Ile Tyr Gly Phe Met Phe Leu Tyr Leu Met Gly Leu
 85 90 95
 Ser Lys Thr Thr Pro Val Ser Ser Ser Ile Phe Thr Ser Leu Gln Pro
 100 105 110
 Ile Trp Val Phe Val Ile Ala Val Val Phe Phe Lys Glu Lys Ile Ser
 115 120 125
 Ala Met Lys Ile Ala Gly Ile Ser Leu Gly Leu Gly Gly Ala Ile Leu
 130 135 140
 Cys Ile Leu Ala Gln Lys Ser Asp Asp Leu Ala Ser Asp Ala Leu Thr
 145 150 155 160
 Gly Asn Met Leu Cys Leu Leu Ser Ser Ile Ala Tyr Ala Val Tyr Leu
 165 170 175
 Val Ala Ser Asn Arg Ile Leu Lys Ser Val Gly Met Phe Thr Val Leu

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      180              185              190
Lys Tyr Thr Phe Ala Gly Ala Ala Phe Ser Ser Ile Val Val Ser Ala
      195              200              205
Val Thr Gly Phe His Ala Pro Val Phe Ser Gly Pro Leu His Trp Phe
      210              215              220
Pro Leu Ser Val Leu Leu Phe Val Leu Ile Phe Pro Thr Val Val Ser
225              230              235              240
Tyr Leu Leu Val Pro Ile Gly Leu Lys Tyr Leu Lys Thr Thr Val Val
      245              250              255
Ala Ile Tyr Gly Tyr Leu Ile Leu Ile Val Ala Thr Ile Val Ser Leu
      260              265              270
Leu Val Gly Gln Asp Arg Phe Ser Trp Ser Gln Thr Ile Ala Ile Gly
      275              280              285
Met Ile Cys Val Ser Val Tyr Leu Val Glu Val Ala Glu Thr Lys Glu
      290              295              300
Lys Pro Val Ser Asn Ser Asp Lys Pro Ser Ser Leu Pro Pro His Gly
305              310              315              320
Ser

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<210> 10004

<211> 312

<212> PRT

<213> B.fragilis

<400> 10004

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Leu Leu Asn Thr Tyr Ala Ile Met Pro Leu Asn Leu Pro Asp Lys Leu
1              5              10              15
Pro Ala Ile Glu Leu Leu Lys Glu Glu Asn Ile Phe Val Ile Asp Asn
      20              25              30
Ser Arg Ala Thr Gln Gln Asp Ile Arg Pro Leu Arg Ile Val Ile Leu
      35              40              45
Asn Leu Met Pro Leu Lys Ile Thr Thr Glu Thr Asp Leu Val Arg Leu
      50              55              60
Leu Ser Asn Thr Pro Leu Gln Val Glu Ile Ser Phe Met Lys Ile Lys
65              70              75              80
Ser His Thr Ser Lys Asn Thr Pro Ile Glu His Met Lys Thr Phe Tyr
      85              90              95
Thr Asp Phe Asp Lys Met Arg Glu Asp Arg Tyr Asp Gly Met Ile Ile
      100              105              110
Thr Gly Ala Pro Val Glu Gln Met Asp Phe Glu Glu Val Asn Tyr Trp
      115              120              125
Asp Glu Ile Thr Glu Ile Phe Asp Trp Ala Arg Thr His Val Thr Ser
      130              135              140
Thr Leu Tyr Ile Cys Trp Ala Ala Gln Ala Gly Leu Tyr His His Tyr
145              150              155              160
Gly Ile Pro Lys Tyr Ala Leu Asp Lys Lys Met Phe Gly Ile Phe Lys
      165              170              175
His Arg Thr Leu Leu Pro Leu His Pro Ile Phe Arg Gly Phe Asp Asp
      180              185              190
Glu Phe Tyr Val Pro His Ser Arg His Thr Glu Val Arg Lys Glu Asp
      195              200              205
Ile Leu Lys Val Pro Glu Leu Thr Leu Leu Ser Glu Ser Asp Asp Ser
      210              215              220
Gly Val Tyr Met Val Val Ala Arg Gly Gly Arg Glu Phe Phe Val Thr
225              230              235              240
Gly His Ser Glu Tyr Ser Pro Leu Thr Leu Asp Thr Glu Tyr Arg Arg
      245              250              255
Asp Val Ser Lys Gly Leu Pro Ile Glu Ile Pro Arg Asn Tyr Tyr Val

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260 265 270
 Asn Asp Asp Pro Asp Lys Gly Pro Leu Val Arg Trp Arg Gly His Ala
 275 280 285
 Asn Leu Leu Phe Ser Asn Trp Leu Asn Tyr Phe Val Tyr Gln Glu Thr
 290 295 300
 Pro Tyr Asn Ile Glu Asp Ile Arg
 305 310

<210> 10005
 <211> 111
 <212> PRT
 <213> B.fragilis

<400> 10005
 Ser Leu Asn Thr Asn Pro Ile Pro Cys Cys Ala Phe Ile Glu Asp Ser
 1 5 10 15
 Ile Phe Ser Thr Phe Ser Leu Leu Lys Ser Lys Glu Thr Phe Cys Asp
 20 25 30
 His Ala Glu Thr Val Lys Pro Asn Lys Arg Thr Pro Lys Ser Asn Ser
 35 40 45
 Ile Phe Val Leu Val Leu Val Phe Ile Ser Tyr Ser Ile Lys Leu Ile
 50 55 60
 Ile Phe Ile Val Tyr Lys Lys Ala Phe Leu Tyr Lys Leu Thr His His
 65 70 75 80
 Arg Lys Glu Gly Met Ser Ala Ile Phe Ile Phe Leu Gln Lys Lys Met
 85 90 95
 Gln Gly Asn Asp Arg Ser Cys Pro Tyr Val Val Val His Ala Phe
 100 105 110

<210> 10006
 <211> 147
 <212> PRT
 <213> B.fragilis

<400> 10006
 Pro Asp Trp Leu Pro Thr Trp Gly Gly Ala Gly Gln Gly Ala Arg Lys
 1 5 10 15
 Tyr Phe Asn Phe Lys Ser His Glu Thr Ala His His Phe Glu Ala Gly
 20 25 30
 Val Ala Tyr Thr Val Gln Ser Glu Thr Phe Pro Leu Ser Val Ala Trp
 35 40 45
 Tyr Thr Met Phe Ala Gly Gln Asp Lys Asn Ala Glu Gly Gly Gln Asn
 50 55 60
 Tyr Ser Ser Tyr Val Glu Phe Asn Tyr Pro Phe Arg Val Arg Met Val
 65 70 75 80
 Asp Leu Asn Val Thr Cys Gly Met Val Pro Tyr Ala Ala Pro Gln Tyr
 85 90 95
 Asn Cys Asp Gly Phe Ala Val Thr Asn Val Ala Leu Lys Gly Thr Thr
 100 105 110
 Gln Ile Arg Phe Thr Asp Lys Phe Ala Leu Pro Val Phe Ala Gln Ala
 115 120 125
 Val Trp Asn Pro Arg Met Glu Asp Ala His Leu Val Phe Gly Ile Thr
 130 135 140
 Leu Lys Pro
 145

<210> 10007
 <211> 86
 <212> PRT

<213> B.fragilis

<400> 10007

Asn Leu Lys Thr Ile Thr Val Met Glu Lys Tyr Leu Ile His Ser Asn
 1 5 10 15
 Glu Leu His Leu Ile Asp Gln Glu Arg Ile His Gln Ala Val Glu Gln
 20 25 30
 Met Val Glu Ser Leu Asp Met Ala Ala Gly Ser Thr Phe Ser Phe Asp
 35 40 45
 Leu Tyr Lys Val Val Glu Thr Tyr Phe Lys Asp Leu Asp Lys Arg Arg
 50 55 60
 Glu Ile Asn His Leu Leu Gly Ile Thr Asp Asn Thr Tyr Asp Pro Thr
 65 70 75 80
 Glu Asp Phe Gly Val Cys
 85

<210> 10008

<211> 642

<212> PRT

<213> B.fragilis

<400> 10008

Leu His Glu Thr Ile Lys Met Leu Arg Ile Lys Arg Leu Asp Ile Phe
 1 5 10 15
 Ile Ile Lys Ser Phe Leu Leu Leu Phe Val Gly Thr Phe Phe Ile Cys
 20 25 30
 Leu Phe Ile Phe Met Met Gln Phe Leu Trp Lys Tyr Val Asp Glu Leu
 35 40 45
 Val Gly Lys Gly Leu Glu Met Ser Val Leu Ala Gln Phe Phe Phe Tyr
 50 55 60
 Ser Ala Leu Ser Leu Val Pro Met Ser Leu Pro Leu Ala Val Leu Leu
 65 70 75 80
 Ala Ser Leu Ile Thr Phe Gly Asn Phe Gly Glu Arg Phe Glu Leu Leu
 85 90 95
 Ala Met Lys Ala Ala Gly Ile Ser Leu Leu Lys Ile Met Arg Pro Leu
 100 105 110
 Ile Val Leu Val Phe Ala Ile Cys Cys Val Ser Phe Tyr Phe Gln Asn
 115 120 125
 Val Ile Gly Pro Gln Ala Gln Ala Lys Leu Gly Thr Leu Leu Ile Ser
 130 135 140
 Met Lys Gln Lys Ser Pro Glu Val Asp Ile Pro Glu Gly Val Phe Tyr
 145 150 155 160
 Asp Glu Ile Asp Gly Tyr Asn Leu Lys Val Gln Arg Lys Asp Arg Lys
 165 170 175
 Thr Gly Met Leu Tyr Asp Val Ile Ile Tyr Asp Phe Ser Asn Asn Phe
 180 185 190
 Asp Asn Ala Arg Ile Ile Val Ala Asp Ser Gly Arg Leu Glu Met Thr
 195 200 205
 Ala Asp Lys Gln His Leu Tyr Leu His Leu Tyr Ser Gly Glu Met Phe
 210 215 220
 Glu Asn Leu Lys Ala Gln Ser Met Ser Ser Lys Asn Val Pro Tyr Arg
 225 230 235 240
 Arg Glu Ser Phe Arg Glu Lys His Ser Ile Ile Gln Phe Asp Ser Asp
 245 250 255
 Phe Asn Met Ala Asp Ala Ser Ile Met Ser Asn Gln Ser Thr Thr Lys
 260 265 270
 Asp Met Ile Lys Ile Gln Ala Ser Ile Asp Ser Met Thr Val Leu Ala
 275 280 285
 Asp Ser Ile Gly Arg Gln Tyr Phe Val Glu Ala Ser Lys Gly Pro Tyr

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      290                      295                      300
Arg Thr Ala Val Gly Leu Thr Lys Glu Asp Thr Leu Lys Met Gln Glu
305                      310                      315                      320
Ala Gln Ile Arg Asp Tyr Asn Val Asp Ser Leu Phe Glu Ala Ala Thr
      325                      330                      335
Leu Met Asn Lys Gln Lys Ile Ile Ala Ser Ala Val Gly Arg Thr Glu
      340                      345                      350
Asn Leu Ser Ser Asp Trp Gly Phe Lys Ser Phe Thr Met Thr Gln Asn
      355                      360                      365
Asp Phe Ser Ile Arg Lys His Lys Ile Glu Trp His Arg Lys Ile Thr
      370                      375                      380
Ile Ser Leu Ser Cys Leu Leu Phe Phe Phe Ile Gly Ala Pro Leu Gly
385                      390                      395                      400
Gly Ile Ile Arg Lys Gly Gly Leu Gly Met Pro Val Ile Val Ser Val
      405                      410                      415
Leu Thr Phe Ile Ile Tyr Tyr Ile Ile Asp Asn Thr Gly Tyr Lys Met
      420                      425                      430
Ala Arg Asp Gly Lys Trp Ile Val Trp Met Gly Met Trp Met Ser Ser
      435                      440                      445
Ala Ile Leu Ala Pro Leu Gly Tyr Phe Leu Thr Tyr Lys Ser Asn Lys
      450                      455                      460
Asp Ser Val Val Leu Asn Thr Asp Val Tyr Ile Ser Trp Phe Lys Arg
465                      470                      475                      480
Val Phe Gly Val Arg Ser Val Arg His Leu Ser Lys Lys Glu Val Ile
      485                      490                      495
Ile His Asp Pro Asp Tyr Gln Arg Leu Pro Phe Asp Leu Asn Gly Leu
      500                      505                      510
Ser Glu Glu Cys Arg Ala Tyr Met Gln Lys Asn Arg Leu Ala Lys Ala
      515                      520                      525
Pro Asn Tyr Phe Ser Leu Trp Met Ser Gly Gly Gln Asp Gln Glu Ile
      530                      535                      540
Ile Ala Ile Asn Asn Arg Met Glu Ala Leu Val Asp Glu Met Ser Asn
545                      550                      555                      560
Thr Arg Ser Leu Ile Leu Leu Gln Lys Leu Glu Lys Tyr Pro Ile Ile
      565                      570                      575
Pro Val Asn Ala His Val Arg Pro Phe His Asn Tyr Trp Leu Asn Met
      580                      585                      590
Ala Ile Gly Ile Val Ile Pro Ile Gly Leu Phe Phe Tyr Phe Arg Ile
      595                      600                      605
Trp Ala Phe Arg Ile Arg Leu Asn Lys Asp Met Glu Arg Ile Ile Ala
      610                      615                      620
Leu Asn Arg Asp Val Glu Leu Thr Ile Lys Asp Ile Asn Asn Glu Asn
625                      630                      635                      640
Lys Ile

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<210> 10009

<211> 61

<212> PRT

<213> B.fragilis

<400> 10009

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Trp Phe Ser Ala Thr Thr Gln Met Ile Gly Leu Leu Lys Asn Lys Ile
1                      5                      10                      15
Pro Asn Gly Met Ser Phe Glu Leu Leu Phe Met Thr Gln Arg Pro Ile
      20                      25                      30
Ile Phe Pro Thr Pro Phe Leu Ile Ala Gln Lys Arg Phe Leu Thr Gly
      35                      40                      45
Lys Glu Ser Ser Glu Gln Ala Ser Ala Thr Phe Ser Phe

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<210> 10010

<211> 74

<212> PRT

<213> B.fragilis

<400> 10010

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Lys Leu Tyr Phe Cys Thr Tyr Lys Leu Val Leu Ile Ile Lys Ile Ser
1           5           10           15
Asn Lys Met Ala Tyr Val Ile Ser Glu Asp Cys Ile Ala Cys Gly Thr
          20           25           30
Cys Ile Asp Glu Cys Pro Val Gly Ala Ile Ser Glu Gly Asp Ile Tyr
          35           40           45
Ser Ile Asp Pro Glu Gln Cys Thr Asp Cys Gly Thr Cys Ala Asp Val
          50           55           60
Cys Pro Ser Glu Ala Ile His Pro Ala Glu
65           70

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<210> 10011

<211> 67

<212> PRT

<213> B.fragilis

<400> 10011

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Asn Ile Glu Ala Asp Ile Leu Phe Phe Ile Thr Leu Leu Ser Cys Tyr
1           5           10           15
Ser Tyr Lys Leu Lys Cys Ser Ala Ile Val Leu Asn Ala Cys Thr Gly
          20           25           30
Lys Lys Asp Lys Ala Ala Thr Met Lys Met Thr Ala Lys Val Ile Thr
          35           40           45
Ala Lys Val Thr Val Ser Val Phe Lys Val Pro Ala Leu Ser Gly Ile
          50           55           60
Asn Phe Phe
65

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<210> 10012

<211> 431

<212> PRT

<213> B.fragilis

<400> 10012

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1           5           10           15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
          20           25           30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
          35           40           45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
          50           55           60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65           70           75           80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
          85           90           95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
          100          105          110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
          115          120          125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp

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      130                      135                      140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145                      150                      155                      160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
      165                      170                      175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
      180                      185                      190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
      195                      200                      205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
      210                      215                      220
Ser Lys Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225                      230                      235                      240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
      245                      250                      255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Glu Leu Asn
      260                      265                      270
Ser Ile Leu Val Glu Lys Trp Glu Gly Lys Cys Tyr Arg Leu Val Ile
      275                      280                      285
Gln Arg Gln Arg Arg Asn Ser Gly Asp Leu Asp Leu Trp Glu Gly Glu
      290                      295                      300
Tyr Thr Tyr Arg Cys Ile Leu Thr Asn Asp Tyr Lys Ser Ser Thr Arg
305                      310                      315                      320
Asp Ile Val Glu Phe Tyr Asn Leu Arg Gly Gly Lys Glu Arg Ile Phe
      325                      330                      335
Asp Asp Met Asn Asn Gly Phe Gly Trp Ser Arg Leu Pro Lys Ser Phe
      340                      345                      350
Met Ala Glu Asn Thr Val Phe Leu Leu Leu Thr Ala Leu Ile His Asn
      355                      360                      365
Phe Tyr Lys Thr Ile Met Ser Arg Leu Asp Thr Lys Ala Phe Gly Leu
      370                      375                      380
Lys Lys Thr Ser Arg Ile Lys Ala Phe Val Phe Arg Phe Ile Ser Val
385                      390                      395                      400
Pro Ala Lys Trp Ile Met Thr Ala Arg Gln Tyr Val Leu Asn Ile Tyr
      405                      410                      415
Thr Glu Asn Arg Ala Tyr Ala Lys Pro Phe Lys Thr Glu Phe Gly
      420                      425                      430

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<210> 10013

<211> 867

<212> PRT

<213> B.fragilis

<400> 10013

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Leu Asn Tyr Tyr Ser Ile Asp Arg Cys Arg Pro Cys Ser Gly Ala Ala
1      5      10      15
Ser Ile Phe Leu Asp Lys Leu Leu Tyr Gly Asn Ser Tyr Phe Leu Ser
      20      25      30
Asp Gly Val Leu Ala Tyr Val Val Lys Gly Pro Leu Arg Ile Phe Asn
      35      40      45
Phe Lys Tyr Glu Pro Asp Ile Tyr Thr Gln Glu Ile Ser Gln Gln Ile
      50      55      60
Cys Val Tyr Met Lys Tyr Leu Phe Thr Leu Leu Met Ala Cys Leu Ser
      65      70      75      80
Leu Ser Thr Thr Tyr Gly Thr Val His His Pro Ser Ser Ser Val Ser
      85      90      95
Ser Gly Arg Trp Val Val Trp Ala Glu Lys Pro Ala Thr Ser Trp Gln
      100     105     110
Asp Ala Phe Val Thr Gly Asn Gly Arg His Gly Thr Met Val Met Gly

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Cys Pro Ser Val Ser Pro Glu Asn Ala Pro Pro Gly Thr Asp Thr Trp
 595 600 605
 Leu Ser Lys Asp Ala Thr Met Asp Val Ala Ile Ala Lys Glu Val Phe
 610 615 620
 Arg Leu Leu Leu Glu Met Gly Arg Thr Phe Arg Ala Asp Lys Lys Glu
 625 630 635 640
 Leu Ala Lys Trp Asn Asn Tyr Leu Gln Arg Leu Pro Ser Tyr Arg Ile
 645 650 655
 Asn Asp Glu Gly Ala Leu Ala Glu Trp Ile Asp Glu Ala Tyr Gln Asp
 660 665 670
 Val Tyr Asn His Arg His Leu Ser His Leu Tyr Pro Val Phe Pro Gly
 675 680 685
 Ser Gln Leu Gly Lys Ser Glu Gly Asp Pro Arg Leu Ile His Ala Ala
 690 695 700
 Arg Ile Ala Leu Asn Lys Arg Phe Ala Phe Asp Thr Gly Ser Ala His
 705 710 715 720
 Gly Leu Ile His Val Ala Leu Gln Ala Val Arg Leu Gly Asp Ile Asp
 725 730 735
 Lys Val Lys Thr Asn Leu Asp Arg Phe Ser Arg Arg His Tyr Leu Tyr
 740 745 750
 Asp Gly Leu Val Thr Ser His Asp Pro Glu His Gln Val Tyr Asn Leu
 755 760 765
 Asp Ala Val Leu Ser Ile Pro Arg Leu Leu Met Glu Met Leu Val Tyr
 770 775 780
 Thr Glu Lys Gly Lys Ile Glu Leu Leu Pro Ala Trp Pro Cys Asp Tyr
 785 790 795 800
 Ala Asp Gly Ser Ile Lys Gly Ile Lys Ile Tyr Gly Gly His Thr Leu
 805 810 815
 Asp Ile Thr Trp Lys Ala Gly Lys Leu Ile Glu Ala Val Leu Tyr Ala
 820 825 830
 Arg Gln Asn Glu Arg Tyr Glu Val Val Cys Gly Asp Val Arg Arg His
 835 840 845
 Val Gln Leu His Lys Gly Lys Thr Tyr His Phe Pro Ala Ser Phe Phe
 850 855 860
 Ala Glu Lys
 865

<210> 10014

<211> 216

<212> PRT

<213> B.fragilis

<400> 10014

Pro Lys His Tyr Lys Asp Met Lys Arg Leu Ile Pro Ile Leu Leu Ala
 1 5 10 15
 Val Phe Ala Phe Ala Ala Cys Glu Lys Asp Pro Asp Met Asp Lys Leu
 20 25 30
 Asp Asn Asp Tyr Leu Val Tyr Thr Asn Tyr Asp Lys Lys Ala Asp Phe
 35 40 45
 Lys Gln Phe Ser Thr Tyr Tyr Ile Pro Asp Ser Val Leu Val Ile Gly
 50 55 60
 Asp Lys Lys Asp Pro Glu Tyr Trp Lys Gly Glu Ala Ala Glu Ala Ile
 65 70 75 80
 Ile Asn Ala Tyr Lys Glu Asn Leu Asn Ser Lys Gly Phe Thr Tyr Thr
 85 90 95
 Asp Asn Lys Asp Ala Ala Asp Leu Gly Ile Gln Val Ser Tyr Val Gln
 100 105 110
 Ser Thr Tyr Tyr Phe Thr Asp Tyr Gly Gln Pro Glu Trp Trp Trp Asn
 115 120 125

Tyr Pro Gly Tyr Trp Asp Ala Pro Tyr Trp Gly Asn Trp Gly Gly Trp
 130 135 140
 Tyr Tyr Pro Tyr Val Val Asn Tyr Ser Ile Thr Thr Asn Ser Phe Leu
 145 150 155 160
 Thr Glu Ile Met Asn Leu Lys Ala Pro Glu Gly Glu Lys Gln Lys Leu
 165 170 175
 Pro Val Leu Trp Ser Ser Phe Leu Ser Gly Pro Ala Ser Tyr Ser Gly
 180 185 190
 Lys Val Asn Gln Thr Leu Val Val Arg Ala Ile Asn Gln Ser Phe Ala
 195 200 205
 Gln Ser Pro Tyr Leu Thr Asn Lys
 210 215

<210> 10015

<211> 389

<212> PRT

<213> B.fragilis

<400> 10015

Arg Tyr Cys Tyr Gly Leu Cys Ser Ile Lys Ile Glu Glu Lys Met Asp
 1 5 10 15
 Arg Glu Glu Ser Val Gln His Phe Leu Asp Leu Ile Lys Lys Ser Arg
 20 25 30
 Arg Gly Lys Phe Lys Val Tyr Ile Gly Met Ile Ala Gly Val Gly Lys
 35 40 45
 Ser Tyr Arg Met Leu Gln Glu Ala His Asp Leu Ile Asp Asn Gly Val
 50 55 60
 Asp Val Arg Ile Gly Tyr Ile Glu Thr His Gly Arg Ala Gly Thr Glu
 65 70 75 80
 Ala Leu Leu Lys Gly Leu Pro Val Ile Arg Arg Arg Lys Leu Phe Tyr
 85 90 95
 Lys Gly Lys Glu Leu Glu Glu Met Asp Leu Glu Ala Ile Ile Arg Ile
 100 105 110
 His Pro Glu Ile Val Ile Val Asp Glu Leu Ala His Thr Asn Val Glu
 115 120 125
 Gly Ser Leu Asn Glu Lys Arg Trp Gln Asp Val Met Thr Leu Leu Asp
 130 135 140
 Glu Gly Ile Asn Val Ile Ser Ala Val Asn Ile Gln His Ile Glu Ser
 145 150 155 160
 Val Asn Glu Glu Val Gln Asp Ile Ala Gly Ile Glu Val Lys Glu Arg
 165 170 175
 Ile Pro Asp Ser Val Leu Gln Glu Ala Asp Glu Val Val Asn Ile Asp
 180 185 190
 Leu Thr Ala Glu Glu Leu Ile Thr Arg Leu Lys Ala Gly Lys Ile Tyr
 195 200 205
 Lys Pro Glu Lys Ile Gln Thr Ala Leu Asn Asn Phe Phe Lys Thr Glu
 210 215 220
 Asn Ile Leu Gln Leu Arg Glu Leu Ala Leu Lys Glu Val Ala Leu Arg
 225 230 235 240
 Val Glu Lys Lys Val Glu Asn Glu Val Val Met Gly Ile Gly Leu Gly
 245 250 255
 Val Arg His Glu Lys Phe Met Ala Cys Ile Ser Ser Gln Glu Lys Thr
 260 265 270
 Pro Arg Arg Ile Ile Arg Lys Val Ala Arg Leu Ala Thr Arg Tyr Asn
 275 280 285
 Thr Ser Phe Val Ala Leu Tyr Val Gln Val Pro Lys Glu Ser Met Glu
 290 295 300
 Arg Ile Asp Leu Ala Ser Gln Arg His Leu Leu Asn His Phe Lys Leu
 305 310 315 320

Val Thr Glu Leu Gly Gly Glu Val Val Gln Val Gln Ser Lys Asp Ile
 325 330 335
 Leu Cys Ser Ile Val Gln Val Cys Lys Glu Lys Gln Ile Ser Thr Val
 340 345 350
 Cys Met Gly Ser Pro Gly Leu Arg Leu Pro Gly Ala Leu Cys Ser Val
 355 360 365
 Leu Lys Tyr Arg Arg Ile Leu Asn Asn Leu Ala Gln Ala Asn Val Asp
 370 375 380
 Leu Ile Ile Leu Ala
 385

<210> 10016
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 10016
 Ala Met Asn Tyr Leu Glu Ile Thr Gly Ala Leu Val Gly Leu Ile Tyr
 1 5 10 15
 Leu Trp Leu Glu Tyr Arg Ala Ser Ile Tyr Leu Trp Ile Ala Gly Ile
 20 25 30
 Ile Met Pro Ala Ile Tyr Ile Phe Val Tyr Tyr Gln Ala Gly Leu Tyr
 35 40 45
 Ala Asp Phe Gly Ile Asn Ile Tyr Tyr Leu Leu Ala Ala Tyr Gly
 50 55 60
 Trp Met Val Trp Met Arg Gly Ser Glu Lys Glu Thr Arg Ala Glu Leu
 65 70 75 80
 Pro Ile Thr His Thr Pro Leu Lys Arg Tyr Leu Pro Leu Leu Leu Val
 85 90 95
 Phe Leu Ala Ala Phe Phe Gly Ile Ala Trp Ile Leu Ile Arg Phe Thr
 100 105 110
 Asp Ser Asn Val Pro Trp Leu Asp Ser Phe Thr Thr Ala Leu Ser Ile
 115 120 125
 Ile Gly Met Trp Met Leu Ala Arg Lys Tyr Val Glu Gln Trp Trp Ala
 130 135 140
 Trp Ile Val Val Asp Val Val Cys Cys Gly Leu Tyr Ile Tyr Lys Glu
 145 150 155 160
 Leu Tyr Phe Thr Ser Ala Leu Tyr Gly Leu Tyr Ser Ile Ile Ala Ile
 165 170 175
 Phe Gly Tyr Phe Lys Trp Lys Gln Met Met His Tyr Glu Ser Lys
 180 185 190

<210> 10017
 <211> 64
 <212> PRT
 <213> B.fragilis

<400> 10017
 Lys Asn Asp Leu Val Leu Val Ile His Tyr Glu Tyr Lys Asn Gln Thr
 1 5 10 15
 Thr Phe Trp His Trp Asn Ile Gly Arg Asn Glu Tyr Phe Thr Gly Tyr
 20 25 30
 Thr Phe Gln Cys Lys Pro Leu Asp Phe Asn Arg His Gly Asn Leu Ile
 35 40 45
 Val Pro Val Pro Cys Leu Val Leu Ser Gly Arg Leu Tyr Gly Ser Pro
 50 55 60

<210> 10018
 <211> 62

<212> PRT

<213> B.fragilis

<400> 10018

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Leu Tyr Ile Gln Lys Arg Leu Leu Tyr His Met Thr Ala Ser Ser Phe
1              5              10              15
Leu Lys Ala Ile His Ser Met Leu Ala Phe His Leu Thr Thr Leu Ser
              20              25              30
Ile Thr Ile Tyr Leu Asn Lys Gly Gln Leu Glu Ser Ser Ile Trp Ala
              35              40              45
Ser Phe Ile Ile Ala Phe Asn Ser Ser Ala Phe Ser Gly Tyr
              50              55              60

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<210> 10019

<211> 530

<212> PRT

<213> B.fragilis

<400> 10019

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Thr Met Ile Gln Glu Tyr Gln Leu Arg Ile Leu Pro Glu Ile Ala Ala
1              5              10              15
Ser Glu Gln Gln Leu Lys Ala Tyr Leu Ser Gln Glu Lys Gly Leu Asn
              20              25              30
Gln Arg Asp Ile Thr Ala Leu Arg Thr Leu Lys Arg Ser Ile Asp Ala
              35              40              45
Arg Gln Arg Thr Ile Tyr Val Asn Leu Lys Val Arg Val Tyr Leu Asn
              50              55              60
Glu Met Pro Lys Asp Asp Glu Tyr Glu His Thr Ile Tyr Asn Asn Val
65              70              75              80
Glu Arg Lys Pro Gln Val Ile Val Val Gly Ala Gly Pro Gly Gly Leu
              85              90              95
Phe Ala Ala Leu Arg Leu Ile Glu Leu Gly Leu Arg Pro Val Val Val
              100              105              110
Glu Arg Gly Lys Asn Val Arg Glu Arg Lys Lys Asp Leu Ala Gln Ile
              115              120              125
Ser Arg Glu His Arg Val Asp Pro Glu Ser Asn Tyr Ser Phe Gly Glu
              130              135              140
Gly Gly Ala Gly Ala Tyr Ser Asp Gly Lys Leu Tyr Thr Arg Ser Lys
145              150              155              160
Lys Arg Gly Asn Val Asp Lys Ile Leu Asn Val Phe Cys Gln His Gly
              165              170              175
Ala Ser Thr Ala Ile Leu Val Asp Ala His Pro His Ile Gly Thr Asp
              180              185              190
Lys Leu Pro Arg Val Ile Glu Asn Met Arg Asn Thr Ile Ile Glu Cys
              195              200              205
Gly Gly Glu Val His Phe Lys Thr Arg Met Asp Ala Leu Ile Ile Glu
210              215              220
Gln Gly Glu Val Lys Gly Ile Glu Thr Asn Thr Gly Glu Thr Phe Leu
225              230              235              240
Gly Pro Val Ile Leu Ala Thr Gly His Ser Ala Arg Asp Val Tyr Arg
              245              250              255
Trp Leu Ala Ala Asn Asn Val Thr Ile Glu Ala Lys Gly Ile Ala Val
              260              265              270
Gly Val Arg Leu Glu His Pro Ala Gly Leu Ile Asp Gln Ile Gln Tyr
              275              280              285
His Asn Arg Ser Gly Arg Gly Lys Tyr Leu Pro Ala Ala Glu Tyr Ser
290              295              300
Phe Val Thr Gln Val Asp Gly Arg Gly Val Tyr Ser Phe Cys Met Cys
305              310              315              320

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Pro Gly Gly Phe Ile Val Pro Ala Ala Ser Gly Pro Glu Gln Val Val
 325 330 335
 Val Asn Gly Met Ser Pro Ser Asn Arg Gly Ser Arg Trp Ser Asn Ser
 340 345 350
 Gly Met Val Val Glu Ile Gln Pro Glu Asp Ile Ile Asn Asp Lys Arg
 355 360 365
 Leu Thr Val Asn Asn Glu Ala Glu Glu Thr Phe Pro Glu Leu Ala Val
 370 375 380
 Leu His Phe Gln Glu Glu Leu Glu Arg Gln Cys Trp Leu Gln Gly Gly
 385 390 395 400
 Arg Arg Gln Thr Ala Pro Ala Gln Arg Met Val Asp Phe Thr Arg Lys
 405 410 415
 Lys Leu Ser Tyr Asp Leu Pro Glu Ser Ser Tyr Ser Pro Gly Leu Ile
 420 425 430
 Ser Ser Pro Leu His Phe Trp Met Pro Glu Phe Ile Ala Gly Arg Leu
 435 440 445
 Ser Gln Gly Phe Gln Gln Phe Gly Arg Ser Ser His Gly Phe Leu Thr
 450 455 460
 Asn Glu Ala Val Met Ile Gly Val Glu Thr Arg Thr Ser Ser Pro Val
 465 470 475 480
 Arg Ile Val Arg Asp Lys Asp Thr Leu Gln His Ile Thr Leu Arg Gly
 485 490 495
 Leu Phe Pro Cys Gly Glu Gly Ala Gly Tyr Ala Gly Gly Ile Val Ser
 500 505 510
 Ala Gly Ile Asp Gly Glu Arg Cys Ala Glu Ala Val Ala Gln Phe Met
 515 520 525
 Asn Pro
 530

<210> 10020

<211> 83

<212> PRT

<213> B.fragilis

<400> 10020

Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
 1 5 10 15
 Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
 20 25 30
 Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
 35 40 45
 Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
 50 55 60
 Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
 65 70 75 80
 Ser Ala Arg

<210> 10021

<211> 415

<212> PRT

<213> B.fragilis

<400> 10021

His Tyr Glu His Cys Lys Arg Ile Lys Lys Lys Leu Met Lys His Ile
 1 5 10 15
 Ile Ile Leu Gly Asp Gly Met Ala Asp Trp Ala Val Lys Ser Leu Gly
 20 25 30
 Asp Lys Thr Leu Leu Gln Tyr Ala Lys Thr Pro Tyr Met Asp Lys Leu

35 40 45
 Ala Arg Met Gly Arg Asn Gly Arg Leu Ile Thr Val Ala Asp Gly Phe
 50 55 60
 His Pro Gly Ser Glu Val Ala Asn Met Ser Val Leu Gly Tyr Asn Leu
 65 70 75 80
 Pro Lys Val Tyr Glu Gly Arg Gly Pro Leu Glu Ala Ala Ser Ile Gly
 85 90 95
 Val Asp Leu Gln Pro Gly Glu Met Ala Met Arg Cys Asn Leu Ile Cys
 100 105 110
 Thr Glu Gly Asp Ile Leu Lys Asn His Ser Ala Gly His Ile Thr Thr
 115 120 125
 Glu Glu Ala Asp Val Leu Ile Gln Tyr Leu Gln Glu Lys Leu Gly Asp
 130 135 140
 Asp Arg Val Arg Phe His Thr Gly Val Gln Tyr Arg His Leu Leu Val
 145 150 155 160
 Val Lys Gly Gly Asn Lys Gln Leu Asp Cys Thr Pro Pro His Asp Val
 165 170 175
 Pro Leu Lys Pro Phe Arg Pro Leu Met Val Lys Pro Leu Val Pro Glu
 180 185 190
 Ala Glu Glu Thr Ala Ser Leu Leu Asn Glu Leu Ile Leu Lys Ser Gln
 195 200 205
 Glu Leu Leu Lys Asp His Pro Leu Asn Leu Lys Arg Met Ala Glu Gly
 210 215 220
 Lys Asp Pro Ala Asn Ser Ile Trp Pro Trp Ser Pro Gly Tyr Arg Pro
 225 230 235 240
 Gln Met Glu Arg Leu Ser Asp Thr Phe Pro Gln Val Lys Arg Gly Ala
 245 250 255
 Val Ile Ser Ala Val Asp Leu Ile Asn Gly Ile Gly Tyr Tyr Ala Gly
 260 265 270
 Leu Arg Arg Ile Ala Val Glu Gly Ala Thr Gly Leu Tyr Asp Thr Asn
 275 280 285
 Tyr Glu Asn Lys Val Ala Ala Ala Leu Glu Ala Leu Lys Thr Asp Asp
 290 295 300
 Phe Val Tyr Leu His Ile Glu Ala Ser Asp Glu Ala Gly His Glu Gly
 305 310 315 320
 Asp Val Ala Leu Lys Leu Lys Thr Ile Glu Asn Leu Asp Ser Arg Ala
 325 330 335
 Val Gly Pro Ile Tyr Glu Ala Val Lys Glu Trp Glu Glu Pro Val Ala
 340 345 350
 Ile Ala Val Leu Pro Asp His Pro Thr Pro Cys Glu Leu Arg Thr His
 355 360 365
 Thr Asn Glu Pro Val Pro Phe Phe Ile Trp Tyr Pro Gly Ile Glu Pro
 370 375 380
 Asp Ser Val Gln Thr Phe Asp Glu Val Ala Ala Val Glu Gly Ser Tyr
 385 390 395 400
 Gly Leu Leu Lys Glu Asp Glu Phe Ile Lys Glu Phe Met Asn Arg
 405 410 415

<210> 10022

<211> 687

<212> PRT

<213> B.fragilis

<400> 10022

Gln Asp Asn Lys Val Met Lys Asn Lys Met Ser Ala Ser Met Phe Gln
 1 5 10 15
 Lys Glu Gln Val Ile Glu Ser Ile Arg Gln Ser Phe Val Lys Leu Asn
 20 25 30
 Pro Arg Met Met Ile Lys Asn Pro Ile Met Phe Thr Val Glu Val Val

		35						40						45				
Thr	Val	Ile	Met	Leu	Val	Val	Thr	Leu	Leu	Ser	Leu	Phe	Thr	Pro	Glu			
	50					55					60							
Tyr	Gly	Thr	Phe	Gly	Tyr	Asn	Leu	Cys	Val	Phe	Leu	Ile	Leu	Phe	Val			
65					70					75					80			
Thr	Leu	Leu	Phe	Ala	Asn	Phe	Ala	Glu	Ala	Ile	Ala	Glu	Ala	Arg	Gly			
				85					90					95				
Lys	Ala	Gln	Ala	Asp	Ser	Leu	Arg	Lys	Thr	Arg	Glu	Glu	Thr	Pro	Ala			
			100					105					110					
Lys	Leu	Val	Ile	Gly	Asp	Lys	Val	Gln	Thr	Val	Ser	Ser	Ser	Lys	Leu			
		115					120					125						
Lys	Lys	Gly	Asp	Val	Phe	Val	Cys	Glu	Ala	Gly	Asp	Thr	Ile	Pro	Ala			
	130					135					140							
Asp	Gly	Glu	Ile	Ile	Glu	Gly	Leu	Ala	Ser	Ile	Asp	Glu	Ser	Ala	Ile			
145					150					155					160			
Thr	Gly	Glu	Ser	Ala	Pro	Val	Ile	Arg	Glu	Ala	Gly	Gly	Asp	Lys	Ser			
				165					170					175				
Ser	Val	Thr	Gly	Gly	Thr	Lys	Val	Leu	Ser	Asp	His	Ile	Lys	Val	Leu			
			180					185					190					
Val	Thr	Gln	Gln	Pro	Gly	Glu	Ser	Phe	Leu	Asp	Lys	Met	Ile	Ala	Leu			
		195					200					205						
Val	Glu	Gly	Ala	Ser	Arg	Gln	Lys	Thr	Pro	Asn	Glu	Ile	Ala	Leu	Thr			
	210					215					220							
Ile	Leu	Leu	Ala	Gly	Phe	Thr	Leu	Val	Phe	Val	Ile	Val	Cys	Val	Thr			
225					230				235						240			
Leu	Ile	Pro	Phe	Ala	Asp	Tyr	Thr	Ser	Leu	Glu	His	Pro	Gly	Thr	Ala			
				245					250					255				
Ile	Ser	Ile	Ala	Ala	Ile	Leu	Ser	Leu	Phe	Val	Cys	Leu	Ile	Pro	Thr			
			260					265					270					
Thr	Ile	Gly	Gly	Leu	Leu	Ser	Ala	Ile	Gly	Ile	Ala	Gly	Met	Asp	Arg			
		275					280					285						
Ala	Leu	Arg	Ala	Asn	Val	Ile	Thr	Lys	Ser	Gly	Lys	Ala	Val	Glu	Thr			
	290					295					300							
Ala	Gly	Asp	Ile	Asp	Thr	Leu	Leu	Leu	Asp	Lys	Thr	Gly	Thr	Ile	Thr			
305					310					315					320			
Ile	Gly	Asn	Arg	Arg	Ala	Thr	Lys	Phe	His	Ser	Ala	Pro	Gly	Val	Gly			
				325					330					335				
Pro	Arg	Glu	Phe	Val	Thr	Thr	Cys	Leu	Leu	Ala	Ser	Leu	Ser	Asp	Glu			
			340					345					350					
Thr	Pro	Glu	Gly	Lys	Ser	Ile	Val	Glu	Leu	Gly	Arg	Glu	Ser	Gly	Val			
		355					360					365						
Arg	Met	Arg	Ser	Leu	Gln	Thr	Ala	Gly	Ala	Arg	Met	Ile	Gln	Phe	Thr			
	370					375					380							
Ala	Glu	Thr	Lys	Cys	Ser	Gly	Val	Asp	Leu	Ala	Asp	Gly	Thr	Gln	Ile			
385					390					395								

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<210> 10023
<211> 573
<212> PRT
<213> B.fragilis
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<400>	10023														
Phe	Glu	Asn	Lys	Ala	Met	Asn	Thr	Glu	Ile	Leu	Gly	Val	Ala	Val	Gln
1				5					10					15	
Ile	Val	Leu	Met	Val	Val	Leu	Ala	Tyr	Pro	Leu	Gly	Arg	Tyr	Ile	Ala
			20					25					30		
Arg	Val	Tyr	Lys	Gly	Glu	Lys	Thr	Trp	Ser	Asp	Phe	Ile	Ala	Pro	Ile
		35					40					45			
Glu	Arg	Val	Ile	Tyr	Lys	Ile	Cys	Gly	Ile	Asn	Pro	Gln	Glu	Glu	Met
	50					55					60				
Asn	Trp	Lys	Gln	Phe	Leu	Lys	Ala	Leu	Leu	Ile	Leu	Asn	Ala	Phe	Trp
65					70					75					80
Phe	Val	Trp	Gly	Met	Val	Leu	Leu	Val	Ser	Gln	Gly	Trp	Leu	Pro	Leu
				85					90					95	
Asn	Pro	Asp	Gly	Asn	Gly	Ala	Gln	Thr	Pro	Asp	Gln	Ala	Phe	Asn	Thr
			100					105					110		
Cys	Ile	Ser	Phe	Met	Val	Asn	Cys	Asn	Leu	Gln	His	Tyr	Ser	Gly	Glu
		115					120					125			
Ser	Gly	Leu	Thr	Tyr	Phe	Thr	Gln	Leu	Phe	Val	Ile	Met	Leu	Phe	Gln
	130					135					140				
Phe	Ile	Thr	Ala	Ala	Thr	Gly	Met	Ala	Ala	Met	Ala	Gly	Val	Met	Lys
145					150					155					160
Ser	Met	Ala	Ala	Lys	Ser	Thr	Gln	Thr	Ile	Gly	Asn	Phe	Trp	His	Phe
				165					170					175	
Leu	Val	Ile	Ser	Cys	Thr	Arg	Ile	Leu	Leu	Pro	Leu	Ser	Leu	Val	Val
			180					185					190		
Gly	Phe	Ile	Leu	Ile	Leu	Gln	Gly	Thr	Pro	Met	Gly	Phe	Asp	Gly	Arg
		195					200					205			
Met	Gln	Leu	Thr	Thr	Leu	Glu	Gly	Gln	Glu	Gln	Met	Val	Ser	Gln	Gly
	210					215					220				
Pro	Thr	Ala	Ala	Ile	Val	Pro	Ile	Lys	Gln	Leu	Gly	Thr	Asn	Gly	Gly
225					230					235					240

Gly Tyr Phe Gly Val Asn Ser Ser His Pro Leu Glu Asn Pro Thr Tyr
 245 250 255
 Leu Thr Asn Met Val Glu Cys Trp Ser Ile Leu Ile Ile Pro Met Ala
 260 265 270
 Met Val Leu Ala Leu Gly Phe Tyr Thr Asn Arg Arg Lys Leu Gly Tyr
 275 280 285
 Ser Ile Phe Gly Val Met Leu Phe Ala Tyr Leu Ala Gly Val Phe Ile
 290 295 300
 Asn Val Gly Gln Glu Met Gly Gly Asn Pro Arg Ile Ser Glu Met Gly
 305 310 315 320
 Ile Ala Gln Asp His Gly Ala Met Glu Gly Lys Glu Val Arg Leu Gly
 325 330 335
 Ala Gly Ala Thr Ala Leu Trp Ser Val Thr Thr Thr Val Thr Ser Asn
 340 345 350
 Gly Ser Val Asn Gly Met His Asp Ser Thr Met Pro Leu Ser Gly Met
 355 360 365
 Val Glu Met Leu Asn Met Gln Ile Asn Thr Trp Phe Gly Gly Val Gly
 370 375 380
 Val Gly Trp Leu Asn Tyr Tyr Thr Phe Ile Ile Met Ala Val Phe Ile
 385 390 395 400
 Ser Gly Leu Met Val Gly Arg Thr Pro Glu Phe Leu Gly Lys Lys Val
 405 410 415
 Glu Ala Arg Glu Met Lys Ile Ala Thr Phe Val Ala Leu Leu His Pro
 420 425 430
 Phe Val Ile Leu Val Phe Thr Ala Ile Ser Ser Tyr Val Tyr Thr His
 435 440 445
 His Pro Asp Phe Val Glu Ser Glu Gly Gly Trp Leu Asn Asn Leu Gly
 450 455 460
 Phe His Gly Leu Ser Glu Gln Leu Tyr Glu Tyr Thr Ser Ser Ala Ala
 465 470 475 480
 Asn Asn Gly Ser Gly Phe Glu Gly Leu Gly Asp Asn Thr Tyr Phe Trp
 485 490 495
 Asn Trp Thr Cys Gly Ile Val Leu Ile Leu Ser Arg Phe Ile Pro Ile
 500 505 510
 Val Gly Gln Val Ala Ile Ala Gly Leu Leu Ala Gln Lys Lys Phe Ile
 515 520 525
 Pro Glu Ser Ala Gly Thr Leu Lys Thr Asp Thr Val Thr Phe Ala Val
 530 535 540
 Met Thr Phe Ala Val Ile Phe Ile Val Ala Ala Leu Ser Phe Phe Pro
 545 550 555 560
 Val His Ala Leu Ser Thr Ile Ala Glu His Leu Ser Leu
 565 570

<210> 10024

<211> 954

<212> PRT

<213> B.fragilis

<400> 10024

Asp Ser Ala Asn Gln Ile Lys Lys Glu Gly Val Ile Cys Glu Lys Val
 1 5 10 15
 His Pro Ser Leu Leu Leu Glu Tyr Leu Val Ser Ile Leu Cys Ser Leu
 20 25 30
 Lys Arg His Tyr Asn Thr Lys Tyr Thr Gln His Met Lys Asn Ile Phe
 35 40 45
 Phe Ile Cys Leu Phe Leu Ser Met Ser Leu Ala Val Ser Gly Lys Lys
 50 55 60
 Ala Gln Val Ser Ile Ser Cys Leu Lys Thr Glu Met Leu Val Asn Pro
 65 70 75 80

Gln	Asn	Ile	Asp	Cys	Pro	Ser	Pro	Arg	Leu	Ser	Trp	Glu	Ile	Leu	Ser
			85						90					95	
Asp	Val	Arg	Asp	Val	Arg	Gln	Val	Ser	Tyr	His	Ile	Leu	Val	Ser	Thr
			100					105					110		
Ser	Leu	Glu	Lys	Leu	Asn	Arg	Glu	Gly	Asp	Leu	Trp	Asp	Thr	Gly	
		115					120				125				
Asp	Val	Ala	Ser	Asp	Gln	Ser	Ala	Tyr	Val	Ser	Tyr	Gly	Gly	Asp	Met
	130					135				140					
Leu	Asp	Ser	Arg	Thr	Gln	Cys	Tyr	Trp	Lys	Val	Arg	Val	Lys	Thr	Asn
145					150					155					160
Lys	Gly	Ile	Ser	Ala	Trp	Ser	Glu	Pro	Ala	Ser	Trp	Glu	Met	Gly	Leu
				165					170					175	
Leu	His	Pro	Ser	Asp	Trp	Gln	Ala	Val	Trp	Ile	Gly	Arg	Ala	Phe	Pro
			180					185					190		
Gln	Asp	Lys	Leu	Glu	Gly	Asn	Thr	Arg	Val	Pro	Ala	Arg	Tyr	Leu	Arg
		195					200				205				
Lys	Pro	Phe	Asn	Leu	Asn	Ser	Lys	Lys	Val	Arg	Lys	Ala	Thr	Leu	Tyr
	210					215				220					
Ile	Cys	Gly	Leu	Gly	Phe	Tyr	Glu	Ala	Tyr	Ile	Asn	Gly	Lys	Lys	Ile
225					230					235					240
Gly	Asp	Gln	Val	Leu	Ala	Pro	Thr	Pro	Thr	Asp	Tyr	Ser	Lys	Ser	Val
			245						250				255		
Lys	Tyr	Asn	Arg	Phe	Asp	Val	Thr	Gly	Gln	Leu	Leu	Lys	Gly	Ala	Asn
		260						265					270		
Ala	Ile	Gly	Val	Ile	Leu	Gly	Asn	Gly	Arg	Tyr	Thr	Ser	Met	Arg	Met
		275					280					285			
Pro	Gly	Val	Arg	His	Phe	Asp	Val	Pro	Lys	Met	Ile	Ala	Gln	Leu	Glu
	290					295				300					
Val	Tyr	Tyr	Glu	Asp	Gly	Glu	Lys	Arg	Val	Ile	Ala	Ser	Asp	Ala	Ser
305					310					315					320
Trp	Lys	Ile	Thr	Ala	Glu	Gly	Pro	Ile	Gly	Thr	Asn	Asn	Glu	Phe	Asp
			325						330					335	
Gly	Glu	Glu	Tyr	Asp	Ala	Arg	Lys	Glu	Met	Pro	Gly	Trp	Asn	Thr	Tyr
			340					345					350		
Pro	Phe	Asp	Asp	Thr	Lys	Trp	Leu	Gln	Ala	Glu	Val	Val	Ser	Leu	Pro
	355						360					365			
Gly	Gly	Lys	Leu	Glu	Ala	Gln	Leu	Asn	Arg	Asn	Met	Lys	Val	Met	Asp
	370					375				380					
Thr	Val	Lys	Pro	Ile	Gly	Ile	Thr	Glu	Ser	Ala	Pro	Gly	Val	Tyr	Ile
385					390					395					400
Leu	Asp	Met	Gly	Gln	Asn	Met	Val	Gly	Trp	Leu	Arg	Met	Lys	Val	Lys
			405						410					415	
Gly	Gln	Ser	Gly	Asp	Thr	Leu	Lys	Leu	Arg	Phe	Ala	Glu	Leu	Leu	Gln
			420						425				430		
Lys	Asp	Gly	Ser	Ile	Tyr	Thr	Ala	Asn	Leu	Arg	Thr	Ala	His	Ser	Ala
	435						440					445			
Asp	Thr	Tyr	Ile	Leu	Lys	Gly	Asn	Ser	Met	Glu	Glu	Trp	Gln	Pro	Thr
	450					455					460				
Phe	Thr	Tyr	His	Gly	Phe	Arg	Phe	Val	Glu	Leu	Thr	Gly	Phe	Arg	Glu
465					470					475					480
Lys	Pro	Ser	Leu	Ser	Asp	Phe	Glu	Gly	Gln	Val	Ile	Tyr	Asp	Glu	Met
			485						490					495	
Glu	Thr	Thr	Gly	Asn	Leu	Glu	Thr	Ser	Asp	Pro	Met	Ile	Asn	Arg	Ile
			500					505					510		
Tyr	Lys	Asn	Ala	Tyr	Trp	Gly	Ile	Arg	Gly	Asn	Tyr	Arg	Gly	Met	Pro
		515					520					525			
Thr	Asp	Cys	Pro	Gln	Arg	Asp	Glu	Arg	Met	Gly	Trp	Leu	Gly	Asp	Arg
	530					535					540				
Ala	Val	Gly	Ser	Gln	Gly	Glu	Ser	Tyr	Ile	Phe	Asn	Asn	His	Leu	Leu

545 550 555 560
 Tyr Ala Lys Trp Leu Asp Asp Ile Glu Gln Ala Gln Lys Glu Asn Gly
 565 570 575
 Ala Val Pro Asp Val Ala Pro Asn Tyr Trp Asp Val Cys Thr Asp Asn
 580 585 590
 Met Thr Trp Pro Gly Ala Tyr Leu Ile Ile Ala Asn Met Leu Tyr Asp
 595 600 605
 Gln Phe Gly Asp Lys Gln Pro Ile Ile Lys His Tyr Pro Ser Met Lys
 610 615 620
 Lys Trp Met Arg Tyr Met Lys Asp Lys Tyr Met Val Asp His Ile Met
 625 630 635 640
 Thr Lys Asp Ile Phe Gly Asp Trp Cys Met Pro Ser Gln Ser Ser Glu
 645 650 655
 Leu Ile His Ser Lys Asp Pro Ser Arg Ile Thr Glu Ala Glu Val Leu
 660 665 670
 Gly Thr Thr Phe Tyr Tyr Tyr Leu Ser Asn Leu Met Val Arg Phe Ala
 675 680 685
 Ala Leu Ala Gly Tyr Pro Gln Asp Ala Glu Asp Phe Arg Lys Glu Ser
 690 695 700
 Glu Leu Ala Lys Glu Ala Phe Asn Ser Lys Tyr Leu His Thr Glu Leu
 705 710 715 720
 Gly Tyr Tyr Ser Asn Asn Thr Val Thr Ala Asn Ile Leu Ser Leu Arg
 725 730 735
 Phe Gly Met Val Pro Glu Ala Tyr Lys Glu Val Val Phe Arg Asn Ile
 740 745 750
 Val Glu Lys Thr Met Lys Asp Phe Asn Gly His Val Ser Thr Gly Leu
 755 760 765
 Val Gly Ile Gln Gln Leu Met Arg Gly Leu Ser Asp Tyr Gly Arg Ile
 770 775 780
 Asp Leu Ala Tyr Arg Ile Ala Thr Asn Arg Thr Tyr Pro Ser Trp Gly
 785 790 795 800
 Tyr Met Val Asp Asn Gly Ala Thr Thr Ile Trp Glu Leu Trp Asn Gly
 805 810 815
 Asn Thr Ala Asp Pro Ala Met Asn Ser Ala Asn His Val Met Leu Leu
 820 825 830
 Gly Asp Leu Ile Val Trp Ala Tyr Gly Tyr Leu Gly Gly Ile Ser Asn
 835 840 845
 Ala Pro Gly Ser Val Gly Phe Lys Gln Ile Gln Leu Lys Pro Tyr Pro
 850 855 860
 Val Asp Gly Leu Asp Phe Val Asn Thr Ser Phe His Ser Ile Tyr Gly
 865 870 875 880
 Glu Val Arg Ser His Trp Lys Lys Glu Asp Gly Ser Phe Cys Trp Asp
 885 890 895
 Ile Ser Val Pro Cys Asn Thr Ser Ala Leu Val Tyr Val Pro Val Ala
 900 905 910
 Asp Lys Ser Ile Asp Pro Lys Glu Lys Lys Arg Ile Val Gly Glu Gly
 915 920 925
 Gly Thr Phe Leu Arg Met Glu Gly Ser Tyr Ala Val Phe Ser Phe Pro
 930 935 940
 Ser Gly Ser Tyr Arg Leu Lys Thr Arg Leu
 945 950

<210> 10025

<211> 986

<212> PRT

<213> B.fragilis

<400> 10025

His Lys His Lys Met Arg His Leu Phe Leu Leu Ala Ala Leu Phe Cys

945		950		955		960										
Thr	Val	Ile	Gln	Lys	Ile	Val	Ile	Asp	Met	Gly	Gly	Leu	Lys	Arg	Ser	
			965						970					975		
Tyr	Leu	Gly	Pro	Glu	Thr	Thr	Leu	Cys	Arg							
			980					985								

<210> 10026
 <211> 333
 <212> PRT
 <213> B.fragilis

<400> 10026															
Glu	Leu	Pro	Asn	Glu	Ser	Glu	Cys	Arg	Met	Arg	Glu	Lys	Val	Arg	Phe
1				5					10					15	
Cys	Val	Ala	Leu	Cys	Cys	Ser	Val	Val	Met	Val	Leu	Leu	Ala	Ser	Cys
			20					25					30		
Arg	Tyr	Ser	Leu	Pro	Asp	Leu	Pro	Ala	Glu	Gly	Met	Ser	Arg	Lys	Thr
		35				40						45			
Lys	Asp	Ser	Leu	Thr	Tyr	Leu	Ser	Lys	Tyr	His	Tyr	Thr	Trp	Asn	Thr
	50					55					60				
Asn	Leu	Glu	Val	Leu	Asp	Asp	Ser	Val	Arg	Leu	Glu	Tyr	Leu	Pro	Leu
65				70					75						80
Lys	Asp	Ala	Tyr	Val	Asn	Leu	Tyr	Lys	Gly	Asp	Arg	Val	Val	Val	Ala
			85						90					95	
Glu	Phe	Ser	Val	His	Pro	Gln	Asp	Ser	Val	Asp	Ser	Ile	Trp	Val	Lys
			100					105						110	
Val	Ala	His	Ser	Gln	Glu	Val	Gln	Gly	Trp	Val	Arg	Asn	Lys	Glu	Leu
			115					120					125		
Val	Arg	Ser	Phe	Val	Pro	Thr	Asp	Ser	Ile	Ser	Gln	Phe	Ile	His	Leu
			130				135					140			
Phe	Ser	Asp	Thr	His	Ala	Ser	Tyr	Phe	Val	Phe	Ile	Phe	Ala	Leu	Phe
145					150					155					160
Val	Gly	Val	Tyr	Leu	Leu	Arg	Ala	Phe	Met	Lys	Lys	Arg	Leu	Gln	Met
				165					170					175	
Val	Tyr	Phe	Asn	Asp	Ile	Asp	Ser	Val	Tyr	Pro	Leu	Phe	Leu	Cys	Leu
			180					185					190		
Leu	Met	Ala	Phe	Ser	Ala	Thr	Val	Tyr	Glu	Thr	Met	Gln	Val	Phe	Val
			195				200					205			
Pro	Asp	Thr	Trp	Glu	His	Phe	Tyr	Phe	Asn	Pro	Thr	Leu	Ser	Pro	Phe
						215					220				
Lys	Val	Pro	Phe	Ile	Leu	Ser	Val	Phe	Leu	Thr	Gly	Ile	Trp	Leu	Phe
225					230					235					240
Ile	Ile	Val	Thr	Leu	Ala	Val	Leu	Asp	Asp	Leu	Phe	Arg	Gln	Leu	Thr
				245					250					255	
Pro	Ala	Val	Ala	Val	Phe	Tyr	Leu	Leu	Gly	Leu	Met	Ser	Cys	Cys	Ile
			260					265					270		
Leu	Cys	Tyr	Phe	Leu	Phe	Ile	Leu	Thr	Thr	His	Ile	Tyr	Ile	Gly	Tyr
		275					280					285			
Phe	Phe	Val	Ala	Cys	Phe	Ile	Trp	Leu	Phe	Val	Lys	Lys	Val	Arg	Arg
		290				295					300				
Gly	Ser	Gly	Tyr	Lys	Tyr	Arg	Cys	Gly	Asn	Cys	Gly	His	Lys	Leu	Arg
305					310					315					320
Asp	Lys	Gly	Gln	Cys	Pro	His	Cys	Gly	Ala	Val	Asn	Glu			
			325					330							

<210> 10027
 <211> 1152
 <212> PRT
 <213> B.fragilis

<400> 10027

Lys Pro Pro Lys Asp Gly Tyr Cys Leu Thr Lys Lys Asn Asn Ile Met
 1 5 10 15
 Asn Lys Asn Arg Ser Ile Arg Val Ala Ala Phe Cys Leu Gly Leu Met
 20 25 30
 Leu Ala Gly Ser Leu Gln Val His Ala Gln Lys Val Thr Phe Arg Asp
 35 40 45
 Gly Thr Val Ser Leu Lys Gln Ala Phe Glu Lys Ile Glu Ala Ser Ser
 50 55 60
 Lys Tyr Lys Ile Ala Tyr Asn Asp Ser His Leu Asn Val Ser Arg Lys
 65 70 75 80
 Val Ser Leu Asn Gln Lys Glu Thr Glu Val Leu Glu Ile Leu Ala Thr
 85 90 95
 Ile Leu Lys Asp Thr Gly Tyr Thr Tyr Lys Lys Ser Gly Asn Tyr Ile
 100 105 110
 Val Ile Val Pro Val Glu Gln Lys Pro Ala Ser Lys Val Lys Lys Val
 115 120 125
 Lys Gly Val Val Lys Asp Ala Ser Gly Glu Ala Ile Ile Gly Ala Asn
 130 135 140
 Val Leu Val Lys Gly Thr Ala Thr Gly Val Ile Thr Asp Met Asn Gly
 145 150 155 160
 Ser Phe Glu Leu Glu Val Pro Gly Asn Ala Val Leu Gln Ile Thr Tyr
 165 170 175
 Ile Gly Tyr Val Gln Gln Asp Val Ala Val Lys Asn Arg Asp Gln Leu
 180 185 190
 Ala Val Leu Leu Lys Glu Asp Thr Lys Thr Leu Asp Glu Val Val Val
 195 200 205
 Val Gly Tyr Gly Thr Met Lys Lys Lys Asp Leu Thr Gly Ala Val Ala
 210 215 220
 Ser Val Lys Met Asp Asp Thr Pro Leu Ser Thr Ile Ser Thr Val Ser
 225 230 235 240
 His Ala Leu Ala Gly Lys Ala Ala Gly Leu Gln Val Asn Thr Ile Ser
 245 250 255
 Ala Gln Pro Gly Gly Gly Thr Thr Phe Arg Ile Arg Gly Ala Ala Ser
 260 265 270
 Thr Gly Ala Gly Asn Asp Pro Leu Ile Ile Val Asp Gly Phe Pro Val
 275 280 285
 Ser Asn Ala Gly Asn Val Ser Val Gly Tyr Asn Ser Asp Asn Gly Thr
 290 295 300
 Thr Asp Asn Ile Leu Ala Ser Ile Asn Pro Asn Asp Ile Glu Ser Ile
 305 310 315 320
 Glu Val Leu Lys Asp Ala Ser Ser Thr Ala Ile Tyr Gly Ala Arg Ala
 325 330 335
 Gly Ser Gly Val Ile Ile Ile Thr Thr Lys Arg Gly Lys Glu Gly Lys
 340 345 350
 Pro Lys Val Thr Tyr Ser Gly Ser Ala Thr Val Gln Thr Met Ala Thr
 355 360 365
 Lys Tyr Glu Met Leu Asp Ala Gln Asp Phe Met Ile Gln Ser Asn Arg
 370 375 380
 Trp Phe Lys Glu Lys Trp Met Tyr Asp Asn Lys Val Gly Ile Tyr Gly
 385 390 395 400
 Gly Lys Asn Glu Ser Glu Ala Gly Ser Ala Tyr His Pro Lys Tyr Ser
 405 410 415
 Asp Ala Asp Ile Ala Asn Pro Val Asn Asp Thr Asp Trp Tyr Asp Arg
 420 425 430
 Ile Thr Arg Thr Gly Phe Gln Thr Gln His Asn Ile Ser Ile Asn Gly
 435 440 445
 Gly Thr Glu Tyr Thr Lys Tyr Leu Ile Ser Gly Asn Phe Phe Asn Gln

450		455		460
Lys Gly Ile Val	Lys Asn Asn Gly Met Ser Arg Tyr Thr Gly Arg Val			
465	470	475	480	
Asn Leu Asp Gln	Lys Leu Ser Lys Tyr Ala Lys Val Gly Ile Asn Leu			
	485	490	495	
Thr Val Ser Arg	Asn Thr Leu Asp Asn Val Pro Leu Gly Ala Gly Gln			
	500	505	510	
Asn Glu Tyr Ala Ser	Ile Leu Val Ser Ala Ala Gln Phe Ser Pro Leu			
	515	520	525	
Leu Ser Val Lys Asp	Glu Asn Gly Asp Tyr Ser Leu Asn Gln Gln Ala			
	530	535	540	
Ala Tyr Ile Pro Asn	Pro Val Ser Leu Leu Glu Ile Ser Asp Gln Thr			
545	550	555	560	
Thr Lys Glu Arg Phe	Leu Ala Thr Pro Phe Val Glu Ile Lys Pro Ile			
	565	570	575	
Asn Glu Leu Thr Leu	Lys Ala Ser Phe Gly Ile Asp Arg Asn Tyr Gln			
	580	585	590	
Arg Arg Glu Val Tyr	Met Pro Lys Thr Thr Leu Tyr Gly Glu Lys Ala			
	595	600	605	
Asp Gly Arg Ala Asp	Ile Gly Gln Tyr Asp Arg Ser Asp Tyr Leu Leu			
	610	615	620	
Glu Leu Thr Ala Asn	Tyr Ala Lys Arg Leu Gly Asp His Asn Leu Asn			
625	630	635	640	
Ala Leu Val Gly Tyr	Ser Phe Gln Arg Phe Thr Ser Lys Tyr Leu Asn			
	645	650	655	
Ala Gly Asn Gln Gly	Phe Leu Thr Asp Ala Phe Leu Phe Asn Asn Leu			
	660	665	670	
Gly Ala Gly Thr Tyr	Glu Lys Pro Trp Val Gly Ser Ser Ala Ser Lys			
	675	680	685	
Ser Glu Met Ala Ser	Phe Phe Gly Arg Val Asn Tyr Thr Tyr Lys Asp			
	690	695	700	
Arg Tyr Leu Val Thr	Ala Thr Leu Arg Ala Asp Gly Ala Ser Asn Phe			
705	710	715	720	
Ala Lys Asn Asn Arg	Trp Gly Tyr Phe Pro Ser Val Ala Leu Gly Trp			
	725	730	735	
Arg Phe Thr Glu Asn	Phe Ala Arg Ser Leu Asn Leu Asp Lys Val			
	740	745	750	
Leu Ser Asn Gly Lys	Leu Arg Leu Ser Tyr Gly Gln Thr Gly Asn Ser			
	755	760	765	
Asn Ile Gly Asp Lys	Ser Val Thr Tyr Tyr Gly Thr Gly Tyr Asn Lys			
	770	775	780	
Val Phe Gly Asn Lys	Glu Tyr Thr Gly Val Tyr Val Ser Gln Ile Gly			
785	790	795	800	
Asn Pro Asp Leu Lys	Trp Glu Thr Thr Thr Glu Trp Asn Val Gly Leu			
	805	810	815	
Asp Leu Gly Phe Leu	Asn Asn Arg Phe Asn Val Thr Ala Glu Tyr Phe			
	820	825	830	
His Lys Val Val Ser	Asp Leu Leu Ser Ser Arg Ser Val Leu Ser Tyr			
	835	840	845	
Asn Glu Val Gly Ser	Ile Ala Ala Asn Ile Gly Lys Thr Gln Ser Gln			
	850	855	860	
Gly Phe Glu Leu Thr	Ile Asn Thr Lys Asn Phe Asp Thr Lys Asp Phe			
865	870	875	880	
Ser Trp Asn Thr Asp	Phe Thr Phe Ser Phe Tyr Arg Asp Lys Trp Lys			
	885	890	895	
Glu Arg Asp Glu Asn	Trp Ser Pro Asn Pro Tyr Asp Met Tyr Asn Ala			
	900	905	910	
Pro Leu Arg Gly Tyr	Tyr Met Tyr Leu Ser Asp Gly Leu Ile Gln Pro			
	915	920	925	

Gly Glu Glu Val Ser Trp Met Pro Gly Ala Leu Pro Gly Gln Val Lys
 930 935 940
 Leu Lys Asp Ile Asp Gly Tyr Ala Tyr Asn Glu Asp Gly Thr Tyr Lys
 945 950 955 960
 Thr Asp Lys His Gly Ile Pro Leu Arg Thr Gly Lys Pro Asp Gly Lys
 965 970 975
 Ile Asp Tyr Ala Asp Ala Val Phe Lys Gly Cys Ser Asp Pro Gly Tyr
 980 985 990
 Leu Leu Gly Leu Asn Asn Thr Phe Arg Tyr Lys Asn Phe Asp Leu Asn
 995 1000 1005
 Val Tyr Phe Tyr Gly Gln Leu Asp Leu Leu Lys Ser Gly Ser Tyr Lys
 1010 1015 1020
 Asp Tyr Trp Ile Val Gly Ser Gly Thr Met Thr Gly Val Asn Asn Leu
 1025 1030 1035 1040
 Tyr Arg Gly Tyr Asn Met Pro Thr Ser Ala Lys Glu Val Trp Ser His
 1045 1050 1055
 Asp Asn Thr Ser Gly Lys Met Pro Gly Tyr Phe Gln Tyr Met Ser Asn
 1060 1065 1070
 Tyr Gly Tyr Gly Asp Tyr Phe Leu Glu Lys Ser Trp Phe Ile Arg Cys
 1075 1080 1085
 Arg Asn Ile Thr Leu Gly Tyr Thr Leu Pro Val Lys Ser Ala Lys Lys
 1090 1095 1100
 Leu Val Ser Asn Val Arg Ile Tyr Ala Asp Val Asn Asn Leu Phe Thr
 1105 1110 1115 1120
 Ile Thr Pro Tyr Asp Gly Leu Asp Val Glu Thr Asp Asp Ser Tyr Trp
 1125 1130 1135
 Ala Tyr Pro Asn Val Arg Ser Phe Ser Ile Gly Leu Asp Ile Thr Phe
 1140 1145 1150

<210> 10028

<211> 222

<212> PRT

<213> B.fragilis

<400> 10028

Arg Ile Thr Lys Met Glu Ile Phe Arg Asn Leu Thr Val Val Leu Ala
 1 5 10 15
 Ile Thr Thr Leu Val Ala Cys Asn Asp Val Thr Ile Glu Gly Ser Trp
 20 25 30
 Val Glu Pro Val Pro Gly Ile Ser Asn Leu Lys Gln Gly Phe Thr Leu
 35 40 45
 Glu Ala Asn Gly Ser Ala Ser Ser Ile Asn Met Ala Thr Leu Lys Tyr
 50 55 60
 Glu Lys Trp Lys Lys Glu Gly Asn Leu Leu Leu Ser Gly Ile Ser
 65 70 75 80
 Ile Gly Asn His Gln Ser Ile Ser Phe Thr Asp Thr Leu Thr Val Glu
 85 90 95
 Gln Leu Thr Gln Asp Ser Leu Ile Leu Lys Lys Gly Glu Leu Val Leu
 100 105 110
 Arg Tyr Ser Lys Thr Asn Glu Ile Pro Asp Glu Glu Ala Ile Pro Thr
 115 120 125
 Pro Asp Thr Pro Thr Gln Lys Leu Leu Ser Val Lys Gly Lys Leu Ile
 130 135 140
 Ile Gly His Glu Thr Arg Ser Phe Thr Ser Glu Gly Asp Ser Thr Asp
 145 150 155 160
 Tyr Trp Ile Val Asp Lys Thr Gly Glu Leu Leu Gln Lys Tyr Asp Gly
 165 170 175
 Glu Thr Lys Gly Ile Lys Asn Gly Thr Pro Val Tyr Val Glu Leu Glu
 180 185 190

Val Ile Asp Met Gly Lys Ser Asp Glu Gly Phe Ala Ala Asp Tyr Ala
 195 200 205
 Gly Val Tyr His Val Met Lys Ile Asn Lys Ile Thr Val Lys
 210 215 220

<210> 10029
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 10029
 Cys Ile Met Lys Val Asn Asp Ile Asp Met Asp Ala Val Ile Leu Gly
 1 5 10 15
 Asn Gly Glu Tyr Pro Thr His Ser Met Pro Glu Thr Met Leu Ile Met
 20 25 30
 Ala Pro Tyr Val Val Cys Cys Asp Gly Ser Ala Asp Glu His Ile Arg
 35 40 45
 Arg Gly Phe Thr Pro Asp Ala Ile Ile Gly Asp Gly Asp Ser Leu Ser
 50 55 60
 Pro Glu Asn Lys Glu Arg Phe Arg Thr Ile Phe His Gln Ile Asp Asp
 65 70 75 80
 Gln Glu Thr Asn Asp Gln Thr Lys Ala Val His Phe Leu Leu Asp Gln
 85 90 95
 Gly Lys Lys Thr Ile Ile Leu Val Gly Ala Thr Gly Lys Arg Glu Asp
 100 105 110
 His Thr Leu Gly Asn Ile Ser Leu Leu Ile Asp Tyr Met Lys Ala Gly
 115 120 125
 Ala Gln Val Thr Met Leu Thr Asp His Gly Met Phe Ile Pro Ala Ser
 130 135 140
 Gly Arg Asn Cys Phe Lys Ser Tyr Pro Gly Gln Gln Ile Ser Ile Phe
 145 150 155 160
 Asn Phe Asn Ala Thr Gly Leu Arg Ala Asp Gly Leu Val Tyr Pro Leu
 165 170 175
 Ser Asp Phe Ser Asn Trp Trp Gln Gly Thr Leu Asn Glu Ala Thr Gly
 180 185 190
 Thr Glu Phe Thr Ile His Ala Glu Gly Asp Tyr Leu Val Tyr Leu Asn
 195 200 205
 Tyr

<210> 10030
 <211> 118
 <212> PRT
 <213> B.fragilis

<400> 10030
 Gly Ser Met Asn Thr Ile Cys Lys Met Arg Asp Ile Tyr Lys Ala Leu
 1 5 10 15
 Ser Ile Phe Glu Thr Ala Phe Glu Glu Val Tyr Gly Ile Ser Leu Asn
 20 25 30
 Glu Ala Met Val Leu Cys Ala Leu Arg Glu Ala Gly Lys Glu Ile Thr
 35 40 45
 Ser Thr Ala Ile Ala Glu Arg Thr Glu Met Ala Pro Ser His Thr Ser
 50 55 60
 Lys Val Ile Arg Ala Val Glu Asp Lys Gly Leu Ile Arg Arg Ala Leu
 65 70 75 80
 Gly Glu Val Asp Lys Arg Gln Met Tyr Phe Ser Leu Thr Glu Ala Gly
 85 90 95
 Lys Lys Arg Leu Asn Glu Leu Asp Leu Asp Lys Val Glu Ile Pro Glu

100 105 110
 Met Leu Lys Pro Leu Ile
 115

<210> 10031
 <211> 257
 <212> PRT
 <213> B.fragilis

<400> 10031

Arg Lys Lys Lys Phe Ile Met Lys Ile Cys Ser Cys Leu Asn Lys Gly
 1 5 10 15
 Val Met Ile Ala Val Ala Val Val Cys Ser Ala Gly Leu Gln Ser Cys
 20 25 30
 Leu Asp Asp Asn Asp Lys Tyr Tyr Tyr Val Glu Gly Phe Pro Asn Ala
 35 40 45
 Leu Val Thr Val Lys Asn Ala Thr Asp Gly Ser Phe Phe Leu Gln Leu
 50 55 60
 Asn Asp Ser Thr Thr Leu Leu Pro Thr Asn Met Ser Ser Ser Pro Phe
 65 70 75 80
 Gly Asp Lys Glu Val Arg Ala Leu Val Asn Tyr Asp Glu Val Ser Glu
 85 90 95
 Ser Gly Gly Arg Tyr Asp Lys Ala Val Gln Val Asn Trp Ile Asp Ser
 100 105 110
 Ile Leu Thr Lys Ser Ile Ala Pro Asp Leu Gly Ser Glu Asn Asp Val
 115 120 125
 Val Tyr Gly Thr Asp Pro Val Glu Ile Val Asn Asp Trp Val Thr Ile
 130 135 140
 Ala Glu Asp Gly Tyr Leu Thr Leu Arg Phe Arg Thr Lys Trp Gly Asp
 145 150 155 160
 Tyr Asn Lys Ala His Phe Val Asn Leu Leu Leu Gly Gln Asn Pro Ser
 165 170 175
 Asp Pro Tyr Glu Val Glu Phe Arg His Asn Ala Tyr Gly Asp Thr Tyr
 180 185 190
 Gly Thr Val Gly Asp Gly Leu Val Ala Phe Lys Leu Val Gly Leu Pro
 195 200 205
 Asp Thr Asn Gly Lys Thr Val Pro Leu Thr Leu Lys Trp Lys Ser Phe
 210 215 220
 Ser Gly Asp Lys Ser Ala Val Phe Asp Tyr Cys Thr Gln Lys Asn Val
 225 230 235 240
 Thr Pro Ala Lys Pro Ala Ile Val Ser Val Arg Ser Asn Leu Asn Leu
 245 250 255

Lys

<210> 10032
 <211> 290
 <212> PRT
 <213> B.fragilis

<400> 10032

Leu Lys Glu Lys Gly Val Asp Ser Ser Leu Asp Thr Ile Arg Asp Glu
 1 5 10 15
 Ile Ile Gly Met Asn Ile Phe Asn Ser Val Phe Val Asp Cys Thr Ala
 20 25 30
 Ser Pro Asp Ile Ala Ser Leu Tyr Lys Asp Phe Leu Gln His Asn Ile
 35 40 45
 Ser Val Val Ala Ala Asn Lys Ile Ala Ala Ser Ser Ala Tyr Glu Asn
 50 55 60

5900

Tyr Arg Glu Leu Lys Leu Ile Ala Arg Gln Arg Gly Val Lys Tyr Leu
 65 70 75 80
 Phe Glu Thr Asn Val Gly Ala Gly Leu Pro Ile Ile Asn Thr Ile Asn
 85 90 95
 Asp Leu Ile His Ser Gly Asp Lys Ile Leu Lys Ile Glu Ala Val Leu
 100 105 110
 Ser Gly Thr Leu Asn Tyr Ile Phe Asn Lys Ile Ser Ala Asp Val Pro
 115 120 125
 Phe Ser Arg Thr Ile Lys Met Ala Gln Glu Glu Arg Tyr Ser Glu Pro
 130 135 140
 Asp Pro Arg Ile Asp Leu Ser Gly Lys Asp Val Ile Arg Lys Leu Val
 145 150 155 160
 Ile Leu Ala Arg Glu Ala Gly Tyr Lys Leu Glu Gln Glu Asp Val Val
 165 170 175
 Lys Asn Leu Phe Val Pro Asn Asp Phe Phe Glu Gly Ser Leu Glu Asp
 180 185 190
 Phe Trp Lys Lys Val Pro Ser Leu Asp Ala Asp Phe Glu Ala Arg Arg
 195 200 205
 Lys Val Leu Glu Ser Glu Asn Lys His Trp Arg Phe Val Ala Lys Leu
 210 215 220
 Glu Asn Gly Lys Ala Ser Val Gly Leu Gln Glu Val Asp Arg Asn His
 225 230 235 240
 Pro Phe Tyr Gly Leu Glu Gly Ser Asn Asn Ile Ile Leu Leu Thr Thr
 245 250 255
 Glu Arg Tyr Lys Glu Tyr Pro Met Met Ile Gln Gly Tyr Gly Ala Gly
 260 265 270
 Ala Gly Val Thr Ala Ala Gly Val Phe Ala Asp Ile Met Ser Ile Ala
 275 280 285
 Asn Val
 290

<210> 10033
 <211> 447
 <212> PRT
 <213> B.fragilis

<400> 10033
 Pro Ala Arg Lys Pro Asp Ser Ser Gly Ala Leu Pro Gly Phe Glu Arg
 1 5 10 15
 Ala Pro Leu Trp Ile Ser Val Thr Gly Gly Ile Cys Ile Leu Thr Gly
 20 25 30
 Leu Val Leu Leu Val Trp Leu Pro Arg Ser Ile Asn Arg Pro Val Lys
 35 40 45
 Glu Leu Thr Cys Gly Ile Leu Glu Ile Ala Asn His Asn Tyr Glu Lys
 50 55 60
 Arg Leu Asp Met Arg Gly Tyr Glu Glu Phe Arg Glu Val Ser Asp Ser
 65 70 75 80
 Phe Asn Arg Met Ala Glu Lys Leu Thr Glu Tyr Arg Asp Ser Thr Leu
 85 90 95
 Ala Asp Ile Leu Ser Ala Lys Lys Phe Leu Glu Ala Val Val Asn Ser
 100 105 110
 Ile His Glu Pro Ile Ile Gly Leu Asn Thr Glu Arg Glu Ile Leu Phe
 115 120 125
 Ile Asn Asn Glu Ala Leu Asn Val Leu Asn Met Lys Arg Glu Asn Val
 130 135 140
 Ile Arg Lys Ser Ala Glu Glu Leu Ser Leu Lys Asn Asp Leu Leu Arg
 145 150 155 160
 Arg Leu Ile Arg Glu Leu Val Thr Pro Gly Glu Lys Asn Glu Pro Leu
 165 170 175

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Lys Ile Tyr Ala Asp Asn Lys Glu Ser Tyr Phe Gln Ala Ser Tyr Ile
      180                      185                      190
Pro Ile Glu Asn Ala Ala Ala Glu Glu Gly Glu Ala Arg Asn Leu Gly
      195                      200                      205
Asp Val Ile Leu Leu Lys Asn Ile Thr Glu Phe Lys Glu Leu Asp Ser
      210                      215                      220
Ala Lys Thr Thr Phe Ile Ser Thr Ile Ser His Glu Leu Lys Thr Pro
      225                      230                      235                      240
Ile Ser Ala Ile Met Met Ser Leu Gln Leu Leu Glu Asp Lys Arg Val
      245                      250                      255
Gly Ser Leu Asn Gly Glu Gln Glu Gln Leu Ser Lys Asn Ile Arg Asp
      260                      265                      270
Asn Ser Gln Arg Leu Leu Asp Ile Thr Gly Glu Leu Leu Asn Met Thr
      275                      280                      285
Gln Val Glu Ala Gly Lys Leu Gln Met Met Pro Lys Ile Thr Lys Pro
      290                      295                      300
Ile Glu Leu Ile Glu Tyr Ala Ile Lys Ala Asn Gln Val Gln Ala Asp
      305                      310                      315                      320
Lys Phe Asn Ile Gln Ile Glu Val Asp Tyr Pro Gln Glu Lys Ile Pro
      325                      330                      335
Lys Leu Phe Val Asp Ser Glu Lys Ile Ala Trp Val Leu Thr Asn Leu
      340                      345                      350
Leu Ser Asn Ala Ile Arg Tyr Ser Lys Glu Asn Gly Arg Val Val Ile
      355                      360                      365
Gly Val Arg His Lys Lys Glu Tyr Ile Glu Leu Tyr Val Gln Asp Phe
      370                      375                      380
Gly Lys Gly Ile Asp Pro Arg Tyr His Gln Ser Ile Phe Asp Arg Tyr
      385                      390                      395                      400
Phe Arg Val Pro Gly Thr Lys Val Gln Gly Ser Gly Leu Gly Leu Ser
      405                      410                      415
Ile Ser Lys Asp Phe Val Glu Ala His Gly Gly Thr Leu Thr Val Gln
      420                      425                      430
Ser Glu Pro Gly Lys Gly Ser Cys Phe Val Ile Arg Leu Lys Ala
      435                      440                      445

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<210> 10034

<211> 798

<212> PRT

<213> B.fragilis

<400> 10034

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Ile Met Leu Phe Lys Arg Ile Arg Val Thr Ile Leu Leu Leu Gly Met
1      5      10      15
Leu Ser Phe Ser Leu Arg Val Ser Ala Gln Ile Val Leu Lys His Ser
      20      25      30
Asp Trp Glu Trp Lys Ile Ser Glu Thr Gly Cys Ala Glu Gln Leu Ile
      35      40      45
Phe Lys Gly Gly Lys Arg Asn Asp Thr Ile Pro Phe Phe Arg Glu Gly
      50      55      60
Glu His Ala Gly Pro Ser Phe Tyr Ala Lys Arg Glu Gly Lys Glu Val
      65      70      75      80
Arg Ala Ser Trp Ile Pro Asp Gly Tyr Ala Ser Tyr Arg Ser Glu Ile
      85      90      95
Asp Gly Val Leu Cys Arg Ile Ser Tyr Ile Lys Asp His Gly Gln Pro
      100     105     110
Ala Leu Arg Val Lys Leu Thr Asn Asn Ser Pro Val Pro Tyr Gln Pro
      115     120     125
Gln Lys Ala Gly Leu Lys Leu Gly Ile Asp Thr Tyr Met Asp Lys Phe
      130     135     140

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Pro	Asp	Trp	Phe	Gly	Lys	Tyr	Phe	Pro	Thr	Leu	Met	Arg	Asn	Glu	Lys
145					150					155					160
Thr	His	Phe	Tyr	Gly	Tyr	Leu	Gln	Thr	Pro	Ser	Gly	His	Thr	Leu	Gly
				165					170					175	
Leu	Val	Ser	Gln	Gln	Pro	Val	Ala	Ser	Trp	Ser	Val	Asp	Tyr	Asn	Leu
			180					185					190		
Gly	Tyr	Gln	Asp	Pro	Val	Pro	Phe	Trp	Phe	Met	Gly	His	Arg	Ile	Glu
	195						200					205			
Ser	Leu	Asn	Leu	Asp	Leu	Leu	Asn	Glu	Leu	Pro	Leu	Pro	Ala	Arg	His
	210					215				220					
Pro	Gln	Asn	Leu	Tyr	Glu	Leu	Lys	Gln	Gly	Glu	Ser	Lys	Glu	Trp	Ile
225					230					235					240
Phe	Thr	Phe	Val	Asn	Val	Gly	Asn	Leu	Asp	Asn	Leu	Glu	Arg	Ala	Ile
				245					250					255	
Ala	Arg	Val	Ser	Asp	Ile	Pro	Leu	Ile	Asp	Ile	Arg	Gln	Thr	Ser	His
			260					265					270		
Ala	Ala	Arg	Glu	Glu	Ala	Ser	Phe	Thr	Leu	Thr	Ala	Asp	Asn	Pro	Asn
		275					280					285			
Val	Lys	Val	Thr	Asn	Asp	Ala	Gly	Lys	Glu	Leu	Pro	Val	Val	Leu	Thr
	290					295					300				
Lys	Thr	Lys	Gly	Asn	Arg	Trp	Ile	Gly	Lys	Val	Arg	Leu	Glu	Asp	Ala
305					310						315				320
Gly	Leu	Tyr	Thr	Leu	Ser	Val	Arg	Ser	Gly	Asn	Lys	Val	Ala	Glu	Ala
				325					330					335	
Ile	Trp	Thr	Val	His	His	Pro	Trp	Gln	Trp	Val	Met	Glu	Lys	Ala	Arg
			340					345					350		
Glu	Asn	Ala	Ala	Arg	Tyr	His	Gln	Lys	Pro	Thr	Ser	His	Ala	Glu	Ser
		355					360					365			
Trp	Tyr	Gly	Phe	Tyr	Ser	Ala	Phe	Leu	Ala	Ala	Arg	Tyr	Phe	Pro	Asn
	370					375					380				
Glu	Ser	Leu	Asp	Lys	Gln	Leu	Ser	Asn	Tyr	Phe	Asp	Arg	Leu	Tyr	Asn
385					390					395					400
Lys	Leu	His	Asp	Ser	Val	Lys	Val	Glu	Pro	Leu	Tyr	Phe	Lys	Thr	Arg
			405						410					415	
Ile	Gln	Asn	Thr	Ser	Thr	Thr	Ile	Gly	Met	Leu	Val	Asp	Lys	Tyr	Glu
		420						425					430		
Ala	Gln	Gly	Asp	Leu	Glu	Asp	Leu	Lys	Lys	Ala	Ser	Lys	Leu	Ala	Asp
	435						440					445			
Trp	Met	Ile	Ala	Thr	Ser	Gln	Arg	Glu	Asn	Gly	Ala	Tyr	Tyr	Asn	His
	450					455					460				
Gly	Thr	Val	Tyr	Thr	Ser	Val	Ile	Tyr	Ile	Ala	Lys	Ser	Val	Leu	Glu
465					470					475					480
Leu	Ala	Val	Leu	Glu	Arg	Lys	Leu	Gly	Glu	Gln	Asp	Leu	Phe	Trp	Arg
				485					490					495	
Thr	Cys	Ala	Asp	Arg	His	Phe	Leu	Ser	Ala	Lys	Lys	Ala	Val	Asp	Gln
			500					505					510		
Leu	Val	Ala	Ser	Gln	Gly	Asp	Phe	Gln	Thr	Glu	Gly	Glu	Leu	Thr	Phe
	515						520					525			
Glu	Asp	Gly	Met	Ile	Ser	Cys	Ser	Ala	Leu	Gln	Ile	Gly	Met	Met	Gly
	530					535					540				
Val	Ile	Glu	Gln	Asp	Ala	Val	Ala	Arg	Lys	Tyr	Tyr	Thr	Asp	Ala	Met
545					550					555					560
Leu	Lys	Ile	Leu	Asn	Ser	His	Asp	Cys	Leu	Thr	Gln	Leu	Arg	Val	Pro
				565					570					575	
Asp	Gly	Arg	Arg	Arg	Gln	Gly	Thr	Met	Arg	Tyr	Trp	Glu	Ala	Gln	Tyr
			580					585					590		
Asp	Val	Gln	Met	Leu	Pro	Asn	Met	Phe	Asn	Ser	Pro	His	Gly	Trp	Ser
	595					600						605			
Gly	Trp	Arg	Ala	Tyr	Ala	Thr	Tyr	Tyr	Ala	Tyr	Leu	Leu	Thr	Gly	Asp

610	615	620
Glu Lys Trp Leu Glu	Gln Thr Phe Asn Ala Met Gly	Ala Phe Ala Asn
625	630	635
Leu Ile Asp Tyr Lys	Thr Gly Gln Leu Arg Trp	Ala Phe Val Val Asp
645	650	655
Pro His Leu Glu Val	Glu Gln Ala Cys Ser Ala Asp	Thr Lys Leu Asp
660	665	670
Phe Ser Asp Leu Ser	Phe Gly Asn Pro His Pro	Lys Leu Tyr Asp Thr
675	680	685
Arg Lys Phe Val Ile	Gly Glu Gln Tyr Val Asn Met	Ile Ser Asp Trp
690	695	700
Gln Thr Val Asn Thr	Gln Asp Asn Asp Val His Glu	Leu Phe Lys Cys
705	710	715
Ile Gly Glu Ala Val	Leu Thr Asn Ala Phe Val	Ile Glu Arg Pro Asn
725	730	735
Gly Glu Val Val Gly	Tyr Asn Cys Arg Val Thr	Arg Lys Gly Asn Thr
740	745	750
Leu Thr Val Lys Ala	Asp Glu Lys Gln Ile Val	Asn Leu His Cys Asn
755	760	765
Leu Lys His Ser Phe	Ser Val Ser Phe Asp Gly	Lys Thr Cys Ser Leu
770	775	780
Pro Glu Gly Tyr Cys	Asp Trp Ala Phe Gly	Gln Ser Gly Tyr
785	790	795

<210> 10035
 <211> 208
 <212> PRT
 <213> B.fragilis

<400> 10035
Lys Gln Asp Leu Arg Ser Pro Ser Glu Lys Tyr Ser Ile Met Asn Gln
1 . 5 10 15
Phe Leu Asp Phe Asp Gln Lys Leu Tyr Ala Glu Leu Arg Lys Gly Ser
20 25 30
Glu His Ala Phe Val Thr Val Phe Glu Arg Tyr Asn Arg Leu Leu Tyr
35 40 45
Ala Leu Ala Tyr Arg Tyr Phe Lys Ser Gly Glu Glu Ala Glu Asp Ala
50 55 60
Val Gln Tyr Thr Phe Met Lys Leu Trp Glu Gln Arg Ser Ser Phe Glu
65 70 75 80
Phe Gln Ser Gly Ile Arg Ser Leu Leu Phe Thr Ile Leu Lys Asn Tyr
85 90 95
Ile Met Asn Glu Leu Arg His Arg Gln Ile Val Phe Glu Lys His Tyr
100 105 110
Glu Met Ala Gln Arg Asn Glu Glu Ala Asp Asp Ser Phe Leu Lys Asn
115 120 125
Phe Glu Asp Lys Asp Phe Arg Glu His Leu Arg Thr Ala Ile Gly Lys
130 135 140
Leu Pro Pro Gln Lys Gln Lys Ile Cys Arg Leu Lys Ile Glu Lys Gly
145 150 155 160
Leu Ser Asn Gln Glu Ile Ala Asp Glu Met His Ile Thr Val Pro Thr
165 170 175
Val Lys Ser His Tyr Thr Gln Ala Ile Lys Ile Leu Arg Ala Glu Ile
180 185 190
Glu Ser Leu Ile Val Leu Leu His Val Leu Trp Ile His Phe Leu Glu
195 200 205

<210> 10036
 <211> 336

<212> PRT

<213> B.fragilis

<400> 10036

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Arg Lys Val Glu Met Lys Ile Asp Asp Ala Ile Ile Asp Lys Val Leu
1      5      10      15
Asn Asn Glu Ala Ser Val Glu Glu Ala Gly Leu Val Ala Glu Trp Phe
20      25      30
Ala Thr Glu Glu Gly Ser Glu Tyr Leu Ser Gly Arg Leu Glu Ser Glu
35      40      45
Ser Ala Arg Leu Thr Glu Glu Arg Ala Arg Glu Trp Leu Asp His Pro
50      55      60
Val Pro Glu Glu Arg Met Arg Glu Arg Phe Ile Gly Gln Ile Lys Pro
65      70      75      80
Glu Lys Lys Ile Val Ser Tyr Arg Arg Val Leu Ile Ala Ala Ala Val
85      90      95
Leu Ile Pro Phe Leu Phe Leu Ser Ile Ser Leu Trp Phe Leu Ala Asp
100     105     110
Arg Thr Gly Val Phe Ser Ala Thr Glu Tyr Ala Glu Leu Lys Val Pro
115     120     125
Cys Gly Glu Gln Met Gln Val Leu Gln Asp Gly Thr Val Ile Gln
130     135     140
Leu Asn Ser Asp Thr Arg Leu Arg Tyr Pro Lys Lys Phe Gly Leu Phe
145     150     155     160
Ser Arg Ser Val Glu Leu Trp Gly Glu Gly Phe Phe Val Val Ala Lys
165     170     175
Asp Lys Lys Arg Pro Phe Ile Ile Asp Leu Lys Gly Val Glu Val Lys
180     185     190
Val Thr Gly Thr Lys Phe Asn Val Lys Ala Tyr Pro Ser Glu Pro Asn
195     200     205
Val Trp Val Thr Leu Glu Glu Gly Gly Val Leu Leu Lys Asp Thr Lys
210     215     220
Asn Lys Glu Tyr Pro Leu Val Pro Gly Glu Ser Ala Glu Tyr Asn Arg
225     230     235     240
Thr Ser Gly Ile Cys Gln Ile Thr Lys Pro Asp Asp Met Ser Gln Ile
245     250     255
Ser Ser Trp Arg Ser Asn Ser Leu Asn Phe Tyr Leu Thr Pro Leu Arg
260     265     270
Asp Ile Ile Lys Val Met Glu Arg Gln Tyr Asp Val His Phe Val Val
275     280     285
Arg Asp Ser Thr Leu Leu Asn Asn Arg Phe Thr Leu Ser Thr Ser Lys
290     295     300
Val Asn Val Asp Asp Val Leu Arg Asp Leu Glu Ala Val Ser Trp Ile
305     310     315     320
Arg Phe Leu Gln Thr Glu Asp Gly Val Phe Glu Ile Gln Lys Glu Lys
325     330     335

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<210> 10037

<211> 401

<212> PRT

<213> B.fragilis

<400> 10037

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Asn Arg Tyr Glu Met Asn Gln Leu Ser Asp Arg Leu Asn Ser Leu Ser
1      5      10      15
Pro Ser Ala Thr Leu Ala Met Ser Gln Lys Ser Ala Glu Leu Lys Ala
20      25      30
Gln Gly Val Asp Val Ile Asn Leu Ser Val Gly Glu Pro Asp Phe Asn
35      40      45

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Thr Pro Asp His Ile Lys Glu Ala Ala Lys Lys Ala Val Asp Asp Asn
 50          55          60
Phe Ser Arg Tyr Ser Pro Val Pro Gly Tyr Pro Ala Leu Arg Asn Ala
65          70          75          80
Ile Val Glu Lys Leu Lys Lys Glu Asn Gly Leu Glu Tyr Thr Ala Ala
      85          90          95
Gln Ile Ser Cys Ala Asn Gly Ala Lys Gln Ser Val Cys Asn Thr Ile
    100        105        110
Met Val Leu Val Asn Pro Gly Asp Glu Val Ile Val Pro Ala Pro Tyr
    115        120        125
Trp Val Ser Tyr Pro Glu Met Val Lys Leu Ala Glu Gly Thr Pro Val
    130        135        140
Ile Val Thr Ala Gly Ile Glu Gln Asp Phe Lys Ile Thr Pro Ala Gln
    145        150        155        160
Leu Glu Ala Ala Ile Thr Pro Lys Thr Lys Ala Leu Ile Leu Cys Ser
      165        170        175
Pro Ser Asn Pro Thr Gly Ser Val Tyr Ser Lys Glu Glu Leu Ala Gly
    180        185        190
Leu Ala Ala Val Leu Ala Lys Tyr Pro Gln Ile Ile Val Val Ala Asp
    195        200        205
Glu Ile Tyr Glu His Ile Asn Tyr Ile Gly Lys His Gln Ser Ile Ala
    210        215        220
Gln Phe Pro Glu Met Lys Asp Arg Thr Val Ile Val Asn Gly Val Ser
    225        230        235        240
Lys Ala Tyr Ala Met Thr Gly Trp Arg Ile Gly Phe Ile Ala Gly Pro
      245        250        255
Glu Trp Ile Val Lys Ala Cys Asn Lys Leu Gln Gly Gln Tyr Thr Ser
    260        265        270
Gly Pro Cys Ser Val Ser Gln Lys Ala Ala Glu Ala Ala Tyr Thr Gly
    275        280        285
Ser Gln Ala Pro Val Glu Glu Met Arg Gln Ala Phe Glu Arg Arg Arg
    290        295        300
Asp Leu Ile Val Lys Leu Ala Lys Glu Val Pro Gly Phe Glu Val Asn
    305        310        315        320
Val Pro Glu Gly Ala Phe Tyr Leu Phe Pro Lys Cys Ser Ser Phe Phe
      325        330        335
Gly Lys Ser Ala Gly Asp Arg Lys Ile Glu Asn Ser Asp Asp Leu Ala
    340        345        350
Met Tyr Leu Leu Glu Asp Ala His Val Ala Cys Val Gly Gly Thr Ser
    355        360        365
Phe Gly Ala Pro Glu Cys Ile Arg Met Ser Tyr Ala Thr Ser Asp Glu
    370        375        380
Asn Ile Val Glu Ala Ile Arg Arg Ile Lys Glu Ala Leu Ala Lys Leu
    385        390        395        400
Lys

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<210> 10038
 <211> 527
 <212> PRT
 <213> B.fragilis

<400> 10038
 Ile Ser Ile Cys Met Lys Val Met Lys Phe Gly Gly Thr Ser Val Gly
 1 5 10 15
 Ser Val Asn Ser Ile Leu Ser Val Lys Lys Ile Val Glu Ser Ala Gly
 20 25 30
 Glu Pro Val Ile Val Val Val Ser Ala Leu Gly Gly Ile Thr Asp Gln
 35 40 45

Leu Ile Ser Thr Ser Arg Met Ala Ala Met Gly Asp Ala Ala Tyr Glu
 50 55 60
 Gly Ala Tyr Arg Glu Ile Val Arg Arg His Glu Glu Met Val Gln Gly
 65 70 75 80
 Val Ile Pro Ala Gly Glu Thr Gln Thr Leu Leu His Tyr Gln Val Asn
 85 90 95
 Glu Leu Leu Asp Glu Leu Lys Asp Ile Phe Gln Gly Ile Tyr Leu Ile
 100 105 110
 Lys Asp Leu Ser Pro Lys Thr Ser Asp Thr Ile Val Ser Tyr Gly Glu
 115 120 125
 Arg Leu Ser Ser Leu Ile Ala Ser Arg Leu Ile Gln Gly Ala Val Trp
 130 135 140
 Phe Asp Ser Arg Thr Phe Ile Lys Thr Glu Lys Lys His Asn Lys His
 145 150 155 160
 Asn Lys His Thr Leu Asp Thr Glu Leu Thr Asn Arg Leu Val Arg Glu
 165 170 175
 Ala Phe Lys Glu Ile Pro Arg Val Ser Leu Val Pro Gly Phe Ile Ser
 180 185 190
 Ser Asp Lys Val Ser Gly Asp Val Thr Asn Leu Gly Arg Gly Gly Ser
 195 200 205
 Asp Tyr Thr Ala Ala Val Ile Ala Ala Ala Leu Asp Ala Asp Ser Leu
 210 215 220
 Glu Ile Trp Thr Asp Val Asp Gly Phe Met Thr Ala Asp Pro Arg Val
 225 230 235 240
 Ile Ser Thr Ala Tyr Thr Ile Ser Glu Leu Thr Tyr Val Glu Ala Thr
 245 250 255
 Glu Leu Cys Asn Phe Gly Ala Lys Val Val Tyr Pro Pro Thr Ile Tyr
 260 265 270
 Pro Val Cys His Lys Asn Ile Pro Ile Leu Ile Lys Asn Thr Phe Asn
 275 280 285
 Pro Asp Ala Gln Gly Thr Val Ile Lys Gln His Val Asp His Thr Lys
 290 295 300
 Ser Lys Ala Ile Lys Gly Ile Ser Ser Ile Asn Asp Thr Ser Leu Ile
 305 310 315 320
 Thr Val Gln Gly Leu Gly Met Val Gly Val Ile Gly Val Asn Tyr Arg
 325 330 335
 Ile Phe Lys Ala Leu Ala Lys Asn Gly Ile Ser Val Phe Leu Val Ser
 340 345 350
 Gln Ala Ser Ser Glu Asn Ser Thr Ser Ile Gly Val Arg Asn Ala Asp
 355 360 365
 Ala Asp Leu Ala Cys Glu Val Leu Asn Glu Glu Phe Ala Lys Glu Ile
 370 375 380
 Glu Met Gly Glu Ile Ser Pro Ile Gln Ala Glu Lys Asn Leu Ala Thr
 385 390 395 400
 Val Ala Ile Val Gly Glu Asn Met Lys His Thr Pro Gly Ile Ala Gly
 405 410 415
 Lys Leu Phe Gly Thr Leu Gly Arg Asn Gly Ile Asn Val Ile Ala Cys
 420 425 430
 Ala Gln Gly Ala Ser Glu Thr Asn Ile Ser Phe Val Val Asp Ser Lys
 435 440 445
 Ser Leu Arg Lys Ser Leu Asn Val Ile His Asp Ser Phe Phe Leu Ser
 450 455 460
 Glu Tyr Gln Val Leu Asn Leu Phe Ile Cys Gly Val Gly Thr Val Gly
 465 470 475 480
 Gly Ser Leu Val Glu Gln Ile Arg Gln Gln Lys Lys Leu Met Val
 485 490 495
 Glu Asn Gly Leu Lys Leu His Val Val Gly Ile Ile Asp Ala Thr Lys
 500 505 510
 Ala Met Phe Ser Arg Ala Gly Phe Asp Leu Ala Asn Tyr Arg Glu

515

520

525

<210> 10039
 <211> 212
 <212> PRT
 <213> B.fragilis

<400> 10039
 Ile His Arg Leu Met Met Asn His Gln Pro Glu Ile Ala Ile Val Glu
 1 5 10 15
 Ala Asn Thr Leu Thr Ser Leu Gly Leu Lys Thr Ile Leu Glu Arg Met
 20 25 30
 Ile Pro Met Ala Val Ile Arg Thr Phe His Ser Phe Gly Glu Leu Thr
 35 40 45
 Asp Asp Thr Pro Asp Met Tyr Ala His Tyr Phe Ile Ser Ala Gln Ile
 50 55 60
 Tyr Val Glu His Asn Ala Phe Phe Leu Pro Arg Lys Arg Lys Thr Ile
 65 70 75 80
 Val Leu Ala Gly Asp Ser His Gln Phe Gln Leu Ser Gly Val Pro Ile
 85 90 95
 Leu Asn Ile Tyr Gln Ala Glu Glu Gln Leu Val Lys Asp Ile Leu Lys
 100 105 110
 Leu His Gln His Ala His His Asp Gly Tyr Pro Val Lys Asp Met Pro
 115 120 125
 Pro Thr Pro Pro Thr Thr Gly His Glu Leu Ser Ala Arg Glu Ile Glu
 130 135 140
 Val Leu Val Leu Ile Thr Lys Gly Leu Ile Asn Lys Glu Ile Ala Asp
 145 150 155 160
 Lys Leu Asn Ile Gly Leu Thr Thr Val Ile Thr His Arg Lys Asn Ile
 165 170 175
 Thr Glu Lys Leu Gly Ile Lys Ile Gly Leu Gly Pro Asn His Leu Cys
 180 185 190
 Gly Asp Glu Arg Val Cys Gly Gly Arg Pro His Ile Ala Asn Tyr Val
 195 200 205
 Val Asn Pro Trp
 210

<210> 10040
 <211> 193
 <212> PRT
 <213> B.fragilis

<400> 10040
 Ser Phe Lys Trp Ile Ile Met His Ser Glu Ile Ala Glu Glu Lys Leu
 1 5 10 15
 Leu Val Ser Gln Phe Ser Gln Gly Ser His Ile Ala Phe Lys Ala Leu
 20 25 30
 Phe Met Arg Tyr Tyr Pro Lys Val Arg Ser Phe Ile Met Gly Leu Val
 35 40 45
 Lys Ser Glu Ser Glu Ala Glu Asp Leu Thr Gln Glu Val Phe Leu Lys
 50 55 60
 Leu Trp Thr His Arg Glu Lys Phe Cys Glu Val Glu Val Phe Gly Thr
 65 70 75 80
 Tyr Leu Tyr Val Leu Thr Lys Asn Thr Thr Phe Asn Tyr Leu Arg Ser
 85 90 95
 Arg Gln Asn Arg Gln Asp Ser Gln Gly Thr Glu Trp Val Glu Glu Ser
 100 105 110
 Thr Asp Thr Pro Tyr Glu Glu Leu Val Ala Lys Asp Leu Gln Leu
 115 120 125

Leu Ile Asp Met Val Val Glu Asn Met Pro Pro Gln Arg Gln Met Ile
 130 135 140
 Phe Arg Leu Asn Arg Glu Ala Gly Leu Thr Asn Ala Glu Ile Ala Glu
 145 150 155 160
 Lys Leu Gln Ile Ser Lys Lys Thr Val Glu Asn His Leu Asn Leu Ala
 165 170 175
 Leu Lys Glu Leu Lys Asn Ala Leu Leu Phe Phe Ile Phe Leu Tyr Leu
 180 185 190
 Cys

<210> 10041

<211> 486

<212> PRT

<213> B.fragilis

<400> 10041

Thr Gly Lys Cys His Leu Phe Ile Leu Ile Lys Gln Thr Lys Met Lys
 1 5 10 15
 Arg Arg Gln Ile Arg Lys Lys Asn Arg Ile Thr Lys Lys Asn Arg Glu
 20 25 30
 Met Lys Ile Tyr Lys Phe Gly Lys Ile Pro Thr Gly Ser Val Gln Gly
 35 40 45
 Met Lys Gly Met Leu Arg Leu Ile Asp Asn Ser Ile Pro Gln Ile Ile
 50 55 60
 Val Leu Ser Ala Thr Thr Glu Thr Thr Glu Arg Leu Ala Gly Ile Ala
 65 70 75 80
 Ala His Leu Phe Asn Arg Asp Thr Glu Gln Ala His Asp Glu Ile Ser
 85 90 95
 Arg Leu Glu Phe Arg Phe Ile Asp Phe Ala Asn Glu Leu Phe Asn Asp
 100 105 110
 Glu Ser Ile Lys Gln Gln Ala Val Asp Ser Ile Ile Asp Arg Phe Arg
 115 120 125
 Thr Leu Trp Asn Phe Thr Arg Gln Arg Phe Thr Ser Val Asp Glu Lys
 130 135 140
 Asp Ile Leu Ala Gln Gly Glu Phe Ile Ser Ser Met Leu Val Ser Leu
 145 150 155 160
 Tyr Leu Lys Glu Gln Gly Ile Asn Asn Arg Leu Leu Asn Ser Leu Asp
 165 170 175
 Phe Met Arg Leu Ala Pro Glu Glu Glu Pro Asp Met Glu Tyr Ile Gly
 180 185 190
 Thr Lys Leu His Leu Leu Leu Ala Glu His Lys Ser Thr Asn Val Phe
 195 200 205
 Leu Thr Gln Gly His Leu Cys Arg Asn Ala Tyr Asn Glu Thr Cys Tyr
 210 215 220
 Leu Lys Gln Gly Gly Asp Asp Val Ser Ala Thr Leu Ile Gly Ala Ala
 225 230 235 240
 Leu Gln Ala Gln Glu Val Cys Leu Trp Thr Asp Ser Lys Glu Leu His
 245 250 255
 Ser Cys Asp Pro Arg Phe Val Lys His Pro Ala Met Val Lys Gln Leu
 260 265 270
 Ser Phe Asp Glu Ala Glu Gln Leu Ala Tyr Cys Gly Trp Thr Gly Phe
 275 280 285
 Asn Pro His Cys Ile Leu Pro Ala Arg Glu Asn Asn Ile Pro Ile Arg
 290 295 300
 Leu Leu Cys Ser Met Glu Pro Ala Glu Gly Gly Thr Leu Ile Ser Asn
 305 310 315 320
 Ser Gln Ser Gly Glu Asn Ile Lys Ala Ile Thr Ala Arg Asp Asn Ile
 325 330 335

Tyr Tyr Ile Lys Phe Gln Ser Asn Arg Thr Leu Arg Pro Tyr Leu Phe
 340 345 350
 Ile Ser Lys Ile Phe Asp Thr Phe Ala Lys Tyr His Thr Ser Leu Cys
 355 360 365
 Leu Phe Ala Ser Ser Gly Ser Asp Val Ser Val Ala Ile Asn Asp Lys
 370 375 380
 Glu Arg Leu Ser His Ile Leu His Glu Leu Ser Arg Tyr Ala Val Thr
 385 390 395 400
 Val Val Lys Asp His Met Cys Ile Leu Ser Ala Ile Gly Asn Met Gln
 405 410 415
 Trp Gln Cys Ala Gly Phe Glu Ala Arg Ile Ile Asn Ala Leu Ala Thr
 420 425 430
 Ile Pro Ile Arg Met Ile Ser Tyr Gly Ser Asn Asn Asn Asn Val Ser
 435 440 445
 Leu Val Ile Arg Ala Glu Asp Lys Arg Glu Ala Leu Gln Arg Leu Asn
 450 455 460
 Asp Thr Leu Phe Ala Pro Cys His Ala Asn Pro Ser Gln Ile His Val
 465 470 475 480
 Pro Thr Leu Lys His Ser
 485

<210> 10042

<211> 234

<212> PRT

<213> B.fragilis

<400> 10042

Thr Asp Arg Cys Ile Gly Phe Ala Pro Ser Glu Pro Phe Asn Leu Trp
 1 5 10 15
 Val Arg Arg Ser Asp Cys Ser Leu Cys Arg Asn Gln Val Asn Arg Phe
 20 25 30
 Gly Cys Gln Phe Ile Leu Leu Asn Ile Gln Ala Met Lys Thr Leu Leu
 35 40 45
 Lys Ser Ile Lys Ile Thr Leu Val Phe Cys Val Phe Phe Ser Val Phe
 50 55 60
 Tyr Ile Leu Val Leu Trp Leu Phe Ala Gln Val Ala Gly Pro Asn Arg
 65 70 75 80
 Gly Asn Ala Glu Val Thr Leu Asn Gly Lys Val Val Gly Ala Ala
 85 90 95
 Asn Val Gly Gln Thr Phe Thr Glu Glu Lys Tyr Phe Trp Gly Arg Pro
 100 105 110
 Ser Cys Ala Gly Asp Gly Tyr Asp Ala Thr Ser Ser Ala Gly Ser Asn
 115 120 125
 Lys Gly Pro Thr Asn Pro Glu Tyr Leu Ala Glu Val Glu Ala Arg Ile
 130 135 140
 Asp Thr Phe Leu Ile His His Pro Tyr Leu Ala Arg Lys Asp Val Pro
 145 150 155 160
 Ala Glu Met Val Thr Ala Ser Ala Ser Gly Leu Asp Pro Asp Ile Thr
 165 170 175
 Pro Gln Ser Ala Tyr Val Gln Val Lys Arg Val Ala Gln Ala Arg Gly
 180 185 190
 Met Asp Val Glu Glu Val Arg Arg Val Val Asp Lys Ala Val Glu Lys
 195 200 205
 Pro Leu Leu Gly Ile Phe Gly Thr Glu Lys Val Asn Val Leu Lys Leu
 210 215 220
 Asn Ile Ala Leu Glu Glu Leu Lys Asn Arg
 225 230

<210> 10043

Val Tyr His Gln Ser Thr Phe Arg Asp Leu Leu Ile Glu Gly Leu Ser
 435 440 445
 Ala Thr Val Gly Leu Arg Leu Asp Tyr Glu Lys Asn Trp Met Lys Tyr
 450 455 460
 Asn Ser Gly Ser Thr Ile Asp Tyr Gln Phe Asn Met Thr Ser Pro Phe
 465 470 475 480
 Met Pro Val Arg Leu Glu Gln Thr Ser Ser Pro Arg Leu Asn Gly Lys
 485 490 495
 Phe Ser Asn Asp Tyr Leu Gln Leu Leu Pro Lys Phe Ala Leu Gln Tyr
 500 505 510
 Glu Trp Lys Lys Gly Asn Asn Val Tyr Ala Thr Val Ser Arg Gly Tyr
 515 520 525
 Arg Ser Gly Gly Tyr Asn Ile Gln Met Phe Ser Asp Leu Ile Gln Gly
 530 535 540
 Asn Met Gln Asn Asp Met Gln Gly Gln Ile Lys Ala Gly Thr Lys Gln
 545 550 555 560
 Ile Phe Asp Arg Leu Val Thr Gln Gly Met Pro Gln Ala Ile Ala Asp
 565 570 575
 Arg Ile Leu Ser Asn Ile Pro Asp Ala Gly Glu Asn Ala Asp Pro Lys
 580 585 590
 Ala Ser Thr Ile Tyr Lys Pro Glu Tyr Ser Trp Asn Tyr Glu Val Gly
 595 600 605
 Ser His Leu Thr Leu Trp Glu Gly Lys Leu Trp Met Asp Leu Ala Ala
 610 615 620
 Phe Leu Met Asp Thr Arg Asp Gln Gln Ile Ala Gln Phe Ala Lys Ser
 625 630 635 640
 Gly Leu Gly Arg Ile Thr Val Asn Ala Gly Lys Ser Arg Ser Tyr Gly
 645 650 655
 Ala Glu Ala Ala Leu Arg Ala Asn Leu Thr Asp Ala Leu Ser Met Asn
 660 665 670
 Ala Ser Tyr Gly Tyr Thr Tyr Ala Thr Phe Thr Asp Tyr Lys Thr Ile
 675 680 685
 Asp Arg Gly Gln Asn Glu Ile Ser Tyr Asp Gly Asn Tyr Val Pro Phe
 690 695 700
 Val Pro Lys His Thr Leu Asn Val Gly Gly Gln Tyr Ile Phe Arg Ile
 705 710 715 720
 Ala Pro Arg His Trp Leu Asp Arg Val Gln Val Asn Val Asn Tyr Asn
 725 730 735
 Gly Ala Gly Arg Ile Tyr Trp Thr Glu Gln Asn Asp Val Ser Gln Ser
 740 745 750
 Phe Tyr Gly Thr Leu Asn Ser Arg Val Ser Leu Ala Lys Gly Asn Gly
 755 760 765
 Gln Ile Asp Phe Trp Val Arg Asn Ala Leu Asp Lys Lys Tyr Ala Thr
 770 775 780
 Phe Tyr Phe Glu Ser Met Gly Asn Gly Phe Met Gln Lys Gly Arg Pro
 785 790 795 800
 Val His Phe Gly Val Asp Ile Arg Cys Arg Phe
 805 810

<210> 10044

<211> 385

<212> PRT

<213> B.fragilis

<400> 10044

Cys Pro Leu Phe Leu Arg Ile Lys Arg Ile Thr Phe Leu Thr Leu
 1 5 10 15
 Cys Cys His Leu Gln Asp Ile Ser Leu Ser Leu Gln Gln Tyr Ile Leu
 20 25 30

His Leu Arg Thr Met Asn Pro Ser Asp Thr Ser Ile Leu Leu Ile Tyr
 35 40 45
 Thr Gly Gly Thr Ile Gly Met Ile Glu Asn Pro Glu Thr Gly Ala Leu
 50 55 60
 Glu Asn Phe Asn Phe Glu Gln Leu Gln Lys His Val Pro Glu Leu Gln
 65 70 75 80
 Lys Phe Thr Phe Pro Ile Asp Ser Tyr Gln Phe Asp Pro Pro Met Asp
 85 90 95
 Ser Ser Asp Met Glu Pro Glu Ala Trp Arg Lys Leu Leu His Val Ile
 100 105 110
 Ser Glu His Tyr His Gln Tyr Thr Gly Phe Val Ile Leu His Gly Thr
 115 120 125
 Asp Thr Met Ala Phe Thr Ala Ser Ala Leu Ser Phe Met Leu Glu Gly
 130 135 140
 Leu Asp Lys Pro Val Ile Leu Thr Gly Ser Gln Leu Pro Ile Gly Val
 145 150 155 160
 Leu Arg Thr Asp Gly Lys Glu Asn Leu Met Thr Ser Ile Glu Ile Ala
 165 170 175
 Ser Ala Arg Asp Arg Ser Gly Asn Pro Met Val Pro Glu Val Cys Ile
 180 185 190
 Phe Phe Glu Asn Arg Leu Met Arg Gly Asn Arg Thr Thr Lys Met Ser
 195 200 205
 Ala Glu Asn Phe Asn Ala Phe Arg Ser Phe Asn Tyr Pro Val Leu Ala
 210 215 220
 Glu Ala Gly Ile His Ile Lys Tyr Asn Asn Val Gln Ile His Ile Glu
 225 230 235 240
 Gly Glu Lys Arg Glu Leu His Pro His Tyr Leu Leu Asp Thr Asn Ile
 245 250 255
 Ala Ile Leu Lys Leu Phe Pro Gly Ile Gln Glu Asn Val Val Ala Ala
 260 265 270
 Thr Leu Ala Ile Glu Gly Leu Lys Ala Val Val Leu Glu Thr Tyr Gly
 275 280 285
 Ser Gly Asn Ala Ser Arg Lys Glu Trp Phe Leu Arg Arg Leu Arg Asp
 290 295 300
 Ala Ser Glu Arg Gly Val Val Ile Val Asn Val Thr Gln Cys Ser Ala
 305 310 315 320
 Gly Ser Val Glu Met Gly Arg Tyr Glu Thr Gly Tyr His Leu Leu Lys
 325 330 335
 Ala Gly Ile Val Ser Gly His Asp Ser Thr Thr Glu Ser Ala Val Thr
 340 345 350
 Lys Leu Met Phe Leu Leu Gly His Gly Tyr Ser Pro Asp Glu Val Arg
 355 360 365
 Arg Arg Met Asn Glu Ser Met Ala Gly Glu Ile Ser Ile Asp Leu Ser
 370 375 380
 Lys
 385

<210> 10045

<211> 836

<212> PRT

<213> B.fragilis

<400> 10045

Glu Thr Ile Leu Lys Arg Lys Tyr Ile Gln Met Lys Ile Ile Ile Ile
 1 5 10 15
 Gly Gly Val Ala Gly Gly Ala Thr Thr Ala Ala Arg Ile Arg Arg Ser
 20 25 30
 Asp Glu Thr Ala Glu Ile Ile Leu Leu Glu Lys Gly Lys Tyr Ile Ser
 35 40 45

Tyr Ala Asn Cys Gly Leu Pro Tyr Tyr Ile Gly Asp Val Ile Glu Glu
 50 55 60
 Arg Glu Lys Leu Phe Val Gln Thr Pro Glu Ala Phe Gly Val Arg Phe
 65 70 75 80
 Arg Val Asp Val Arg Thr Glu Asn Glu Val Ile Phe Ile Asp Arg Lys
 85 90 95
 Lys Lys Thr Val Thr Val Arg Leu Lys Ser Glu Asp Thr Tyr Glu Glu
 100 105 110
 Ser Tyr Asp Lys Leu Leu Ile Ser Thr Gly Ala Ser Pro Val Arg Pro
 115 120 125
 Pro Leu Pro Gly Ile Asp Ser Thr Gly Ile Phe Thr Leu Arg Asn Val
 130 135 140
 Ala Asp Thr Asp Arg Ile Lys Ala Tyr Val Asn Asn Arg Pro Pro Arg
 145 150 155 160
 Arg Ala Val Val Ile Gly Ala Gly Phe Ile Gly Leu Glu Met Ala Glu
 165 170 175
 Asn Leu His Ala Leu Gly Ala Gln Val Ser Ile Val Glu Met Gly Asn
 180 185 190
 Gln Val Met Ala Pro Ile Asp Phe Ser Met Ala Ala Leu Val His Gln
 195 200 205
 His Leu Met Glu Lys Gly Val Asn Leu Tyr Leu Glu Gln Ala Val Ala
 210 215 220
 Ser Phe Glu Gln Ala Gly Lys Glu Val Lys Val Val Phe Lys Asn Gly
 225 230 235 240
 Gln Ser Ile Leu Ala Asp Ile Val Ile Leu Ser Ile Gly Val Arg Pro
 245 250 255
 Glu Thr Thr Leu Ala Arg Ala Ala Glu Leu Thr Ile Gly Glu Ala Gly
 260 265 270
 Gly Ile Ala Val Asn Asp Tyr Leu Gln Thr Ser Asp Glu Ser Ile Tyr
 275 280 285
 Ala Ile Gly Asp Ala Ile Glu Phe Arg His Pro Ile Thr Gly Lys Pro
 290 295 300
 Trp Leu Asn Tyr Leu Ala Gly Pro Ala Asn Arg Gln Gly Arg Ile Val
 305 310 315 320
 Ala Asp Asn Leu Leu Gly Ala Gln Ile Pro Tyr Glu Gly Ala Ile Gly
 325 330 335
 Thr Ser Ile Ala Lys Val Phe Asp Met Thr Val Ala Ser Thr Gly Leu
 340 345 350
 Pro Gly Lys Arg Leu Lys Gln Ala Gly Ile Val Tyr Ala Ser Ser Thr
 355 360 365
 Thr His Pro Ala Ser His Ala Gly Tyr Tyr Pro Asp Ala Met Pro Met
 370 375 380
 Ser Ile Lys Ile Thr Phe Asp Pro Gln Thr Gly Lys Leu Tyr Gly Gly
 385 390 395 400
 Gln Ile Val Gly Tyr Asp Gly Val Asp Lys Arg Ile Asp Glu Leu Ser
 405 410 415
 Leu Val Ile Lys His Glu Gly Thr Ile Tyr Asp Leu Met Lys Val Glu
 420 425 430
 Gln Ala Tyr Ala Pro Pro Phe Ser Ser Ala Lys Asp Pro Val Ala Ile
 435 440 445
 Ala Gly Tyr Val Ala Glu Asn Ile Ile Leu Gly Arg Val Lys Pro Val
 450 455 460
 Tyr Trp Arg Asp Leu Arg Asp Ile Glu Leu Lys Asp Val Phe Leu Leu
 465 470 475 480
 Asp Val Arg Thr Pro Asp Glu Phe Ala Leu Gly Ser Leu Pro Gly Ala
 485 490 495
 Val Asn Ile Pro Leu Asp Glu Ile Arg Asp Arg Ile Ala Glu Leu Pro
 500 505 510
 Ser Asn Lys Pro Ile Tyr Thr Phe Cys Ala Val Gly Leu Arg Gly Tyr

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      515                      520                      525
Leu Ala Tyr Arg Ile Leu Ile Gln His Gly Phe Lys Glu Val Tyr Asn
      530                      535                      540
Leu Ser Gly Gly Leu Lys Thr Tyr Arg Ala Ala Thr Ala Pro Ile Ile
545                      550                      555                      560
Leu His Glu Asn Glu Glu Thr Asp Asp Thr Pro Ser Ala Gln Asp Ser
      565                      570                      575
Pro Ala Lys Pro Ser Val Thr Ala Glu Ala Pro Gln Thr Thr Thr Ala
      580                      585                      590
Ala Asn Pro Lys Thr Ile Arg Val Asp Ala Cys Gly Leu Gln Cys Pro
      595                      600                      605
Gly Pro Val Leu Lys Met Lys Lys Thr Met Asp Thr Leu Val Pro Gly
      610                      615                      620
Glu Arg Val Glu Ile Val Ala Thr Asp Pro Gly Phe Ser Arg Asp Ala
625                      630                      635                      640
Ala Ala Trp Cys Asn Ser Thr Gly Asn Lys Phe Ile Ser Lys Asp Ser
      645                      650                      655
Thr Gly Gly Lys Ser Val Val Val Ile Glu Lys Gly Glu Pro Gln Ala
      660                      665                      670
Cys Asn Leu Thr Thr Thr Cys Asp Ser Lys Gly Lys Thr Leu Ile Met
      675                      680                      685
Phe Ser Asp Asp Leu Asp Lys Ala Leu Ala Thr Phe Val Leu Ala Asn
690                      695                      700
Gly Ala Ala Ala Thr Gly Gln Lys Val Thr Ile Phe Phe Thr Phe Trp
705                      710                      715                      720
Gly Leu Asn Val Ile Lys Lys Leu His Lys Pro Lys Val Glu Lys Asp
      725                      730                      735
Ile Phe Gly Lys Met Phe Gly Thr Met Leu Pro Ser Ser Ser Leu Lys
      740                      745                      750
Leu Lys Leu Ser Lys Met Ser Met Gly Gly Met Gly Gly Lys Met Met
      755                      760                      765
Arg Tyr Ile Met His Arg Lys Gly Ile Asp Ser Leu Glu Ser Leu Arg
770                      775                      780
Gln Gln Ala Leu Glu Asn Gly Val Glu Phe Ile Ala Cys Gln Met Ser
785                      790                      795                      800
Met Asp Val Met Gly Val Lys Arg Glu Glu Leu Leu Asp Glu Val Thr
      805                      810                      815
Val Gly Gly Val Ala Thr Tyr Met Glu Arg Ala Asp Asn Ala Asn Ile
      820                      825                      830
Asn Leu Phe Ile
      835

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<210> 10046
 <211> 340
 <212> PRT
 <213> B.fragilis

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<400> 10046
Ile Ser Gly Arg Met Ser Tyr Leu Lys Asn Ile Ile Thr Tyr Phe Phe
1      5      10      15
His His Pro Ala Ser Asp Gly Val Val Glu Arg Val His Gln Arg Leu
      20      25      30
Ala Asp Thr Asn Ser Gly Gln Glu Lys Glu Glu Val Leu Ser Gly Ile
      35      40      45
Trp Glu Gln Ile Gly Phe Pro Gln Ala Asp Glu His Gln Thr Leu Arg
      50      55      60
Ala Phe Glu Lys Leu Glu Gln Gln Ile Gly Gly Asp Ser Leu Lys Ser
65      70      75      80
Glu Ser Ser Phe Ser Arg Phe Arg Ile Pro Arg Trp Ser Trp Ile Ala

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<210> 10047
<211> 511
<212> PRT
<213> B.fragilis
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Tyr	Trp	Ser	Gly	Tyr	Tyr	Phe	Leu	Ser	Asn	Lys	Lys	Ile	Lys	Asn	Asp
1				5					10					15	
Met	Lys	Lys	Ile	Ile	Tyr	Ile	Phe	Ser	Leu	Phe	Ile	Thr	Val	Ile	Gly
			20					25					30		
Leu	Leu	Gly	Ser	Cys	Ile	Asn	Leu	Glu	Ser	Glu	Ser	Tyr	Asp	Ser	Ile
		35					40					45			
Asn	Thr	Thr	Ile	Phe	Pro	Thr	Asn	Ala	Asp	Asp	Ala	Asp	Ala	Leu	Val
	50					55					60				
Ile	Ala	Ala	Ala	Tyr	Gly	Pro	Phe	Arg	Ala	Asp	Gly	Tyr	Ser	Gly	Leu
65				70						75				80	
Phe	Gln	Cys	Ala	Lys	Gly	Gly	Leu	Ala	Ser	Asn	Thr	Asp	Met	Ser	Thr
				85					90					95	
Asp	Leu	Leu	Asp	Cys	Lys	Trp	Gly	Asp	Ser	Trp	Trp	Pro	Ala	Val	Leu
			100					105					110		
Gln	Leu	Asn	Phe	Thr	Ala	Thr	Ser	Asp	Ile	Pro	Thr	Ser	Phe	Tyr	Gly
		115					120					125			
Thr	Trp	Ala	Asn	His	Ile	Gly	Lys	Met	Thr	Leu	Thr	Leu	Asp	Arg	Ile
	130					135					140				
Ser	Gly	Ile	Asp	Met	Lys	Glu	Glu	Glu	Lys	Thr	Arg	Leu	Ile	Ala	Glu

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145          150          155          160
Thr Arg Cys Gly Arg Gly Trp Leu Ala Tyr Ile Leu Tyr Asp Leu Tyr
          165          170          175
Gly Pro Ile Gln Ile Pro Ser Leu Glu Val Leu Gln Asn Pro Thr Gln
          180          185          190
Lys Val Ile Val Pro Arg Ser Ser Lys Glu Glu Thr Val Lys Leu Ile
          195          200          205
Glu Asp Asp Leu Lys Ala Ala Ala Glu Val Leu Pro Ala Lys Tyr Ser
          210          215          220
Lys Ser Asp Glu Asn Phe Gly Arg Phe Thr Lys Gly Leu Ala Tyr Thr
225          230          235          240
Val Leu Met Lys Leu Tyr Met His Glu Lys Glu Trp Gly Lys Ala Val
          245          250          255
Glu Cys Gly Arg Glu Val Met Lys Cys Gly Tyr Ser Leu Val Thr Asn
          260          265          270
Tyr Lys Asp Ile Phe Thr Leu Asp Asn Glu Gly Asn Asp Glu Met Ile
          275          280          285
Phe Ser Cys Ile Glu Thr Arg Gly Val Asn Glu Gln Met Trp His Ala
          290          295          300
His Val Leu Pro Ser Asn Tyr Pro Thr Thr Asn Pro Asn Ile Gln Lys
305          310          315          320
Trp Asn Gly Tyr Arg Met Pro Trp Gln Phe Tyr His Ser Phe Asp Pro
          325          330          335
Lys Asp Lys Arg Leu Glu Val Ile Cys Ser Glu Tyr Val Gly Thr Asp
          340          345          350
Gly Val Thr Tyr Asn Glu Thr Asn Pro Gly Glu Tyr Leu Asp Lys Gly
          355          360          365
Ala Leu Pro Ile Lys Tyr Gly Glu Asp Leu Thr Gln Thr Ser Glu Asn
          370          375          380
Ser Glu Val Asp Val Val Val Tyr Arg Tyr Ala Asp Val Leu Thr Leu
385          390          395          400
Met Ala Glu Ala Leu Ala Arg Ser Asn Asn Ala Val Thr Gln Glu Ala
          405          410          415
Val Asp Arg Leu Asn Asp Val His Thr Arg Ala Gly Leu Ala Ala Tyr
          420          425          430
Gln Leu Ser Asp Phe Thr Ser Leu Asp Asp Phe Leu Arg Ala Val Leu
          435          440          445
Lys Glu Arg Gly His Glu Leu Trp Gly Glu Gly Cys Arg Arg Ser Asp
          450          455          460
Leu Ile Arg Tyr Gly Leu Tyr Ile Asp Tyr Ala Ile Lys Tyr Lys Gly
465          470          475          480
Ser Thr Thr Ala Lys Glu Tyr Met Asn Leu Met Pro Leu Pro Gln Ser
          485          490          495
Val Ile Thr Glu Ser Ser Gly Gln Val Ile Gln Asn Glu Gly Tyr
          500          505          510

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<210> 10048

<211> 451

<212> PRT

<213> B.fragilis

<400> 10048

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Asn Ser Val Gly Leu Cys Gly Ala Pro Thr Pro Lys Pro Phe Ile Lys
1          5          10          15
Ile Pro Met Lys Tyr Tyr Ser Thr Asn Lys Gln Ala Pro Leu Ala Ser
          20          25          30
Leu Glu Glu Ala Val Val Lys Gly Leu Ala Ser Asp Lys Gly Leu Phe
          35          40          45
Met Pro Met Thr Ile Lys Pro Leu Pro Gln Glu Phe Tyr Asp Glu Ile

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50 55 60
 Glu Asn Leu Ser Phe Arg Glu Ile Ala Tyr Arg Val Ala Asp Ala Phe
 65 70 75 80
 Phe Gly Glu Asp Val Pro Ala Glu Thr Leu Lys Glu Ile Val Tyr Asp
 85 90 95
 Thr Leu Asn Phe Asp Val Pro Leu Val Pro Val Lys Glu Asn Ile Tyr
 100 105 110
 Ser Leu Glu Leu Phe His Gly Pro Thr Leu Ala Phe Lys Asp Val Gly
 115 120 125
 Gly Arg Phe Met Ala Arg Leu Leu Gly Tyr Phe Ile Arg Lys Glu Gly
 130 135 140
 Arg Lys Gln Val Asn Val Leu Val Ala Thr Ser Gly Asp Thr Gly Ser
 145 150 155 160
 Ala Val Ala Asn Gly Phe Leu Gly Val Glu Gly Ile His Val Tyr Val
 165 170 175
 Leu Tyr Pro Lys Gly Lys Val Ser Glu Ile Gln Glu Lys Gln Phe Thr
 180 185 190
 Thr Leu Gly Arg Asn Ile Thr Ala Leu Glu Val Asp Gly Thr Phe Asp
 195 200 205
 Asp Cys Gln Ala Leu Val Lys Ala Ala Phe Met Asp Gln Glu Leu Asn
 210 215 220
 Glu Gln Leu Leu Leu Thr Ser Ala Asn Ser Ile Asn Val Ala Arg Phe
 225 230 235 240
 Leu Pro Gln Ala Phe Tyr Tyr Phe Tyr Ala Tyr Ala Gln Leu Lys Lys
 245 250 255
 Ala Gly Arg Ala Glu Asn Val Val Ile Cys Val Pro Ser Gly Asn Phe
 260 265 270
 Gly Asn Ile Thr Ala Gly Leu Phe Gly Lys Lys Met Gly Leu Pro Val
 275 280 285
 Arg Arg Phe Ile Ala Ala Asn Asn Lys Asn Asp Ile Phe Tyr Gln Tyr
 290 295 300
 Leu Gln Thr Gly Gln Tyr Asn Pro Arg Pro Ser Val Ala Thr Ile Ala
 305 310 315 320
 Asn Ala Met Asp Val Gly Asp Pro Ser Asn Phe Ala Arg Val Leu Asp
 325 330 335
 Leu Tyr Gly Gly Ser His Ala Ala Ile Ala Ala Glu Ile Ser Gly Thr
 340 345 350
 Thr Tyr Thr Asp Glu Gln Ile Arg Glu Ser Val Lys Ala Cys Trp Gln
 355 360 365
 Gln Thr Gly Tyr Leu Leu Asp Pro His Gly Ala Cys Gly Tyr Arg Ala
 370 375 380
 Leu Glu Glu Gly Leu Gln Pro Gly Glu Thr Gly Val Phe Leu Glu Thr
 385 390 395 400
 Ala His Pro Ala Lys Phe Leu Gln Thr Val Glu Ser Ile Ile Gly Thr
 405 410 415
 Glu Val Glu Ile Pro Ala Lys Leu Arg Ala Phe Met Lys Gly Glu Lys
 420 425 430
 Lys Ser Leu Pro Met Thr Lys Glu Phe Ala Asp Phe Lys Ser Tyr Leu
 435 440 445
 Leu Gly Lys
 450

<210> 10049

<211> 462

<212> PRT

<213> B.fragilis

<400> 10049

Asp Leu Phe Ile Lys Arg Ser Met Ala Lys Glu Lys Thr Val Tyr Val

1		5		10		15
Cys	Ser	Asn	Cys	Gly	Gln	Glu
		20		25		30
Ser	Cys	Gly	Glu	Trp	Asn	Thr
		35		40		45
Val	Pro	Asn	Lys	Arg	Pro	Val
		50		55		60
Pro	Val	Thr	Leu	Ser	Glu	Ile
		65		70		75
Met	His	Asp	Glu	Glu	Leu	Asn
		85		90		95
Gly	Ser	Leu	Val	Leu	Ile	Gly
		100		105		110
Leu	Val	Leu	Gln	Thr	Val	Leu
		115		120		125
Ile	Ser	Gly	Glu	Glu	Ser	Ala
		130		135		140
Leu	Thr	Arg	Thr	Ser	Ser	Asp
		145		150		155
Glu	Gln	Ile	Tyr	Val	His	Ile
		165		170		175
Ile	Asp	Ser	Ile	Gln	Thr	Ile
		180		185		190
Gly	Ser	Ile	Ala	Gln	Val	Arg
		195		200		205
Ala	Lys	Glu	Thr	His	Thr	Pro
		210		215		220
Glu	Gly	Ser	Ile	Ala	Gly	Pro
		225		230		235
Val	Leu	Gln	Phe	Glu	Gly	Asp
		245		250		255
Ser	Ile	Lys	Asn	Arg	Phe	Gly
		260		265		270
Met	Arg	Gln	Asp	Gly	Leu	Arg
		275		280		285
Leu	Ser	Gln	Asp	His	Glu	Gly
		290		295		300
Ile	Glu	Gly	Val	Arg	Pro	Phe
		305		310		315
Ser	Ala	Val	Tyr	Gly	Asn	Pro
		325		330		335
Arg	Arg	Met	Asn	Met	Leu	Leu
		340		345		350
Lys	Leu	Ala	Gln	Lys	Asp	Val
		355		360		365
Val	Asn	Asp	Pro	Ala	Ile	Asp
		370		375		380
Ser	Asn	Met	Asp	Ala	Ala	Ile
		385		390		395
Ile	Gly	Leu	Ser	Gly	Glu	Ile
		405		410		415
Ile	Gly	Glu	Ala	Glu	Lys	Leu
		420		425		430
Tyr	Asn	Met	Gln	Gly	Ile	Asp
		435		440		445
Pro	Val	Arg	Lys	Val	Glu	Glu
		450		455		460

<211> 305
 <212> PRT
 <213> B.fragilis

<400> 10050

Asn Cys Ile Ile Met Leu Leu Phe Gln Thr Thr Gln Gln Val Ala Asp
 1 5 10 15
 Ser Leu Gln Val Ala Ala Glu Lys Leu Asp Gln Ala Ile Ala Gln Ala
 20 25 30
 Asp Gly Leu Asp Lys Leu Gly Leu Ile Thr Gln Gln Leu Ile Asp Ser
 35 40 45
 Gly Ile Gln Ala Gly Gly His Ile Leu Lys Ala Val Ile Val Phe Leu
 50 55 60
 Val Gly Arg Phe Leu Ile Arg Met Leu Asn Arg Leu Val Gly Arg Val
 65 70 75 80
 Met Asp Lys Arg Asn Val Asp Ile Ser Ile Lys Thr Phe Val Lys Ser
 85 90 95
 Leu Val Asn Ile Leu Leu Thr Val Leu Leu Ile Val Ser Val Val Gly
 100 105 110
 Ala Leu Gly Val Glu Thr Thr Ser Phe Ala Ala Leu Leu Ala Ser Ala
 115 120 125
 Gly Val Ala Val Gly Met Ala Leu Ser Gly Asn Leu Gln Asn Phe Ala
 130 135 140
 Gly Gly Leu Val Ile Leu Leu Phe Lys Pro Tyr Lys Val Gly Asp Trp
 145 150 155 160
 Ile Glu Ala Gln Ser Val Ser Gly Thr Val Lys Glu Ile Gln Ile Phe
 165 170 175
 His Thr Ile Leu Thr Thr Ala Asp Asn Lys Leu Ile Tyr Val Pro Asn
 180 185 190
 Gly Ala Leu Ser Ser Gly Val Val Thr Asn Tyr Ser Asn Gln Lys Thr
 195 200 205
 Arg Arg Val Glu Trp Ile Phe Gly Val Asp Tyr Gly Glu Asp Tyr Asn
 210 215 220
 Lys Val Glu Lys Val Val Arg Glu Val Leu Thr Ala Asp Lys Arg Ile
 225 230 235 240
 Leu Asn Asp Pro Ala Pro Phe Ile Ala Leu His Ala Leu Asp Ala Ser
 245 250 255
 Ser Val Asn Val Val Val Arg Val Trp Val Glu Ser Gly Asp Tyr Trp
 260 265 270
 Gly Val Tyr Phe Asp Ile Asn Lys Thr Ile Tyr Ala Thr Phe Asn Glu
 275 280 285
 Lys Gly Ile Asn Phe Pro Phe Pro Gln Leu Thr Val His Gln Ala Pro
 290 295 300
 Asn
 305

<210> 10051
 <211> 489
 <212> PRT
 <213> B.fragilis

<400> 10051

Met Asn Ile Met Asn Gln Lys Leu Leu Leu Gly Ser Ala Leu Leu Val
 1 5 10 15
 Gly Met Ala Ser Thr Gln Gln Ala Leu Ala Arg Gln Lys Lys Ala Lys
 20 25 30
 Glu Gln Thr Arg Pro Asn Val Val Phe Ile Leu Ala Asp Asp Leu Gly
 35 40 45
 Tyr Gly Asp Leu Ser Cys Tyr Gly Gln Glu Lys Phe Glu Thr Pro Asn

50	55	60
Ile Asp Arg Leu Ala Gln Asn Gly Met Arg Phe Thr Gln Cys Tyr Ser		
65	70	75
Gly Thr Thr Val Ser Ala Pro Ser Arg Ser Cys Leu Ile Thr Gly Thr		80
	85	90
His Ser Gly His Thr Ala Ile Arg Gly Asn Lys Glu Leu Ala Pro Glu		95
	100	105
Gly Gln Phe Pro Leu Pro Glu Asn Ser Gln Thr Ile Phe Asn Asp Phe		110
	115	120
Arg Asn Ala Gly Tyr Arg Thr Gly Ala Phe Gly Lys Trp Gly Leu Gly		125
	130	135
Tyr Ile Gly Ser Ala Gly Asp Pro Tyr Lys Gln Gly Ile Asp Gln Phe		140
145	150	155
Tyr Gly Tyr Asn Cys Gln Leu Leu Ala His Ser Tyr Tyr Pro Asp His		160
	165	170
Leu Trp Asp Asn Asp Lys Arg Val Asp Leu Pro Asp Asn Asn Leu Asn		175
	180	185
Val Gln Tyr Gly Lys Gly Thr Tyr Ser Gln Asp Leu Ile His Ser Lys		190
	195	200
Ala Leu Ala Phe Leu Asp Glu Ala Ala Lys Glu Lys Asp Gln Pro Phe		205
	210	215
Phe Met Trp Tyr Pro Thr Ile Ile Pro His Ala Glu Leu Ile Val Pro		220
225	230	235
Glu Asp Ser Ile Ile Lys Lys Phe Arg Gly Lys Tyr Pro Glu Lys Pro		240
	245	250
Tyr Arg Gly Val Glu Pro Gly Ser Pro Ala Phe Arg Lys Gly Gly Tyr		255
	260	265
Cys Thr Gln Phe Tyr Pro His Ala Thr Phe Ala Ala Met Val Tyr Arg		270
	275	280
Leu Asp Val Tyr Val Gly Gln Ile Val Gln Lys Leu Lys Asp Met Gly		285
	290	295
Val Tyr Asp Asn Thr Ile Ile Ile Phe Ser Ser Asp Asn Gly Pro His		300
305	310	315
Met Glu Gly Gly Ala Asp Pro Asp Phe Phe Asn Ser Asn Gly Ile Trp		320
	325	330
Arg Gly Tyr Lys Arg Asp Val Tyr Glu Gly Gly Ile Arg Val Pro Met		335
	340	345
Ile Ile Ser Trp Pro Gly His Val Gln Pro Ser Thr Glu Thr Asp Phe		350
	355	360
Met Cys Ser Phe Trp Asp Leu Met Pro Thr Phe Arg Glu Val Leu Asn		365
	370	375
Pro Lys Ala Asp Thr Arg Asn Met Asp Gly Val Ser Ile Leu Pro Leu		380
385	390	395
Leu Gln Asn Arg Lys Gly Gln Lys Glu His Glu Tyr Leu Tyr Phe Glu		400
	405	410
Phe Leu Glu Met Asn Gly Arg Gln Ala Val Arg Lys Gly Asp Trp Lys		415
	420	425
Leu Val His Met Asn Ile Arg Gly Asn Lys Pro Tyr Tyr Glu Leu Tyr		430
	435	440
Asn Leu Ala Ser Asp Pro Ser Glu Lys Tyr Asn Val Leu Asn Gln Tyr		445
	450	455
Pro Glu Lys Ala Asp Glu Leu Lys Ala Ile Met Lys Glu Ala His Ile		460
465	470	475
Glu Asp Ser Asn Trp Pro Leu Phe Arg		480
	485	

<210> 10052

<211> 494

<212> PRT

<213> B.fragilis

<400> 10052

Ser Leu His Ile Phe Ile Met Phe Arg Leu Ile Lys Lys Ile Leu Pro
 1 5 10 15
 Trp Tyr Leu Lys Ala Phe Ala Glu Asn Asn Lys Thr Leu Val Lys Arg
 20 25 30
 Phe Ala Lys Asn Asn Val Lys Met Gln Tyr Asp Tyr Leu Glu Ala Leu
 35 40 45
 Val Lys Asp Leu Ser Leu Tyr Lys Ile Lys Thr Glu Ile Asn Met Lys
 50 55 60
 Asn Leu Arg Ile Trp Gln Thr Leu Ser Leu Phe Ile Leu Leu Leu Ser
 65 70 75 80
 Ile Thr Leu Pro Leu Ser Ala Lys Ser Asp Leu Leu Thr Lys Leu Asn
 85 90 95
 Thr Ile Thr Leu Ile Ile Arg Thr Gln Ser Leu Glu Thr Ser Leu Phe
 100 105 110
 Ala Glu Lys Tyr Leu Leu Arg Phe Lys Gln Pro Leu Asp His Ser His
 115 120 125
 Pro Glu Lys Gly Ser Phe Ser Gln Arg Val Ile Val Ala His Val Gly
 130 135 140
 Tyr Asp Arg Pro Thr Leu Met Val Thr Glu Gly Tyr Gly Ala Ala Arg
 145 150 155 160
 Ser Leu Asn Pro Gly Tyr Tyr Glu Glu Leu Ser Lys Leu Phe Asn Thr
 165 170 175
 Asn Ile Ile Ala Val Glu His Arg Tyr Phe Leu Glu Ser Thr Pro Lys
 180 185 190
 Pro Lys Asp Trp Lys Tyr Leu Thr Ala Trp Asn Ser Ala Arg Asp Leu
 195 200 205
 His Ala Ile Arg Glu Ala Phe Arg Ser Ile Tyr Pro Gly Lys Trp Ile
 210 215 220
 Ala Thr Gly Ile Ser Lys Gly Gly Gln Thr Ala Met Leu Tyr Arg Thr
 225 230 235 240
 Tyr Phe Pro Asp Asp Ile Asp Ile Thr Val Pro Tyr Val Ala Pro Leu
 245 250 255
 Cys Arg Ser Val Glu Asp Gly Arg His Glu Pro Phe Leu Arg Thr Val
 260 265 270
 Ala Met Pro Asp Asp Arg Gln Lys Val Glu Asp Phe Gln Met Glu Val
 275 280 285
 Leu Lys Arg Lys Ala Ala Leu Leu Pro His Phe Lys Lys Tyr Cys Ser
 290 295 300
 Val Arg Lys Leu Gln Phe Arg Ala Pro Val Glu Asp Ile Tyr Asp Tyr
 305 310 315 320
 Thr Val Leu Glu Tyr Ser Phe Ser Leu Trp Gln Trp Gly Ile Pro Val
 325 330 335
 Ser Arg Ile Pro Ser Val Ser Ala Ser Asp Lys Glu Leu Phe Asp His
 340 345 350
 Leu Val Ala Ile Ser Ala Pro Ser Tyr Phe Val Lys Glu Gly Ser Asn
 355 360 365
 Thr Ser Phe Phe Val Gln Ala Ala Arg Glu Leu Gly Tyr Tyr Gly Tyr
 370 375 380
 Asp Ile Arg Pro Phe Arg Glu Tyr Leu Ser Ile Gly Thr Ser Lys Asp
 385 390 395 400
 Tyr Leu Arg Arg Leu Met Ile Pro Glu Glu Leu Ala Asp Met Glu Phe
 405 410 415
 Asp Glu Thr Leu Ser Tyr Lys Ile Thr Arg Phe Leu Lys Glu Asn Asp
 420 425 430
 Pro Lys Met Ile Phe Ile Tyr Gly Gln Tyr Asp Pro Trp Thr Ala Ala
 435 440 445

Gly Val Thr Trp Leu Lys Gly Lys Lys Asn Ile His Val Phe Val Gln
 450 455 460
 Pro Lys Gly Ser His Met Ala Arg Ile His Thr Leu Pro Gln Lys Glu
 465 470 475 480
 Lys Glu Glu Ala Ile Gly Leu Ile Lys Lys Trp Leu Glu Glu
 485 490

<210> 10053

<211> 657

<212> PRT

<213> B.fragilis

<400> 10053

Tyr Met Asn Met Lys Lys Ile Leu Leu Val Leu Thr Leu Phe Thr Gly
 1 5 10 15
 Met Ile Leu Ala Gly Cys Asn Asp Ser Phe Leu Glu Lys Tyr Pro Val
 20 25 30
 Thr Ser Leu Thr Glu Glu Asn Ala Phe Lys Ser Tyr Asp Asn Phe Lys
 35 40 45
 Ala Phe Met Trp Pro Cys Tyr Glu Met Phe Ser Asn Thr Asn Ile Ala
 50 55 60
 Thr Ser Thr Thr Ala Ile Gly Arg Asn Ser His Tyr Met Gly Asp Val
 65 70 75 80
 Tyr Ala Gly Tyr Leu Asn Gln Arg Gly Ala Ser Ser Gln Asn Lys Tyr
 85 90 95
 Ala Phe Gln Thr Val Thr Asn Ala Thr Ser Gly Asn Gly Trp Asn Phe
 100 105 110
 Ser Thr Phe Ile Arg Arg Ile Asn Leu Met Leu Ser His Val Asp Asp
 115 120 125
 Ser Asp Met Thr Glu Ala Glu Lys Asn His Trp Lys Ala Val Gly Tyr
 130 135 140
 Phe Phe His Ser Phe Trp Tyr Met Glu Leu Ile Asp Arg Phe Gly Asp
 145 150 155 160
 Val Pro Trp Ile Asp Lys Pro Leu Asp Glu Thr Ser Glu Glu Ala Tyr
 165 170 175
 Gly Thr Arg Met Pro Arg Leu Glu Val Ala Asp Lys Val Leu Glu Arg
 180 185 190
 Leu Gln Trp Ala Glu Gln Asn Ile Gly Asp Ala Ser Val Tyr Glu Lys
 195 200 205
 Lys Asp Gly Ser Asn Thr Ile Asn Arg Asp Cys Val Arg Ala Ala Leu
 210 215 220
 Ser Arg Phe Thr Leu Arg Glu Ala Thr Trp Arg Lys Tyr His Glu Leu
 225 230 235 240
 Gly Ser Tyr Asp Lys Tyr Phe Asp Glu Cys Ile Arg Val Ser Lys Leu
 245 250 255
 Leu Met Ala Asp Tyr Pro Thr Leu Tyr Tyr Gly Thr Asp Gly Gln Pro
 260 265 270
 Ala Ala Gly Tyr Gly Glu Met Trp Thr Thr Glu Asp Leu Ser Lys Val
 275 280 285
 Gln Gly Val Ile Leu Tyr Gln Gln Trp Leu Glu Thr Ile Lys Pro Gly
 290 295 300
 His Ser Cys Tyr Tyr Glu His Thr Ser Ser His Asp Ile Glu Met His
 305 310 315 320
 Gln Gly Thr Val Asp Leu Tyr Leu Cys Lys Asp Gly Lys Thr Ile Ser
 325 330 335
 His Ser Asp Gln Tyr Gln Gly Asp Lys Asp Ile Tyr Ala Thr Phe Arg
 340 345 350
 Asn Arg Asp Pro Arg Met Tyr His Thr Ile Met Pro Pro Tyr Lys Val
 355 360 365

Lys Asp Gly Lys Gly Asp Tyr Ser Thr Trp Ser Tyr Thr Ser Asp Pro
 370 375 380
 Ala Asp Arg Glu Tyr Ile Asp Ile Met Gly Ala Asn Glu Ser Cys Ser
 385 390 395 400
 Asn Pro Gly Ile Gly Met Lys Arg Leu Pro Gly Gln Asn Trp Ser Ala
 405 410 415
 Ser Leu Val Arg Arg Val Pro Asn Leu Gln Gly Gly Ala Gln Tyr Thr
 420 425 430
 Ile Glu Gly Lys Lys Tyr Gly Pro His Ala Tyr Val Ala Ser Arg Ser
 435 440 445
 Gly Tyr Tyr Val Trp Lys Asn Trp Asp Asn Trp Glu Glu Asn Tyr Asn
 450 455 460
 Asn Ala Gln Val Asn Thr Ala Asp Lys Pro Val Phe Lys Ile Glu Glu
 465 470 475 480
 Val Leu Leu Asn Tyr Ala Glu Ala Met Phe Glu Thr Asn Gln Phe Thr
 485 490 495
 Gln Thr Ile Ala Asp Glu Thr Ile Asn Lys Leu Arg Lys Arg Ala Gly
 500 505 510
 Val Ala Asp Met Val Val Ala Gln Ile Asp Gly Asn Phe Asp Pro Lys
 515 520 525
 Arg Gly Lys Tyr Tyr Pro Lys Gly Asn Asp Asn Gly Ile Leu Val Asp
 530 535 540
 Pro Val Leu Trp Glu Ile Arg Arg Glu Arg Ile Ile Glu Leu Met Gly
 545 550 555 560
 Glu Gly Phe Gly Phe Tyr Asp Val Arg Arg Trp Arg Met Ala Pro Trp
 565 570 575
 Phe Val Asn Met Gln Gln Lys Gly Met Trp Ile Ser Lys Thr Glu Leu
 580 585 590
 Ser Ser Leu Thr Leu Leu Asn Glu Met Thr Gly Thr Ser Asp Gly Ala
 595 600 605
 Asn Gly Ser Met Thr Glu Gly Tyr Ile Tyr Leu Phe Asn Asp Pro Leu
 610 615 620
 Lys Glu Gly Lys Gly Trp Leu Glu Lys Tyr Tyr Leu Tyr Gln Val Pro
 625 630 635 640
 Leu Glu Glu Ile Ala Leu Asn Pro Asn Leu Thr Gln Asn Pro Gly Trp
 645 650 655
 Glu

<210> 10054

<211> 467

<212> PRT

<213> B.fragilis

<400> 10054

Gln Lys Thr Ile Ile Phe Ala Arg Pro Val Phe Tyr His Ser His Phe
 1 5 10 15
 Asn Leu Ser Asp Met Ser Lys Ile Leu Ile Ile Asp Asp Glu Val Gln
 20 25 30
 Ile Arg Gly Leu Leu Ala Arg Met Met Glu Leu Glu Gly Tyr Glu Val
 35 40 45
 Cys Gln Ala Gly Asp Cys Lys Thr Ala Leu Arg Gln Leu Glu Leu Gln
 50 55 60
 Met Pro Asp Val Ala Leu Cys Asp Val Phe Leu Pro Asp Gly Asn Gly
 65 70 75 80
 Val Asp Leu Val Thr Glu Met Lys Lys Lys Ser Pro Gly Val Glu Ile
 85 90 95
 Ile Leu Leu Thr Ala His Gly Asn Ile Pro Asp Gly Val Gln Ala Ile
 100 105 110

Lys Asn Gly Ala Phe Asp Tyr Ile Thr Lys Gly Asp Asp Asn Asn Lys
 115 120 125
 Ile Ile Pro Leu Ile Ser Arg Ala Val Glu Lys Ala Arg Met Asn Ile
 130 135 140
 Arg Leu Asp Lys Leu Glu Lys Lys Met Gly Leu Met Tyr Ser Phe Asp
 145 150 155 160
 Ser Ile Leu Gly Glu Ser Lys Ala Leu Lys Glu Ala Val Ser Leu Ala
 165 170 175
 Arg Lys Val Ser Val Thr Asp Val Pro Val Leu Leu Thr Gly Glu Thr
 180 185 190
 Gly Thr Gly Lys Glu Val Phe Ala Gln Ser Ile His Tyr Ser Ser Lys
 195 200 205
 Arg Ala Arg Gln Asn Phe Val Ala Val Asn Cys Ser Ser Phe Ser Lys
 210 215 220
 Glu Leu Leu Glu Ser Glu Met Phe Gly His Lys Ala Gly Ser Phe Thr
 225 230 235 240
 Gly Ala Leu Lys Asp Lys Lys Gly Leu Phe Glu Glu Ala Asn Asn Gly
 245 250 255
 Thr Ile Phe Leu Asp Glu Ile Gly Glu Met Ala Phe Glu Leu Gln Ala
 260 265 270
 Lys Leu Leu Arg Ile Leu Glu Thr Gly Glu Tyr Ile Lys Ile Gly Asp
 275 280 285
 Thr Lys Pro Thr His Ile Asp Val Arg Ile Ile Ala Ala Thr Asn Arg
 290 295 300
 Asn Leu Pro Ala Glu Ile Ala Ala Gly Arg Phe Arg Glu Asp Leu Phe
 305 310 315 320
 Tyr Arg Leu Ser Val Phe Gln Val His Leu Pro Pro Leu Arg Glu Arg
 325 330 335
 Thr Gly Asp Ile Lys Ile Leu Ala Glu Ser Phe Val Arg Ser Phe Ser
 340 345 350
 Glu Lys Leu Ser His Pro Val Asn Arg Ile Ala Pro Ala Tyr Leu Glu
 355 360 365
 Ala Leu Cys Gln Gln Pro Trp Lys Gly Asn Ile Arg Glu Leu Arg Asn
 370 375 380
 Val Ile Glu Arg Ser Leu Ile Val Cys Glu Gly Asp Arg Leu Asp Val
 385 390 395 400
 Asp Asp Leu Pro Leu Glu Ile Gln Asn Ser His Tyr Glu Lys Ser Asp
 405 410 415
 Glu Gly Met Pro Gly Ser Phe Glu Leu Ser Ala Met Glu Arg Arg His
 420 425 430
 Ile Ala Arg Val Leu Glu Tyr Thr Lys Gly Asn Lys Thr Glu Ala Ala
 435 440 445
 Arg Leu Leu Lys Ile Gly Leu Thr Thr Leu Tyr Arg Lys Ile Glu Glu
 450 455 460
 Tyr Lys Leu
 465

<210> 10055

<211> 415

<212> PRT

<213> B.fragilis

<400> 10055

Lys Ile Leu Ile Thr Lys Thr Arg Tyr Lys Ser Met Glu Pro Ile Arg
 1 5 10 15
 Leu Asn Thr Ile Glu Glu Ala Ile Ala Asp Phe Lys Glu Gly Asn Phe
 20 25 30
 Val Ile Val Val Asp Asp Glu Asp Arg Glu Asn Glu Gly Asp Phe Ile
 35 40 45

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Ile Ala Ala Glu Lys Ile Thr Pro Glu Lys Val Asn Phe Met Leu Thr
 50          55          60
His Gly Arg Gly Val Leu Cys Ala Pro Ile Thr Glu Glu Arg Cys Ala
65          70          75          80
Glu Leu Glu Leu Asp Met Gln Val Ser Ser Asn Thr Ser Ile Tyr Glu
      85          90          95
Thr Pro Phe Thr Val Thr Val Asp Leu Leu Glu Gly Cys Thr Thr Gly
      100          105          110
Val Ser Met His Asp Arg Ala Met Thr Ile Arg Ala Leu Ala Asp Pro
      115          120          125
Lys Thr Lys Pro Ala Asp Leu Gly Arg Pro Gly His Ile Asn Pro Leu
      130          135          140
Arg Ala Arg Ser Arg Gly Val Leu Arg Arg Ala Gly His Thr Glu Ala
145          150          155          160
Ser Val Asp Leu Ala Lys Leu Ala Gly Leu Tyr Pro Ala Ala Ala Leu
      165          170          175
Ile Glu Ile Ile Asn Glu Asp Gly Thr Met Ala Arg Leu Pro Gln Leu
      180          185          190
Val Glu Val Ala Arg Arg Phe Gly Leu Lys Ile Ile Ser Ile Lys Asp
      195          200          205
Leu Ile Ala Tyr Arg Leu Gln Met Glu Ser Ile Val Asp Arg Gly Val
      210          215          220
Glu Val Asp Met Pro Thr Gln Phe Gly His Phe Arg Leu Ile Pro Phe
225          230          235          240
Arg Gln Lys Ser Asn Gly Met Glu His Ile Ala Leu Ile Lys Gly Thr
      245          250          255
Trp Asp Thr Asp Glu Pro Ile Leu Val Arg Val His Ser Ser Cys Met
      260          265          270
Thr Gly Asp Ile Phe Gly Ser Cys Arg Cys Glu Cys Gly Glu Gln Leu
      275          280          285
His Lys Ala Met Glu Met Ile Glu Ala Ala Gly Lys Gly Val Ile Val
      290          295          300
Tyr Met Asn Gln Glu Gly Arg Gly Ile Gly Leu Met Asn Lys Ile Ala
305          310          315          320
Ala Tyr Lys Leu Gln Glu Glu Gly Tyr Asp Thr Val Asp Ala Asn Leu
      325          330          335
His Leu Gly Phe Asp Ala Asp Glu Arg Asp Tyr Gly Val Gly Ala Gln
      340          345          350
Ile Leu Arg Glu Ile Gly Val Lys Lys Met Lys Leu Met Thr Asn Asn
      355          360          365
Pro Val Lys Arg Ile Gly Leu Glu Ala Tyr Gly Leu Glu Ile Thr Glu
      370          375          380
Asn Val Gly Ile Glu Ile Lys Pro Asn Pro Tyr Asn Glu Arg Tyr Leu
385          390          395          400
Lys Thr Lys Lys Asp Arg Met Gly His Thr Leu His Phe Asn Lys
      405          410          415

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<210> 10056

<211> 960

<212> PRT

<213> B.fragilis

<400> 10056

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Thr Ile Lys Ile Ile Asn Leu Ile Leu Tyr Glu Met Lys Thr Arg Thr
 1          5          10          15
Arg Thr Lys Met Leu Leu Leu Leu Gly Val Leu Leu Phe Gly Phe Thr
      20          25          30
Val Ser Ala Trp Ser Gln Lys Val Ser Leu Asp Phe Asn Asn Glu Lys
      35          40          45

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Val	Glu	Lys	Ile	Leu	Ser	Ser	Ile	Lys	Ala	Gln	Gln	Gly	Met	Gly	Leu
50						55				60					
Val	Phe	Ser	Asp	Gln	Leu	Ile	Asp	Val	Asn	Arg	Lys	Ile	Ser	Ile	Gln
65					70					75					80
Val	Lys	Asp	Ala	Ser	Leu	Asp	Glu	Ala	Leu	Ser	Lys	Leu	Leu	Ala	Gly
				85					90					95	
Thr	Lys	Val	Thr	Phe	Glu	Ile	Lys	Ile	Asn	Lys	Ile	Tyr	Phe	Ile	Glu
			100					105					110		
Lys	Lys	Ala	Asp	Gln	Gln	Ser	Gly	Cys	Arg	Lys	Lys	Lys	Val	Ser	Gly
		115					120					125			
Val	Val	Lys	Asp	Ala	Thr	Gly	Glu	Pro	Ile	Ile	Gly	Ala	Asn	Val	Val
	130					135					140				
Glu	Lys	Gly	Val	Gly	Thr	Asn	Gly	Val	Ile	Thr	Asn	Leu	Asp	Gly	Glu
145					150					155					160
Phe	Thr	Leu	Glu	Val	Pro	Glu	Asn	Ala	Ser	Leu	Ile	Ile	Ser	Tyr	Ile
				165					170					175	
Gly	Tyr	Leu	Gln	Gln	Asp	Val	Ser	Thr	Lys	Gly	Lys	Asp	Ala	Phe	Asn
			180					185					190		
Ile	Ile	Met	Lys	Glu	Asp	Thr	Lys	Thr	Leu	Asp	Glu	Val	Val	Val	Val
		195					200					205			
Gly	Tyr	Gly	Val	Gln	Lys	Lys	Val	Asn	Leu	Thr	Gly	Ala	Val	Ala	Ala
	210					215					220				
Val	Asp	Ser	Lys	Ser	Leu	Gln	Asn	Arg	Pro	Val	Thr	Asn	Val	Ser	Asn
225					230					235					240
Ala	Ile	Gln	Gly	Leu	Leu	Pro	Gly	Val	Thr	Val	Ile	Ser	Gly	Thr	Gly
				245					250					255	
Gln	Pro	Gly	Asn	Asp	Asn	Thr	Thr	Ile	Arg	Val	Arg	Gly	Val	Gly	Thr
			260					265						270	
Leu	Asn	Asn	Ser	Asn	Pro	Met	Tyr	Val	Val	Asp	Gly	Leu	Pro	Val	Ser
	275						280					285			
Ser	Ile	Asn	Glu	Val	Asp	Pro	Ser	Asp	Ile	Glu	Asn	Ile	Ser	Val	Leu
	290					295					300				
Lys	Asp	Ala	Ser	Ser	Ala	Ala	Ile	Tyr	Gly	Ser	Arg	Ala	Ala	Asn	Gly
305					310					315					320
Val	Ile	Leu	Ile	Thr	Thr	Lys	Lys	Gly	Gly	Asp	Lys	Ala	Pro	Thr	Leu
				325					330					335	
Arg	Tyr	Asp	Gly	Tyr	Val	Gly	Trp	Gln	Lys	Pro	Thr	Ala	Leu	Pro	Glu
			340					345					350		
Tyr	Leu	His	Ser	Trp	Glu	Tyr	Ala	Lys	Leu	Tyr	Asn	Lys	Ala	Met	Val
	355						360					365			
Asn	Glu	Gly	Lys	Asn	Pro	Ile	Tyr	Thr	Asp	Glu	Glu	Ile	Glu	Lys	Phe
	370					375					380				
Arg	Asn	Gly	Ser	Asp	Pro	Asp	Asn	Tyr	Pro	Asp	Thr	Asp	Trp	Gln	Gly
385					390					395					400
Leu	Phe	Tyr	Lys	Thr	Gly	Leu	Gln	His	Ser	His	Arg	Ala	Glu	Ile	Ser
				405					410					415	
Gly	Gly	Thr	Asp	Lys	Met	Thr	Tyr	Met	Phe	Ser	Ala	Gly	Tyr	Leu	Gly
			420					425					430		
Gln	Asp	Gly	Ile	Ile	Asp	Ile	Ala	Lys	Tyr	Asp	Arg	Tyr	Ser	Val	Arg
	435						440					445			
Gly	Asn	Met	Asn	Ala	Lys	Met	Gly	Lys	Phe	Thr	Ala	Gly	Met	Asn	Leu
	450					455					460				
Ser	Phe	Thr	Tyr	Gly	Glu	Ala	Gln	Glu	Pro	Val	Ser	Gly	Phe	Thr	Gly
465					470					475					480
Glu	Met	Ser	Asn	Ile	Phe	Ser	Gln	Ile	Asn	Gln	Ile	Ala	Pro	Phe	Ile
				485					490					495	
Pro	Tyr	Lys	Tyr	Ser	Asn	Gly	Tyr	Tyr	Gly	Tyr	Ala	Asn	Asp	Gly	Asn
				500				505					510		
Pro	Leu	Ala	Phe	Ile	Glu	Glu	Gly	Asn	Leu	Arg	Thr	Thr	Lys	Gln	His

515	520	525
Ile Thr Arg Ala Ile Gly Asn Val Ser Tyr Glu Pro Ile Lys Gly Leu		
530	535	540
Lys Ile Gln Glu Ile Val Gly Tyr Glu Tyr Lys Ser Ile Ser Asp Glu		
545	550	555
Lys Phe Ile Lys Asp Ile Gln Tyr Tyr Asn Trp Lys Thr Gly Glu Pro		
565	570	575
Thr Lys Tyr Gln Gly Pro Asn Asn Gln Thr Asp Glu Arg Lys Asn Gly		
580	585	590
Leu Lys Leu Asn Leu Gln Thr Leu Val Ser Tyr Asn Asn Thr Phe Gly		
595	600	605
Lys His Thr Val Gly Ala Leu Ala Gly Tyr Glu Gln Glu Tyr Tyr Arg		
610	615	620
Glu Asp Trp Thr Lys Gly Tyr Arg Lys Asn Phe Leu Asn Asn Asp Leu		
625	630	635
Trp Glu Leu Asn Ala Gly Ser Pro Asp Gly Gln Thr Ala Asp Gly Ser		
645	650	655
Ala Asn Glu Tyr Ala Leu Arg Ser Phe Phe Gly Arg Leu Thr Tyr Asp		
660	665	670
Tyr Asp Asn Arg Tyr Leu Val Glu Ala Asn Ile Arg Arg Asp Gly Thr		
675	680	685
Ser Arg Ile Phe Lys Asp Ser Arg Trp Gly Val Phe Pro Ser Phe Ser		
690	695	700
Gly Ala Trp Arg Ile Ile Asn Glu Pro Phe Met Glu Gly Thr Arg Asn		
705	710	715
Val Leu Ser Asp Leu Lys Leu Arg Gly Gly Trp Gly Val Leu Gly Asn		
725	730	735
Gln Ala Ile Ser Tyr Tyr Ser Tyr Gln Ser Val Leu Asp Gln Ala Asn		
740	745	750
Tyr Ser Phe Gly Gly Thr Val Val Gln Gly Val Ala Pro Val Asp Gly		
755	760	765
Ala Asn Arg Asp Leu Ile Trp Glu Thr Thr Glu Thr Leu Asn Phe Gly		
770	775	780
Leu Asp Met Gly Phe Leu Gly Asn Gln Tyr Thr Leu Ser Ile Glu Gly		
785	790	795
Tyr Arg Lys Leu Thr Tyr Asp Ile Leu Met Lys Leu Pro Val Ser Thr		
805	810	815
Leu Tyr Gly Leu Asn Ala Pro Tyr Gln Asn Ala Gly Lys Val Lys Asn		
820	825	830
Thr Gly Leu Glu Ile Thr Ala Gly Tyr Lys Leu Asn Thr His Gly Trp		
835	840	845
Asn Phe Gln Val Ser Ala Asn Ala Ala Tyr Asn Lys Asn Glu Val Met		
850	855	860
Asp Leu Lys Asn Gly Gly Ala Arg Ile Trp Ser Gly Lys Tyr Phe Asn		
865	870	875
Gln Glu Gly Tyr Ala Ile Asn Ser Ile Gly Gly Tyr Ile Ala Glu Gly		
885	890	895
Leu Phe Lys Thr Glu Glu Glu Val Ala Asn Ser Ala Thr Ile Pro Gly		
900	905	910
Thr Asp Thr Ala Pro Gly Asp Ile Lys Tyr Arg Asp Ile Asn Asn Asp		
915	920	925
Gly Lys Ile Asp Gly Glu Asp Arg Val Tyr Ile Gly Asn Thr Met Pro		
930	935	940
Lys Trp Thr Phe Gly Leu Asn Leu Phe Ala Glu Cys Leu His His Gly		
945	950	955
		960

<210> 10057

<211> 611

<212> PRT

<213> B.fragilis

<400> 10057

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Arg Tyr Pro Met Ile Lys Gln Arg Lys Ile Glu Leu Leu Ala Pro Ala
1      5      10      15
Lys Asn Leu Glu Cys Gly Ile Ala Ala Ile Asp His Gly Ala Asp Ala
20      25      30
Val Tyr Ile Gly Ala Pro Lys Phe Gly Ala Arg Ala Ala Val Asn
35      40      45
Ser Leu Glu Asp Ile Ala Ala Leu Val Glu Tyr Ala His Leu Tyr Asn
50      55      60
Ala Arg Ile Tyr Val Thr Val Asn Thr Ile Leu Lys Asp Glu Glu Leu
65      70      75      80
Gln Glu Thr Glu Lys Met Ile Trp Ala Leu Phe Arg Ala Gly Val Asp
85      90      95
Ala Leu Ile Val Gln Asp Met Gly Ile Thr Gly Leu Asn Leu Pro Pro
100     105     110
Ile Pro Leu His Ala Ser Thr Gln Met Asp Asn Arg Thr Val Glu Lys
115     120     125
Val Arg Phe Leu Ala Asp Ala Gly Phe Arg Gln Val Val Leu Ala Arg
130     135     140
Glu Leu Ser Leu Arg Glu Ile Ser Lys Ile His Glu Ala Cys Pro Asp
145     150     155     160
Val Pro Leu Glu Ile Phe Val His Gly Ala Leu Cys Val Ser Tyr Ser
165     170     175
Gly Gln Cys Tyr Val Ser Gln Ala Cys Phe Gly Arg Ser Ala Asn Arg
180     185     190
Gly Glu Cys Ala Gln Phe Cys Arg Leu Pro Phe Ser Leu Val Asp Ala
195     200     205
Glu Gly Arg Val Ile Val Lys Asp Lys His Leu Leu Ser Leu Lys Asp
210     215     220
Leu Asn Gln Ser Asp Glu Leu Glu Ala Leu Leu Asp Ala Gly Ala Ser
225     230     235     240
Ser Phe Lys Ile Glu Gly Arg Leu Lys Asp Val Ser Tyr Val Lys Asn
245     250     255
Val Thr Ala Ala Tyr Arg Arg Lys Leu Asp Ala Ile Phe Ala Arg Arg
260     265     270
Lys Glu Tyr Ala Arg Ala Ser Ser Gly Ser Cys Arg Tyr Ala Phe Asn
275     280     285
Pro Gln Leu Asp Lys Ser Phe Ser Arg Gly Phe Thr His Tyr Tyr Leu
290     295     300
His Gly Arg Thr Lys Asp Val Phe Ser Phe Asp Thr Pro Lys Ser Leu
305     310     315     320
Gly Glu Glu Met Gly Thr Met Lys Glu Ala Arg Gly Asn Tyr Leu Thr
325     330     335
Val Ala Gly Leu Lys Ser Phe Asn Asn Gly Asp Gly Met Cys Tyr Ile
340     345     350
Asp Glu Gln Gly Arg Leu Gln Gly Phe Arg Ile Asn Arg Val Glu Gly
355     360     365
Asn Lys Leu Tyr Pro Gln Glu Met Pro Arg Ile Lys Pro Arg Thr Val
370     375     380
Leu Tyr Arg Asn Phe Asp Gln Glu Phe Glu Lys Ile Leu Ala Arg Lys
385     390     395     400
Ser Ser Glu Arg Arg Ile Ala Val Ser Val Arg Leu Thr Asp Thr Pro
405     410     415
Phe Gly Phe Ala Leu Thr Leu Thr Asp Glu Asp Asp Asn Ser Val Thr
420     425     430
Leu Ser Leu Ala Arg Glu Lys Glu Pro Ala Arg Thr Pro Gln Glu Glu
435     440     445

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Asn Leu Lys Thr Gln Leu Ala Lys Phe Gly Asn Thr Pro Phe Glu Ala
 450          455          460
Val Arg Ile Asp Ile Asp Phe Ala Gly Asn Trp Phe Leu Pro Ala Ser
465          470          475          480
Val Leu Ala Asp Phe Ser Arg Gln Ala Val Glu Lys Leu Ile Ser Ala
          485          490          495
Arg Arg Ile Asn Tyr Arg Arg Glu Leu Phe Val Leu Lys Pro Thr Ala
          500          505          510
His Ala Phe Pro Gln Ser Thr Leu Thr Tyr Leu Gly Asn Val Met Asn
          515          520          525
Ala Gln Ala Val Ser Phe Tyr Thr Gly His Gly Val Ala Ser Ile Ala
          530          535          540
Pro Ala Phe Glu Arg Ala Pro Ala Glu Lys Ala Val Leu Met Phe Cys
545          550          555          560
Lys His Cys Leu Arg Tyr Ser Met Gly Trp Cys Pro Val His Gln Arg
          565          570          575
Glu Arg Ser Pro Tyr Arg Glu Pro Tyr Tyr Leu Val Ser Thr Asp Gly
          580          585          590
Lys Arg Phe Arg Leu Glu Phe Asp Cys Lys Asn Cys Gln Met Lys Val
          595          600          605
Asn Ala Val
 610

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<210> 10058

<211> 707

<212> PRT

<213> B.fragilis

<400> 10058

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Glu Val Gln Ile Val Ser Thr Arg Ala Thr Ser Lys Thr Pro Val Ala
 1          5          10          15
Phe Thr Asn Val Ser Lys Glu Glu Leu Lys Lys Gln Asn Phe Gly Gln
          20          25          30
Asp Ile Pro Phe Leu Leu Ser Met Thr Pro Ser Ala Leu Thr Thr Ser
          35          40          45
Asp Ala Gly Ala Gly Ile Gly Tyr Thr Thr Leu Arg Val Arg Gly Thr
          50          55          60
Asp Gly Thr Arg Ile Asn Ile Thr Ala Asn Gly Ile Pro Met Asn Asp
          65          70          75          80
Ala Glu Ser His Thr Leu Phe Trp Val Asn Met Pro Asp Phe Ala Ser
          85          90          95
Ser Val Lys Asp Ile Gln Val Gln Arg Gly Ala Gly Thr Ser Thr Asn
          100          105          110
Gly Ala Gly Ala Phe Gly Ala Ser Val Asn Met Gln Thr Glu Gly Ile
          115          120          125
Ser Met Gln Pro Tyr Ala Glu Ile Asn Ala Ser Tyr Asp Ser Phe Asn
          130          135          140
Ala His Lys Glu Thr Val Lys Phe Gly Thr Gly Leu Leu Lys Asp His
          145          150          155          160
Trp Ala Phe Asp Ala Arg Leu Ser Thr Ile Gly Thr Asp Gly Tyr Ile
          165          170          175
Asp Arg Ala Ser Val Asp Leu Tyr Ser Phe Tyr Ala Gln Gly Gly Tyr
          180          185          190
Phe Ala Asp Asn Thr Ser Val Lys Phe Ile Thr Phe Gly Gly Lys Glu
          195          200          205
Lys Thr Tyr His Ala Trp Asn Tyr Ala Thr Lys Glu Glu Met Lys Lys
          210          215          220
Tyr Gly Pro Arg Phe Asn Ser Cys Gly Met Tyr Thr Asp Asp His Gly
          225          230          235          240

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His Ile Arg Phe Tyr Lys Asp Gln Thr Asp Asn Tyr Leu Gln Met Asn
 245 250 255
 Tyr Gln Leu Leu Leu Asn His Thr Phe Ser Ala Ala Trp Asn Leu Asn
 260 265 270
 Ala Ala Leu His Tyr Thr Lys Gly Asp Gly Tyr Tyr Gln Glu Tyr Lys
 275 280 285
 Glu Asp Arg Ser Leu Lys Glu Tyr Arg Leu His Pro Phe Met Tyr Asp
 290 295 300
 Gly Lys Glu Val Glu Lys Ser Asp Leu Ile Arg Gln Lys Lys Met Asp
 305 310 315 320
 Asn His Phe Gly Gly Gly Val Phe Ser Val Asn Tyr Pro His Gln Asn
 325 330 335
 Met Asp Ala Ser Leu Val Asn Ala Leu Asn Tyr Tyr Asp Gly Trp His
 340 345 350
 Phe Gly Arg Val Ile Trp Val Lys Asn Tyr Ile Gly Glu Leu Leu Pro
 355 360 365
 Asp His Glu Tyr Tyr Arg Asn Lys Ala Lys Lys Thr Asp Gly Asn Leu
 370 375 380
 Tyr Leu Lys Ala Asn Tyr Asn Leu Val Ala Gly Leu Asn Ala Tyr Ala
 385 390 395 400
 Asp Leu Gln Tyr Arg Tyr Ile Asn Tyr Lys Ile His Gly Asp Asn Asp
 405 410 415
 Lys Tyr Asp Tyr Asn Thr Asp Gly Leu Gln Lys Leu Ala Val Asn Asp
 420 425 430
 His Phe Asn Phe Phe Asn Pro Lys Ala Gly Leu Asn Trp Asp Ile Asp
 435 440 445
 Ser Asn Asn Arg Val Tyr Ala Ser Phe Ser Val Ala Gln Lys Glu Pro
 450 455 460
 Thr Arg Asn Asn Tyr Thr Asp Gly Asn Ala Asp Glu Tyr Pro Lys Ala
 465 470 475 480
 Glu Lys Leu Tyr Asp Tyr Glu Leu Gly Tyr Thr Tyr Arg Asn Thr Trp
 485 490 495
 Leu Ser Ala Gly Val Asn Phe Tyr Tyr Met Asp Tyr Lys Asp Gln Leu
 500 505 510
 Val Leu Thr Gly Glu Leu Asn Glu Ile Gly Glu Ala Met Ala Arg Asn
 515 520 525
 Val Pro Asp Ser Tyr Arg Thr Gly Val Glu Leu Met Leu Gly Val Lys
 530 535 540
 Pro Cys Arg Trp Phe Gln Trp Asp Ile Asn Gly Thr Leu Ser Lys Asn
 545 550 555 560
 Arg Val Lys Asn Phe Thr Glu Lys Leu Tyr Glu Asp Glu Trp Lys Asn
 565 570 575
 Pro Ile Glu Val Glu His Gly Asn Thr Pro Ile Ala Phe Ser Pro Asp
 580 585 590
 Phe Ile Leu Asn Asn Arg Phe Ser Phe Ser His Lys Gly Phe Glu Ala
 595 600 605
 Ala Leu Gln Ser Gln Tyr Val Ser Lys Gln Tyr Met Ser Asn Ala Lys
 610 615 620
 Gln Ala Glu Gln Thr Leu Asp Ala Tyr Phe Val Ser Asn Leu Asn Leu
 625 630 635 640
 Ala Tyr Thr Phe Gln Leu Arg His Val Lys Ser Val Thr Val Gly Phe
 645 650 655
 Thr Ile Tyr Asn Leu Phe Asn Glu Lys Tyr Glu Asn Asn Gly Tyr Ala
 660 665 670
 Gly Ser Gly Tyr Thr Leu Lys Asp Gly Lys Pro Glu Arg Tyr Asn Tyr
 675 680 685
 Ala Gly Tyr Ala Ala Gln Ala Gly Thr Asn Val Met Gly Asn Ile Ser
 690 695 700
 Ile Arg Phe

705

<210> 10059
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 10059
 Lys Val Lys Met Lys Asn Val Ile Asn Lys Asn Thr Ile Leu Ala Leu
 1 5 10 15
 Met Val Ile Gly Met Met Cys Phe Trp Gly Ser Met Asn Ala Asn Ala
 20 25 30
 Gln Gln Phe Asn Val Gln Gly Asp Leu Val Ser Ser Tyr Val Trp Arg
 35 40 45
 Gly Met Tyr Gln Thr Gly Ala Ser Ile Gln Pro Thr Leu Gly Phe Ser
 50 55 60
 Val Gly Asn Phe Ser Leu Thr Ala Trp Gly Ser Thr Asp Phe Asp Gly
 65 70 75 80
 Thr Ser Ala Ser Ala Gly Ala Ala Ala Lys Glu Ile Asp Leu Thr Ala
 85 90 95
 Ala Tyr Thr Ile Ser Arg Ser Gly Leu Thr Gly Leu Val Ala Asp Leu
 100 105 110
 Gly Trp Gly Arg Thr Gly Ser Thr
 115 120

<210> 10060
 <211> 81
 <212> PRT
 <213> B.fragilis

<400> 10060
 Leu Val Lys Ile Val Leu Leu Ala Glu Leu Val Leu Thr Ser Val Arg
 1 5 10 15
 Leu Ala Leu Ser Leu Lys Val Ile Phe Thr Gln Leu Ile Leu Ser Ser
 20 25 30
 Val Gln Ile Val Val Leu Ala Gln Met Tyr Val Leu Leu Lys Gln Phe
 35 40 45
 Thr Gln Leu Asn Asn Thr Ile Pro Asn Asn Lys Asp Lys Gly Cys Leu
 50 55 60
 Pro Asn Gly Lys Gln Pro Leu Phe Ile Ser Phe Gln Thr Phe Gly Lys
 65 70 75 80
 Leu

<210> 10061
 <211> 124
 <212> PRT
 <213> B.fragilis

<400> 10061
 Asn Met Glu Ile Asn Glu Leu Thr Gly Leu Ile Leu Lys Lys Ala Tyr
 1 5 10 15
 Glu Val His Thr Val Leu Gly Pro Gly Leu Leu Glu Ser Ala Tyr Glu
 20 25 30
 Glu Cys Leu Cys Tyr Glu Leu Ile Gln Cys Gly Leu Asn Val Glu Lys
 35 40 45
 Gln Lys Ala Leu Pro Val Val Tyr Lys Asn Ile Lys Val Asp Ala Gly
 50 55 60
 Tyr Arg Leu Asp Ile Val Val Asn Asn Ala Val Ile Ile Glu Ile Lys

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<210> 10062
<211> 111
<212> PRT
<213> B.fragilis
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<210> 10063
<211> 65
<212> PRT
<213> B.fragilis
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<210> 10064
<211> 212
<212> PRT
<213> B.fragilis
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<400> 10064															
Ser	Arg	Thr	Val	Met	Lys	Thr	Met	Lys	Tyr	Ile	Ser	Leu	Arg	Val	Leu
1				5					10					15	
Ala	Ile	Ala	Ala	Leu	Ala	Leu	Ala	Phe	Ala	Met	Pro	Ala	Lys	Ala	Gln
			20					25					30		
Leu	Ser	Asp	Asn	Gly	Tyr	Ala	Asn	Val	Asp	Trp	Gln	Phe	Asn	Ala	Pro
		35					40					45			
Leu	Lys	Asn	His	Phe	Ala	Asp	Lys	Ala	Ser	Gly	Trp	Gly	Met	Asn	Phe

50		55		60																
Glu	Gly	Gly	Tyr	Phe	Val	Thr	Pro	Asn	Leu	Gly	Leu	Gly	Leu	Phe	Met					
65					70					75					80					
Asn	Tyr	Ser	Ser	Asn	His	Glu	Tyr	Phe	Pro	Arg	Ala	Thr	Phe	Pro	Val					
				85					90					95						
Gly	Glu	Gly	Thr	Val	Asn	Thr	Asp	Gln	Gln	His	Thr	Ile	Phe	Gln	Leu					
			100					105					110							
Pro	Phe	Gly	Ala	Ala	Ala	Arg	Tyr	Gln	Met	Asn	Arg	Gly	Gly	Ala	Trp					
		115					120					125								
Gln	Pro	Tyr	Phe	Gly	Val	Lys	Leu	Gly	Ala	Asn	Tyr	Ala	Lys	Val	Arg					
		130				135					140									
Ser	Asn	Tyr	Asn	Met	Phe	Glu	Thr	Arg	Asp	Asn	Thr	Trp	Gly	Phe	Tyr					
145					150					155					160					
Val	Ser	Pro	Glu	Ile	Gly	Leu	Asn	Val	Tyr	Pro	Trp	Ala	Tyr	Gly	Pro					
			165						170					175						
Gly	Leu	His	Ile	Ala	Val	Tyr	Tyr	Ser	Tyr	Ala	Thr	Asn	Lys	Ala	Asn					
			180					185					190							
Val	Leu	Thr	Tyr	Asn	Val	Asp	Lys	Leu	Asn	Asn	Phe	Gly	Phe	Arg	Val					
		195					200					205								
Gly	Leu	Ala	Phe																	
	210																			

<210> 10065
 <211> 72
 <212> PRT
 <213> B.fragilis

<400> 10065																				
Arg	Lys	Tyr	Val	Gly	Val	Pro	Ala	Ile	Asn	Thr	Val	Val	Glu	Thr	Val					
1				5					10				15							
Asp	Thr	Ser	Phe	Gly	Ile	Arg	Asp	Asn	Val	Leu	Thr	Val	Gly	Leu	Leu					
			20				25						30							
Thr	Asn	Lys	Ser	Gly	Met	Trp	Tyr	Glu	Cys	Trp	Gly	Gly	Thr	Leu	Arg					
			35				40					45								
Trp	Phe	Lys	Thr	Lys	Arg	Ser	Leu	Pro	Arg	Glu	Val	Arg	Gly	Ile	Gly					
	50					55					60									
Phe	Lys	Pro	Thr	Pro	Leu	Thr	Phe													
65					70															

<210> 10066
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 10066																				
Ser	Thr	Ser	Thr	Pro	Phe	Asn	Gly	Leu	Phe	Arg	Gln	Ser	Ala	Ala	Leu					
1				5					10				15							
Ser	Leu	Leu	Arg	Leu	His	Ile	Thr	Pro	Thr	Gly	Ser	Thr	Gly	Ile	Leu					
			20					25					30							
Thr	Cys	Ser	Ala	Ile	Gly	Leu	Thr	Val	Arg	Leu	Ser	Leu	Arg	Thr	Arg					
		35				40						45								
Leu	Thr	Leu	Ile	Arg	Leu	Ala	Leu	Ile	Arg	Lys	Pro									
	50					55					60									

<210> 10067
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 10067

Ser His Ala Ala Leu Ser Leu Gln Gln Ala Phe Val Glu Ser Gln Ala
 1 5 10 15
 Thr Glu Ser Leu Leu Gln Gln Val Ala Ala Asp Ser Ala Ala Ser Thr
 20 25 30
 Ala Thr Glu Val Glu Ser Ala Ala Ala Ser Glu Leu Ala Val Leu Leu
 35 40 45
 Pro Pro His Glu Thr Ile Ala Lys Glu Asn Ala Thr Ile Ala Ala Ala
 50 55 60
 Lys Lys Asn Phe Val Phe Ile Leu Lys Ile Phe Ala Leu Asn Val Tyr
 65 70 75 80
 Lys Tyr Ser Ile Ala Asn Ile Asn Lys Asn Lys
 85 90

<210> 10068

<211> 337

<212> PRT

<213> B.fragilis

<400> 10068

Ile Met Lys Ala Leu Val Thr Gly Ala Ala Gly Phe Ile Gly Ser Tyr
 1 5 10 15
 Thr Val Lys Ala Leu Val Ala Gln Gly Cys Glu Val Val Gly Leu Asp
 20 25 30
 Asn Ile Asn Ser Tyr Tyr Asp Val Gln Leu Lys Tyr Asp Arg Leu Ala
 35 40 45
 Asp Thr Gly Ile Thr Lys Glu Ser Ile Glu Lys Asp Ile Leu Leu Pro
 50 55 60
 Ser Ala Lys Tyr Pro Ser Tyr Arg Phe Ile Lys Met Asp Leu Thr Asp
 65 70 75 80
 Arg Glu Gly Leu Thr Asn Leu Phe Lys Asp Glu His Phe Asp Ile Val
 85 90 95
 Val Asn Leu Ala Ala Gln Ala Gly Val Arg Tyr Ser Ile Glu Asn Pro
 100 105 110
 Tyr Ala Tyr Ile Glu Ser Asn Ile Val Gly Phe Leu Asn Leu Leu Glu
 115 120 125
 Cys Cys Arg His Tyr Pro Val Asn His Leu Val Tyr Ala Ser Ser Ser
 130 135 140
 Ser Ile Tyr Gly Leu Asn Asp Lys Val Pro Tyr Ala Glu Thr Asp Lys
 145 150 155 160
 Ala Asp Ser Pro Val Ser Leu Tyr Ala Ala Thr Lys Lys Ser Asn Glu
 165 170 175
 Leu Met Ala His Ala Tyr Ser Lys Leu Tyr Ser Ile Pro Thr Thr Gly
 180 185 190
 Val Arg Phe Phe Thr Val Tyr Gly Pro Trp Gly Arg Pro Asp Met Ala
 195 200 205
 Pro Cys Leu Phe Met Lys Ala Ile Leu Asn Gly Asp Pro Ile Lys Val
 210 215 220
 Phe Asn Asn Gly Gln Met Arg Arg Asp Phe Thr Tyr Ile Asp Asp Ile
 225 230 235 240
 Ile Ala Gly Leu Met Lys Ile Ile Ala His Pro Ser Ala Asp Pro Ile
 245 250 255
 Pro Phe Tyr Ile Tyr Asn Ile Gly Asn Ser Ala Pro Val Glu Leu Met
 260 265 270
 Asp Phe Ile Ser Val Ile Glu Lys Thr Ala Gly Lys Thr Ala Ile Lys
 275 280 285
 Gln Met Met Gly Met Gln Pro Gly Asp Val Val Cys Thr Tyr Ala Asp
 290 295 300
 Thr Gly Arg Leu Glu Lys Asp Phe Gly Tyr Lys Pro Ser Thr Ser Ile

305 310 315 320
 Glu Glu Gly Ile Gln Lys Phe Tyr Asp Trp Tyr Val Gly Tyr Phe Asn
 325 330 335
 Lys

<210> 10069
 <211> 474
 <212> PRT
 <213> B.fragilis

<400> 10069
 Phe Val Asn His Lys Ile Ile Asn Lys Lys Met Asn Thr Leu Phe Asp
 1 5 10 15
 Lys Ile Trp Asp Ala His Val Val Thr Thr Val Glu Asp Gly Pro Thr
 20 25 30
 Gln Leu Tyr Ile Asp Arg Leu Tyr Cys His Glu Val Thr Ser Pro Gln
 35 40 45
 Ala Phe Ala Gly Leu Arg Ala Arg Gly Ile Lys Val Phe Arg Pro Glu
 50 55 60
 Lys Val Tyr Cys Met Pro Asp His Asn Thr Pro Thr His Asp Gln Asp
 65 70 75 80
 Lys Pro Ile Glu Asp Pro Val Ser Lys Thr Gln Val Asp Thr Leu Thr
 85 90 95
 Lys Asn Ala Ala Asp Phe Gly Leu Thr His Tyr Gly Met Met Asp Lys
 100 105 110
 Arg Asn Gly Ile Ile His Val Val Gly Pro Glu Arg Gly Leu Thr Leu
 115 120 125
 Pro Gly Met Thr Ile Val Cys Gly Asp Ser His Thr Ser Thr His Gly
 130 135 140
 Ala Met Gly Ala Val Ala Phe Gly Ile Gly Thr Ser Glu Val Glu Met
 145 150 155 160
 Val Leu Ala Ser Gln Cys Ile Leu Gln Ser Arg Pro Lys Thr Met Arg
 165 170 175
 Ile Thr Val Asp Gly Lys Leu Gly Lys Gly Val Thr Ala Lys Asp Ile
 180 185 190
 Ala Leu Tyr Met Met Ser Lys Met Thr Thr Ser Gly Ala Thr Gly Tyr
 195 200 205
 Phe Val Glu Tyr Ala Gly Glu Ala Ile Arg Ser Leu Thr Met Glu Gly
 210 215 220
 Arg Leu Thr Leu Cys Asn Leu Ser Ile Glu Met Gly Ala Arg Gly Gly
 225 230 235 240
 Met Ile Ala Pro Asp Glu Val Thr Phe Glu Tyr Ile Lys Gly Arg Glu
 245 250 255
 Asn Ala Pro Gln Gly Glu Glu Trp Asp Gln Ala Val Gln Tyr Trp Lys
 260 265 270
 Thr Leu Lys Ser Glu Asp Asp Ala Val Phe Asp Lys Glu Val His Phe
 275 280 285
 Asp Ala Ala Asp Ile Glu Pro Met Ile Thr Tyr Gly Thr Asn Pro Gly
 290 295 300
 Met Gly Met Gly Ile Thr Gln His Ile Pro Thr Thr Asp Gly Met Asn
 305 310 315 320
 Glu Thr Thr Lys Ala Ser Phe Leu Lys Ser Leu Asp Tyr Met Gly Phe
 325 330 335
 Gln Pro Gly Glu Ala Leu Leu Gly Lys Lys Ile Asp Tyr Val Phe Leu
 340 345 350
 Gly Ala Cys Thr Asn Gly Arg Ile Glu Asp Phe Arg Ala Phe Ala Ser
 355 360 365
 Ile Val Lys Gly His Gln Lys Ala Glu His Val Ile Ala Trp Leu Val

370	375	380
Pro Gly Ser Trp Met Val Asp Ala Gln Ile Arg Glu Glu Gly Leu Asp		
385	390	395
Lys Ile Leu Glu Asp Ala Gly Phe Ala Ile Arg Gln Pro Gly Cys Ser		400
	405	410
Ser Cys Leu Ala Met Asn Asp Asp Lys Ile Pro Ala Gly Lys Tyr Ser		415
	420	425
Val Ser Thr Ser Asn Arg Asn Phe Glu Gly Arg Gln Gly Pro Gly Ala		430
	435	440
Arg Thr Leu Leu Ala Ser Pro Leu Val Ala Ala Ala Ala Ala Ile Thr		445
	450	455
Gly Val Ile Ala Asp Pro Arg Glu Leu Met		460
465	470	

<210> 10070

<211> 201

<212> PRT

<213> B.fragilis

<400> 10070

Ile Val Asn Lys Lys Met Lys Ala Lys Phe Asn Ile Leu Thr Ser Thr		
1	5	10
Cys Val Pro Leu Pro Leu Glu Asn Val Asp Thr Asp Gln Ile Ile Pro		15
	20	25
Ala Arg Phe Leu Lys Ala Thr Thr Lys Glu Gly Phe Gly Glu Asn Leu		30
	35	40
Phe Arg Asp Trp Arg Tyr Asp Lys Gln Gly Asn Lys Ile Asp Ser Phe		45
	50	55
Val Leu Asn Asp Pro Thr Tyr Gly Gly Gln Ile Leu Val Ala Gly Lys		60
65	70	75
Asn Phe Gly Ser Gly Ser Ser Arg Glu His Ala Ala Trp Ala Ile Ala		80
	85	90
Asp Tyr Gly Phe Arg Val Val Val Ser Ser Phe Phe Ala Asp Ile His		95
	100	105
Lys Asn Asn Glu Leu Asn Asn Phe Val Leu Pro Val Val Thr Glu		110
	115	120
Glu Phe Leu Ala Glu Leu Phe Asp Ser Ile Phe Lys Asn Pro Lys Met		125
	130	135
Glu Val Glu Val Asn Leu Pro Glu Gln Thr Ile Thr Asn Lys Ala Thr		140
145	150	155
Gly Lys Ser Glu His Phe Glu Ile Asn Ala Tyr Lys Lys His Cys Leu		160
	165	170
Met Asn Gly Leu Asp Asp Ile Asp Phe Leu Leu Thr Asn Lys Asp Lys		175
	180	185
Ile Glu Gln Trp Glu Lys Ala Ser Lys		190
	195	200

<210> 10071

<211> 357

<212> PRT

<213> B.fragilis

<400> 10071

Leu Leu Asn Asn Met Asp Phe Lys Ile Ala Val Leu Ala Gly Asp Gly		
1	5	10
Ile Gly Pro Glu Ile Ser Val Gln Gly Val Glu Val Met Ser Ala Val		15
	20	25
Cys Glu Lys Phe Gly His Lys Val Asn Tyr Glu Tyr Ala Ile Cys Gly		30
	35	40
		45

Ala Asp Ala Ile Asp Lys Val Gly Asp Pro Phe Pro Glu Glu Thr Tyr
 50 55 60
 Arg Val Cys Lys Asn Ala Val Leu Phe Ser Ala Val Gly Asp
 65 70 75 80
 Pro Lys Phe Asp Asn Asp Pro Thr Ala Lys Val Arg Pro Glu Gln Gly
 85 90 95
 Leu Leu Ala Met Arg Lys Lys Leu Gly Leu Phe Ala Asn Ile Arg Pro
 100 105 110
 Val Gln Thr Phe Lys Cys Leu Val His Lys Ser Pro Leu Arg Ala Glu
 115 120 125
 Leu Val Glu Gly Ala Asp Phe Leu Cys Ile Arg Glu Leu Thr Gly Gly
 130 135 140
 Met Tyr Phe Gly Glu Lys Tyr Gln Asp Asn Asp Lys Ala Tyr Asp Thr
 145 150 155 160
 Asn Met Tyr Thr Arg Pro Glu Ile Glu Arg Ile Leu Lys Val Gly Phe
 165 170 175
 Glu Tyr Ala Met Lys Arg Arg Lys His Leu Thr Val Val Asp Lys Ala
 180 185 190
 Asn Val Leu Ala Ser Ser Arg Leu Trp Arg Gln Ile Ala Gln Glu Met
 195 200 205
 Ala Pro Gln Tyr Pro Glu Val Thr Thr Asp Tyr Met Phe Val Asp Asn
 210 215 220
 Ala Ala Met Lys Met Ile Gln Glu Pro Lys Phe Phe Asp Val Met Val
 225 230 235 240
 Thr Glu Asn Thr Phe Gly Asp Ile Leu Thr Asp Glu Gly Ser Val Ile
 245 250 255
 Ser Gly Ser Met Gly Leu Leu Pro Ser Ala Ser Thr Gly Glu Ser Thr
 260 265 270
 Pro Val Phe Glu Pro Ile His Gly Ser Trp Pro Gln Ala Lys Gly Leu
 275 280 285
 Asn Ile Ala Asn Pro Leu Ala Gln Ile Leu Ser Val Ala Met Leu Phe
 290 295 300
 Glu Tyr Phe Asp Cys Lys Ala Glu Gly Ala Leu Ile Arg Lys Ala Val
 305 310 315 320
 Asp Ala Ser Leu Asp Ala Asn Val Arg Thr Pro Glu Ile Gln Val Glu
 325 330 335
 Gly Gly Glu Lys Phe Gly Thr Lys Glu Val Gly Ala Trp Ile Val Asp
 340 345 350
 Tyr Ile Arg Lys Ala
 355

<210> 10072

<211> 528

<212> PRT

<213> B.fragilis

<400> 10072

Leu Asp Val Lys Ala Pro Ser Asn Gln Leu Pro Met Lys Ser Lys Phe
 1 5 10 15
 Leu Pro Phe Leu Leu Leu Leu Ala Val Leu Pro Val Leu Ile Phe Arg
 20 25 30
 Asp Tyr Thr Pro Ser Asn Glu Leu Arg Tyr Leu Ser Ile Val Asp Glu
 35 40 45
 Ala Leu Arg Asn Gly Asp Ile Phe Thr Phe Thr Asn His Gly Ile Gln
 50 55 60
 Tyr Ala Asp Lys Pro Pro Leu Tyr Phe Trp Ile Leu Met Leu Gly Lys
 65 70 75 80
 Trp Leu Leu Gly Asn His Ala Met Trp Phe Ala Ser Leu Phe Ser Phe
 85 90 95

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Ile Pro Ala Leu Val Ile Met Leu Val Met Asp Arg Trp Val Glu Arg
      100      105      110
Glu Val Ser Val Ala Asn Arg Leu Ser Ala Gln Leu Met Leu Met Ser
      115      120      125
Cys Gly Leu Phe Leu Gly Leu Ala Val Val Leu Arg Met Asp Met Leu
      130      135      140
Met Cys Met Phe Ile Val Leu Ala Leu Arg Thr Phe Tyr Gln Met Leu
      145      150      155      160
Lys Gly Gln Gly Ser Lys Asn Trp Asn Gln Phe Leu Phe Pro Phe Tyr
      165      170      175
Ile Phe Met Ala Val Phe Ser Lys Gly Pro Val Gly Ile Leu Val Pro
      180      185      190
Leu Gly Ser Thr Phe Ile Phe Leu Leu Ile Thr Gly Arg Val Lys Thr
      195      200      205
Phe Gly Arg Tyr Trp Gly Trp Lys Thr Phe Ala Val Leu Leu Leu Gly
      210      215      220
Cys Phe Ile Trp Phe Gly Gly Val Cys Trp Glu Glu Gly Gly Leu Thr
      225      230      235      240
Tyr Leu His Asp Leu Leu Phe Arg Gln Thr Val Gly Arg Ala Val Asn
      245      250      255
Ala Phe Asp His Ser Ala Pro Phe Tyr Tyr Phe Ile Ser Val Trp
      260      265      270
Tyr Ser Leu Ala Pro Trp Ala Leu Phe Leu Val Gly Ile Ile Ile Ala
      275      280      285
Gly Ala Cys Arg Arg Leu Ile Arg Ser Asp Met Glu Arg Phe Phe Met
      290      295      300
Val Ile Ile Leu Thr Thr Leu Leu Met Leu Ser Cys Phe Ser Gly Lys
      305      310      315      320
Leu Ala Val Tyr Leu Ala Pro Thr Phe Pro Phe Phe Val Tyr Leu Ala
      325      330      335
Val Leu Leu Leu Ser His Phe Arg Trp Asn Gln Trp Leu Ala Leu Thr
      340      345      350
Leu Leu Leu Pro Ala Val Val Phe Val Ala Gly Leu Pro Ala Leu Ile
      355      360      365
Val Leu Gly Arg Met Pro Gly Thr Glu Phe Leu Gly Gln Lys Leu Phe
      370      375      380
Tyr Val Ala Gly Gly Ile Leu Thr Val Ser Gly Gly Thr Ala Leu Tyr
      385      390      395      400
Phe Leu Tyr Arg Lys Lys Ser Leu Asn Lys Thr Ile Asn Val Leu Ala
      405      410      415
Leu Gly Leu Phe Cys Ala Val Phe Val Gly Gly Trp Asp Val Pro Ala
      420      425      430
Ile Asn Gly Glu Leu Gly Tyr Ser Glu Leu Cys Arg Lys Ala Val Glu
      435      440      445
Leu Ser Lys Glu Lys Asn Val Ser Gly Tyr Cys Val Leu Asn Val Arg
      450      455      460
Arg Ser Glu Asn Met Asp Val Tyr Leu His Glu Arg Val Lys Glu Val
      465      470      475      480
Thr Glu Glu Glu Val Leu Asp Asn Lys Tyr Gln Asn Thr Ile Leu Met
      485      490      495
Ile Ser Asn Lys Lys Ile Arg Ser Asn Lys Lys Leu Glu Glu Phe Val
      500      505      510
Asn Gly Lys Glu His Tyr Val Ile Gly Arg Phe Ser Val Met Val Leu
      515      520      525

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<210> 10073

<211> 63

<212> PRT

<213> B.fragilis

<400> 10073

Pro Pro Thr Lys Leu Asp Asp Ile Pro Ser Glu Cys Arg Val Val Pro
 1 5 10 15
 Phe Gly Asn Leu Arg Ile Lys Gly His Leu His Leu Pro Glu Ala Tyr
 20 25 30
 Arg Ser Leu Ser Arg Pro Ser Ser Pro Pro Arg Ala Lys Ala Ser Ala
 35 40 45
 Met Arg Pro Tyr Leu Leu Ser Phe Ile Ala Arg Asp His Phe Leu
 50 55 60

<210> 10074

<211> 1032

<212> PRT

<213> B.fragilis

<400> 10074

Cys Met Thr Lys Arg Thr Asn Leu Phe Pro Ser Leu Ile Lys Thr Arg
 1 5 10 15
 Glu Met Asn Cys Leu Lys Ile Ala Gly Ala Ser Leu Leu Leu Cys
 20 25 30
 Ile Ser Pro Gln Phe Ala Val Ala Asp Gly Leu Lys Gln Asp Ala Val
 35 40 45
 Thr Ile Met Gln Gln Gln Asn Leu Lys Val Ser Gly Val Val Thr Asp
 50 55 60
 Glu Ala Gly Glu Pro Leu Ile Gly Val Ser Val Leu Val Lys Gly Thr
 65 70 75 80
 Thr Leu Gly Asn Ile Thr Asp Leu Asn Gly Arg Phe Ser Leu Asp Val
 85 90 95
 Pro Glu Gly Ser Ile Leu Glu Ile Ser Tyr Ile Gly Tyr Lys Thr Gln
 100 105 110
 Ser Ile Lys Ala Gln Arg Glu Pro Met Asn Ile Val Leu Lys Glu Asp
 115 120 125
 Ala Gln Lys Leu Asp Glu Val Val Val Val Gly Phe Gly Thr Gln Lys
 130 135 140
 Lys Val Asn Leu Thr Gly Ser Val Ser Ala Val Thr Gly Asp Asp Ile
 145 150 155 160
 Ser Lys Arg Pro Val Ala Asn Ala Ala Ile Leu Leu Gln Gly Gln Ile
 165 170 175
 Pro Gly Leu Arg Val Asn Gln Gly Leu Gly Gln Pro Gly Gly Glu Gly
 180 185 190
 Thr Ser Phe Arg Ile Arg Gly Gln Gly Thr Phe Ser Ser Ala Gly Ser
 195 200 205
 Asp Pro Leu Ile Leu Ile Asn Gly Val Pro Gly Ser Met Thr Asn Leu
 210 215 220
 Asp Pro Ser Val Ile Glu Ser Val Ser Val Leu Lys Asp Ala Ala Ser
 225 230 235 240
 Ala Ala Ile Tyr Gly Ala Arg Ala Ala Asn Gly Val Ile Leu Val Thr
 245 250 255
 Thr Lys Gln Gly Ala Val Gly Asp Lys Val His Ile Ser Tyr His Gly
 260 265 270
 Asn Val Gly Leu His Thr Pro Thr Lys Leu Tyr Asp Arg Val Thr Asn
 275 280 285
 Ser Val Glu Tyr Met Glu Leu Ala Asn Leu Ala Trp Lys Asn Ser Gly
 290 295 300
 Thr Gly Lys Gln Tyr Thr Gln Asp Gln Ile Asn Leu Tyr Arg Asn Asn
 305 310 315 320
 Val Gly Asp Pro Gln Tyr Pro Asn Phe Asp Trp Gln Asp Tyr Met Phe
 325 330 335

Arg Thr Ala Val Val Gln Thr His Asn Leu Ser Met Ala Gly Ser Thr
 340 345 350
 Glu Lys Thr Thr Tyr Asn Val Ala Leu Asn Phe Val Asp Gln Pro Gly
 355 360 365
 Thr Met Arg Gly Phe Lys Tyr Arg Lys Tyr Asn Ala Thr Ile Asp Leu
 370 375 380
 Thr Ala Arg Ile Thr Asn Phe Ile Lys Val Gly Thr Tyr Ala Asn Leu
 385 390 395 400
 Met Tyr Gly Glu Thr Glu Gln Pro Arg Gln Gly Gln Asn Asp Ala Phe
 405 410 415
 Leu Ser Thr Leu Ser Gln Ala Pro Thr Tyr Met Pro Trp Leu Pro Asp
 420 425 430
 Asp Gly Thr Gly Ile Arg Arg Trp Thr Ser Ser Ala Tyr Ser Phe Glu
 435 440 445
 Ser His Asn Lys Asn Met Pro Ala Ile Ile Gly Asp Asp Ala Met Lys
 450 455 460
 Arg Asp Asn Asn Phe Asp Ile Asn Ala Gln Leu Trp Leu Glu Ile Asn
 465 470 475 480
 Leu Ala Lys Gly Leu Thr Trp Tyr Thr Lys Gly Ala Ala Arg Leu Gln
 485 490 495
 Ser Asn Lys Ser Lys Asp Trp Arg Gly Ser Thr Thr Tyr Thr Tyr Asp
 500 505 510
 Tyr His Thr Gly Glu Arg Ser Ser Glu Leu Asp Lys Gly Gly Leu Gly
 515 520 525
 Leu Ser Val Gly Asp Gly Arg Arg Phe Tyr Thr Asn Leu Tyr Ser Tyr
 530 535 540
 Leu Lys Tyr Asp Leu Ser Leu Val Asp Asn Ala His Asn Phe Ser Leu
 545 550 555 560
 Met Val Gly Tyr Asn Gln Glu Ser Glu Lys Tyr Glu Thr Leu Asn Ala
 565 570 575
 Tyr Arg Lys Asp Phe Ala Phe Asp Leu Pro Val Leu Asn Ala Gly Gly
 580 585 590
 Thr Ala Asp Trp Ser Asn Ser Gly Gly Glu Glu Glu Trp Ala Ile Gln
 595 600 605
 Ser Leu Phe Gly Arg Phe Asn Tyr Asp Phe Lys Glu Arg Tyr Leu Phe
 610 615 620
 Glu Ala Asn Met Arg Tyr Asp Gly Thr Ser Arg Ile Ser Asp Glu Asn
 625 630 635 640
 Arg Trp Gly Val Phe Pro Ser Phe Ser Val Ala Trp Arg Ala Thr Glu
 645 650 655
 Glu Glu Phe Ile Lys Asn Leu Asn Leu Asn Trp Leu Asn Asn Phe Lys
 660 665 670
 Leu Arg Gly Ser Trp Gly Gln Leu Gly Asn Gln Asn Ile Gly Leu Tyr
 675 680 685
 Pro Tyr Gln Ala Met Ile Ser Gly Val Asp Asp Tyr Pro Phe Thr Lys
 690 695 700
 Thr Ser Asp Gly Val Ile Ile Gly Tyr Gln Gln Thr Ala Tyr Ala Asn
 705 710 715 720
 Arg Asn Ile Lys Trp Glu Thr Thr Thr Ile Thr Asp Ile Gly Phe Asp
 725 730 735
 Leu Gln Val Phe Asp Gly Leu Ser Val Thr Phe Asp Trp Tyr Lys Lys
 740 745 750
 Thr Thr Asp Asp Ile Leu Arg Ser Ser Gln Val Ser Ser Leu Leu Gly
 755 760 765
 Leu Ser Ala Pro Thr Val Asn Asn Gly Ser Val Glu Asn Lys Gly Ile
 770 775 780
 Glu Val Ala Leu Asn Tyr Ala Asn Met Val Lys Gly Gly Thr Phe Arg
 785 790 795 800
 Gly Phe Arg Tyr Asn Ala Gly Val Tyr Phe Asp Arg Ser Arg Asn Lys

805 810 815
 Leu Thr Glu Phe Gly Ala Glu Glu Ile Gly Ser Tyr Ser Ile Lys Arg
 820 825 830
 Glu Gly Leu Pro Tyr Asp Glu Tyr Tyr Met Leu Glu Cys Ile Gly Val
 835 840 845
 Phe Ala Asp Gln Ala Glu Ile Asn Ala Ser Pro Lys Gln Phe Asn Asp
 850 855 860
 Asn Thr Gln Pro Gly Asp Leu Lys Tyr Lys Asp Ile Ser Gly Pro Asp
 865 870 875 880
 Gly Lys Pro Asp Gly Val Ile Asp Asn Tyr Asp Arg Arg Thr Phe Ser
 885 890 895
 Gly Arg Phe Pro Gly Phe Glu Tyr Gly Ile Asn Ala Ser Ala Thr Trp
 900 905 910
 Lys Gly Phe Asp Leu Ser Leu Ile Gly Gln Gly Val Ala Asp Lys Lys
 915 920 925
 Tyr Tyr Thr Thr Asp Trp Gly Val Gln Pro Phe Met Gln Gly Ser Ser
 930 935 940
 Pro Asn Lys Asp Tyr Ile Lys His Met Trp Thr Glu Glu Asn Pro Tyr
 945 950 955 960
 Gly Ala Lys His Pro Lys Leu Tyr Trp Gln Asp Met Gly Gly Gly Lys
 965 970 975
 Asn Thr Arg Pro Asn Ser Tyr Tyr Leu Lys Asp Ala Ser Phe Phe Arg
 980 985 990
 Leu Lys Asn Val Thr Leu Gly Tyr Thr Leu Pro Arg Val Trp Thr Glu
 995 1000 1005
 Lys Ala Asn Ile Ser Lys Val Arg Ile Tyr Phe Ser Gly Asp Asn Leu
 1010 1015 1020
 Leu Thr Leu Val Phe Thr Thr Gly
 1025 1030

<210> 10075

<211> 60

<212> PRT

<213> B.fragilis

<400> 10075

Ala His Gly Phe Arg Asp Tyr Phe Thr Leu Leu Phe Glu Val Leu Phe
 1 5 10 15
 Thr Phe Pro Ser Gln Tyr Trp Phe Ala Ile Gly Leu Ser Gly Val Phe
 20 25 30
 Ser Leu Thr Gly Trp Ser Arg Leu Ile His Ala Glu Phe Leu Val Leu
 35 40 45
 Arg Ala Thr Gln Asp Thr Thr Thr Leu Arg Leu Pro
 50 55 60

<210> 10076

<211> 88

<212> PRT

<213> B.fragilis

<400> 10076

Ser Leu Pro Arg Ala His Ile Asp Gly Gly Val Trp His Leu Asp Val
 1 5 10 15
 Gly Ser Ser His Pro Gly Ala Gly Glu Gly Pro Lys Gly Trp Ala Val
 20 25 30
 Arg Pro Leu Lys Trp His Ala Ser Trp Val Gln Asn Val Val Arg Gln
 35 40 45
 Phe Gly Leu Tyr Leu Ser Trp Ala Tyr Glu Ile Cys Val Ala Leu Thr
 50 55 60

Leu Val Arg Glu Asp Arg Val Gly Leu Thr Ser Gly Leu Pro Val Val
 65 70 75 80
 Pro Pro Gly Ala Leu Pro Gly Ile
 85

<210> 10077

<211> 500

<212> PRT

<213> B.fragilis

<400> 10077

Lys Asn Met Ser Asp Arg Leu Phe Ile Phe Asp Thr Thr Leu Arg Asp
 1 5 10 15
 Gly Glu Gln Val Pro Gly Cys Gln Leu Asn Thr Val Glu Lys Ile Gln
 20 25 30
 Val Ala Lys Ala Leu Glu Val Leu Gly Val Asp Val Ile Glu Ala Gly
 35 40 45
 Phe Pro Ile Ser Ser Pro Gly Asp Phe Asn Ser Val Ile Glu Ile Ser
 50 55 60
 Lys Ala Val Thr Trp Pro Thr Ile Cys Ala Leu Thr Arg Ala Val Gln
 65 70 75 80
 Lys Asp Ile Asp Val Ala Val Asp Ala Leu Lys Phe Ala Lys His Lys
 85 90 95
 Arg Ile His Thr Gly Ile Gly Thr Ser Asp Ser His Ile Lys Tyr Lys
 100 105 110
 Phe Asn Ser Thr Arg Glu Glu Ile Ile Glu Arg Ala Val Ala Ala Val
 115 120 125
 Lys Tyr Ala Arg Arg Phe Val Asp Asp Val Glu Phe Tyr Ala Glu Asp
 130 135 140
 Ala Gly Arg Thr Asp Asn Glu Tyr Leu Ala Arg Val Ile Glu Ala Val
 145 150 155 160
 Ile Lys Ala Gly Ala Thr Val Val Asn Ile Pro Asp Thr Thr Gly Tyr
 165 170 175
 Cys Leu Pro Ser Glu Tyr Gly Ala Lys Ile Lys Tyr Leu Val Asp His
 180 185 190
 Val Ala Gly Ile Glu Asn Ala Ile Ile Ser Thr His Cys His Asn Asp
 195 200 205
 Leu Gly Met Ala Thr Ala Asn Thr Met Ala Gly Ile Leu Asn Gly Ala
 210 215 220
 Arg Gln Val Glu Val Thr Ile Asn Gly Ile Gly Glu Arg Ala Gly Asn
 225 230 235 240
 Thr Ala Leu Glu Glu Ile Ala Met Ile Ile Lys Ser His His Glu Ile
 245 250 255
 Asp Ile Glu Thr Asn Ile Asn Thr Gln Lys Ile Tyr Pro Thr Ser Arg
 260 265 270
 Met Val Ser Ser Leu Met Asn Met Pro Val Gln Ala Asn Lys Ala Ile
 275 280 285
 Val Gly Arg Asn Ala Phe Ala His Ser Ser Gly Ile His Gln Asp Gly
 290 295 300
 Val Leu Lys Asn Val Gln Thr Tyr Glu Ile Ile Asp Pro His Asp Val
 305 310 315 320
 Gly Ile Asp Asp Asn Ser Ile Val Leu Thr Ala Arg Ser Gly Arg Ala
 325 330 335
 Ala Leu Lys Asn Arg Leu Ser Ile Leu Gly Val Thr Leu Asp Gln Glu
 340 345 350
 Lys Leu Asp Lys Val Tyr Glu Glu Phe Leu Lys Leu Ala Asp Arg Lys
 355 360 365
 Lys Asp Ile His Asp Asp Asp Ile Leu Val Leu Ala Gly Ala Asp Arg
 370 375 380

10077
 500
 PRT
 B.fragilis

Ser Gly Asn His Arg Ile Lys Leu Glu Tyr Leu Gln Val Thr Ser Gly
 385 390 395 400
 Val Gly Val Arg Ser Val Ala Ser Leu Gly Leu Asn Ile Ala Gly Glu
 405 410 415
 Lys Phe Glu Ala Ala Ser Gly Asn Gly Pro Val Asp Ala Ala Ile
 420 425 430
 Lys Ala Leu Lys Arg Ile Ile Asp Arg His Met Thr Leu Lys Glu Phe
 435 440 445
 Thr Ile Gln Ala Ile Ser Lys Gly Ser Asp Asp Val Gly Lys Val His
 450 455 460
 Met Gln Val Glu Tyr Asp Asn Gln Met Tyr Tyr Gly Phe Gly Ala Asn
 465 470 475 480
 Thr Asp Ile Ile Ala Ala Ser Val Glu Ala Tyr Ile Asp Cys Ile Asn
 485 490 495
 Lys Phe Thr Lys
 500

<210> 10078

<211> 512

<212> PRT

<213> B.fragilis

<400> 10078

Asn Arg Thr Met Gly Lys Gly Val Lys Ile Glu Ile Met Asp Thr Thr
 1 5 10 15
 Leu Arg Asp Gly Glu Gln Thr Ser Gly Val Ser Phe Val Pro His Glu
 20 25 30
 Lys Leu Met Ile Ala Arg Leu Leu Leu Glu Glu Leu Lys Val Asp Arg
 35 40 45
 Val Glu Val Ala Ser Ala Arg Val Ser Asp Gly Glu Phe Asp Ala Val
 50 55 60
 Lys Met Ile Cys Asp Trp Ala Ala Arg Arg Asn Leu Leu Gln Lys Val
 65 70 75 80
 Glu Val Leu Gly Phe Val Asp Gly His Thr Ser Leu Asp Trp Ile His
 85 90 95
 Ala Thr Gly Cys Arg Val Ile Asn Leu Leu Cys Lys Gly Ser Leu Lys
 100 105 110
 His Cys Thr Cys Gln Leu Lys Lys Thr Pro Glu Lys His Ile Glu Asp
 115 120 125
 Ile Leu Ala Val Val Asp Tyr Ala Asn Glu Leu Asp Ile Glu Val Asn
 130 135 140
 Val Tyr Leu Glu Asp Trp Ser Asn Gly Met Lys Asp Ser Pro Glu Tyr
 145 150 155 160
 Val Phe Arg Ile Val Asp Ala Leu Lys Glu Thr Thr Ile Lys Arg Phe
 165 170 175
 Met Leu Pro Asp Thr Leu Gly Ile Leu Asn Pro Leu Gln Val Ile Glu
 180 185 190
 Phe Met Arg Lys Met Lys Lys Arg Tyr Pro Asp Thr His Phe Asp Phe
 195 200 205
 His Ala His Asn Asp Tyr Asp Leu Ala Val Ser Asn Val Leu Ala Ala
 210 215 220
 Val Leu Ser Gly Val Lys Gly Leu His Thr Thr Ile Asn Gly Leu Gly
 225 230 235 240
 Glu Arg Ala Gly Asn Ala Pro Leu Ala Ser Val Gln Ala Ile Leu Lys
 245 250 255
 Asp His Phe Asn Ala Ile Thr Asn Ile Asp Glu Ser Arg Leu Asn Asp
 260 265 270
 Val Ser Arg Val Val Glu Ser Tyr Ser Gly Ile Val Ile Pro Ala Asn
 275 280 285

10078 512 PRT B.fragilis

Lys Pro Ile Val Gly Glu Asn Val Phe Thr Gln Val Ala Gly Val His
 290 295 300
 Ala Asp Gly Asp Asn Lys Ser Asn Leu Tyr Cys Asn Asp Leu Leu Pro
 305 310 315 320
 Glu Arg Phe Gly Arg Val Arg Glu Tyr Ala Leu Gly Lys Thr Ser Gly
 325 330 335
 Lys Ala Asn Ile Arg Lys Asn Leu Glu Ser Leu Gly Leu Glu Leu Asp
 340 345 350
 Glu Glu Ser Met Lys Lys Val Thr Glu Arg Ile Ile Glu Leu Gly Asp
 355 360 365
 Lys Lys Glu Leu Val Thr Gln Glu Asp Leu Pro Tyr Ile Ile Ser Asp
 370 375 380
 Val Leu Lys His Asp Gly Met Ser Asn Lys Val Lys Leu Lys Ser Tyr
 385 390 395 400
 Phe Val Thr Leu Ala His Gly Leu Lys Pro Met Ala Thr Leu Ser Ile
 405 410 415
 Glu Ile Asp Gly Gln Val Tyr Glu Glu Ser Ser Ser Gly Asp Gly Gln
 420 425 430
 Tyr Asp Ala Phe Val Arg Ala Leu Arg Lys Ile Tyr Lys Val Thr Leu
 435 440 445
 Gly Arg Lys Phe Pro Met Leu Ile Asn Tyr Ala Val Ser Ile Pro Pro
 450 455 460
 Gly Gly Arg Thr Asp Ala Phe Val Gln Thr Val Ile Thr Trp Ser Phe
 465 470 475 480
 Gly Glu Lys Val Phe Arg Thr Arg Gly Leu Asp Ala Asp Gln Thr Glu
 485 490 495
 Ala Ala Ile Lys Ala Thr Ile Lys Met Leu Asn Ile Ile Glu Glu Tyr
 500 505 510

<210> 10079

<211> 95

<212> PRT

<213> B.fragilis

<400> 10079

Pro Tyr Arg Met Val Pro Ala Asp Ser Arg Arg Ile Pro Arg Ala Pro
 1 5 10 15
 Arg Tyr Ser Gly Tyr His Tyr Ala Ser Val Thr Leu Glu Tyr Arg Ala
 20 25 30
 Ile Thr Val Tyr Gly Thr Thr Phe Gln Ser Phe Leu Leu Asn Asn Cys
 35 40 45
 Leu Ala Arg Ala Trp Ser Tyr Asn Pro Thr His Ala Val Thr Trp Val
 50 55 60
 Val Trp Ala Asn Pro Arg Ser Leu Ala Thr Thr Arg Gly Ile Ile Ile
 65 70 75 80
 Tyr Phe Leu Phe Leu Gln Val Leu Arg Cys Phe Ser Ser Leu Arg
 85 90 95

<210> 10080

<211> 218

<212> PRT

<213> B.fragilis

<400> 10080

Arg Lys Phe Val Lys Gly Ser Gly Phe Ile Tyr Val Ile Gly Phe Leu
 1 5 10 15
 Ala Gln Ala Phe Phe Ser Ala Arg Ile Ile Phe Gln Trp Ile Leu Ser
 20 25 30
 Glu Arg Ala Lys Lys Val Val Ser Pro Ser Ile Phe Trp Ile Leu Ser

35	40	45
Ile Ala Gly Ser Tyr Leu	Leu Cys Ile Tyr Gly Trp	Leu Arg Asp Asp
50	55	60
Phe Ser Ile Ile Phe Gly	Gln Phe Ile Ser Tyr Tyr	Ile Tyr Leu Trp
65	70	75
Asn Leu Asn Glu Lys Gly	Ile Trp Asn Lys Leu His	Gly Ala Leu Lys
85	90	95
Thr Leu Leu Val Ile Thr	Pro Val Ile Ala Ala Ala	Phe Met Leu His
100	105	110
Asp Ala Gln His Phe Ile	Asp Ser Phe Phe Arg Asn	Glu Glu Val Pro
115	120	125
Leu Trp Leu Leu Ile Phe	Gly Ser Met Gly Gln Ile	Ile Phe Thr Leu
130	135	140
Arg Phe Val Tyr Gln Trp	Ala Tyr Ser Phe His His	Lys Glu Ser Leu
145	150	155
Leu Pro Ala Gly Phe Trp	Ile Ile Ser Leu Val Gly	Ser Ser Val Ile
165	170	175
Val Ala Tyr Gly Val Phe	Arg Leu Asp Pro Val Leu	Ile Leu Gly Gln
180	185	190
Ser Val Gly Phe Val Ala	Tyr Phe Arg Asn Leu Met	Ile Gly Arg Lys
195	200	205
Ser Ser Lys Gln Ser Val	Ala Tyr Glu Lys	
210	215	

<210> 10081

<211> 269

<212> PRT

<213> B.fragilis

<400> 10081

Ile Trp Ile Val Val Ser	Ile Ile Leu Phe Tyr Phe	Ile Phe Phe Val
1	5	10
Leu Leu Arg Asp Ile Tyr	Asn Glu Ala Met Asn Lys	Thr Ile Asn Tyr
20	25	30
Gln Leu Thr Ile Val Val	Pro Val Tyr Asn Glu Glu	Asp Asn Ile Tyr
35	40	45
Ser Leu Glu Gln Lys Leu	Gly Glu Phe Leu Pro Lys	Ser Ile Cys Thr
50	55	60
Ala Cys Val Leu Phe Val	Asn Asp Gly Ser Arg Asp	Asn Ser Lys Gln
65	70	75
Arg Ile Met Glu Val Cys	Ala Arg Asn Lys Asp Phe	Phe Tyr Met Asp
85	90	95
Leu Ala Lys Asn Ser Gly	Leu Ser Ala Ala Met Lys	Ala Gly Ile Asp
100	105	110
Tyr Thr Glu Ser Val Tyr	Val Gly Tyr Met Asp Ala	Asp Leu Gln Thr
115	120	125
Thr Pro Glu Asp Phe Asn	Leu Leu Leu Lys Asp Ile	Ala Asp Tyr Gln
130	135	140
Leu Val Met Gly Ile Arg	Ala Asn Arg Lys Asp Ser	Phe Phe Lys Asn
145	150	155
Leu Gln Ser Lys Ile Ala	Asn Gly Phe Arg Arg Met	Met Thr Asn Asp
165	170	175
Gly Val Gln Asp Thr Gly	Cys Pro Leu Lys Val Leu	His Thr Ala Tyr
180	185	190
Ala Lys Arg Ile Pro Phe	Phe Thr Gly Met His Arg	Phe Leu Pro Ala
195	200	205
Leu Ile Leu Leu Gln Asp	Ala Lys Ile Lys Gln Ile	Pro Val Arg His
210	215	220
Phe Pro Arg Val Ala Gly	Thr Ser Lys Tyr His Leu	Trp Asn Arg Leu

225 230 235 240
 Val Ser Pro Phe Leu Asp Cys Phe Ala Tyr Arg Trp Met Lys Lys Arg
 245 250 255
 Tyr Ile Asn Tyr Arg Ile Gly Asp Asn Asn Leu Ile Ala
 260 265

<210> 10082
 <211> 86
 <212> PRT
 <213> B.fragilis

<400> 10082
 Leu Ile Ser Leu Lys Thr Leu Arg Phe Ile Lys Lys Lys Ile Arg Ile
 1 5 10 15
 Leu His Phe Ile Lys Ser Tyr Ser Tyr Leu Cys Arg Ile Thr Ser Ala
 20 25 30
 Lys Asp Leu Ile Asp Val Asn Tyr Leu Leu Ala Leu Lys Ala Pro Lys
 35 40 45
 Cys Thr Phe Tyr Ala Ala Asp Ile Val Leu Lys Glu Leu Asn Gln Leu
 50 55 60
 Thr Thr His Lys Arg Pro Pro Phe Cys Thr Thr Tyr Phe Ile Leu Ile
 65 70 75 80
 Asp Val Gln Cys Leu Ile
 85

<210> 10083
 <211> 154
 <212> PRT
 <213> B.fragilis

<400> 10083
 Ile Arg Phe Ser Phe Val Ser Phe Val Phe Lys Ile Leu Ile Lys His
 1 5 10 15
 Tyr Gly Cys Pro Ser Ala Gly Arg His Ala Tyr Val Arg Pro Arg Thr
 20 25 30
 Arg Pro Ala Ser Pro Pro Arg Cys Pro Ile Pro Ser Arg Thr Ala Ala
 35 40 45
 Pro His Gly Leu Pro Ala Pro Pro Phe Arg Pro His Cys Pro Thr Pro
 50 55 60
 Val Pro Gly Ala Pro Phe Ser Gly His Arg Arg Ser Thr Pro Trp Arg
 65 70 75 80
 Ser Gln Gly Cys Arg Pro Gly Asn Lys Pro Leu Ile Pro Leu Pro Pro
 85 90 95
 Pro Val Pro Gly Ser Pro Pro Ala Trp Val His Ser Pro Phe Pro Pro
 100 105 110
 Arg Pro Pro Pro Ala Arg Cys Arg Ser Ser Pro Pro Arg Arg Pro Pro
 115 120 125
 Leu Arg Val Arg Pro Arg Leu Arg Leu Pro Leu Pro Pro Arg Pro Pro
 130 135 140
 Leu Arg Arg Ala Gly Arg Cys Phe Leu Pro
 145 150

<210> 10084
 <211> 142
 <212> PRT
 <213> B.fragilis

<400> 10084
 Gln Pro Ser Ser Asn Trp Lys Ala Met Lys Lys Gln Arg Asn Glu Lys

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1           5           10           15
Pro Ile Asp Glu Glu Leu Leu Met Arg Met Met Ala Gly Glu Ala Ala
20           25           30
Gly Thr Gly Glu Pro Gly Thr Gly Lys Gly Glu Thr Ala Val Pro Val
35           40           45
Glu Lys Ala Gln Glu Gly Lys Ala Ala Asp Thr Arg Arg Arg Lys Gly
50           55           60
Arg Gln Ala Asp Tyr Glu Thr Thr Phe Phe Lys Gly Met Asp Ile Pro
65           70           75           80
Ala Arg Tyr Gly Lys Pro Val Tyr Val Arg Arg Glu Tyr His Glu Arg
85           90           95
Ile Ala Lys Ile Ser Val Met Leu Thr Gly Gly Lys Val Ser Leu Ser
100          105          110
Ala Tyr Ile Asp Asn Val Leu Ala Gln His Phe Glu Gln Tyr Arg Glu
115          120          125
Glu Ile Glu Ala Ala Tyr Ala Gly Lys Leu Glu Asn Leu Phe
130          135          140

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<210> 10085

<211> 169

<212> PRT

<213> B.fragilis

<400> 10085

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Ile Ser Arg Pro Ser Ser Ala Pro Ser Gly Gly Thr Ala Ser Thr Arg
1           5           10           15
Cys Asn Ser Cys Pro Pro Val Ala Ala Arg His Gly Asp Gly His Gly
20           25           30
Ser Ser Arg Asp Ser Ser Gly Thr Pro Ser Gly Thr Leu Pro Ala Thr
35           40           45
Val Pro Ser Thr Glu Ser Ser Arg Met Thr Ser Ser Tyr Val Arg Arg
50           55           60
Ile Ser Ala Thr Ala Pro Ala Phe Ala Gly Gly Arg Ala Ala Gly Thr
65           70           75           80
Gly Thr Cys Arg Pro Pro Pro Pro Glu Asn Pro Pro Ser Ser Arg Arg
85           90           95
Thr Pro Pro Val Gly Leu Pro Lys Pro Pro Arg Lys Asp Arg Leu Cys
100          105          110
Pro Arg Arg Thr Ser Pro Val Trp Leu Pro Cys Arg Pro Leu Arg Thr
115          120          125
Gly Tyr Gly Ala Ala Met Pro Asp Ala Arg Asn Arg Val Pro His Ser
130          135          140
Leu Pro Ala His Gly Gly Thr Ser Pro Gly Phe Ser Cys Pro Pro Ala
145          150          155          160
His Val Pro Ala Thr Ile Arg Thr Pro
165

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<210> 10086

<211> 128

<212> PRT

<213> B.fragilis

<400> 10086

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Ala Leu Leu Pro Leu Ala Pro Leu Ala Pro Ser Phe Pro Ser Phe Pro
1           5           10           15
Ser Leu Pro Ser Leu Pro Lys Ala Gly Leu Pro Val Ser Val Pro Phe
20           25           30
Ile Tyr Gln Leu Pro Leu Ser Pro Met Ala Thr Ser Gly Asp Phe Pro
35           40           45

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Ser Cys Pro Thr Ala Phe Phe Pro Val Ser Val Pro Ser Thr Asn Gln
 50 55 60
 Leu Pro Leu Ser Pro Met Val Thr Val Gly Gly Thr Ala Ser Phe Pro
 65 70 75 80
 Ser Phe Pro Ser Leu Pro Ser Leu Pro Lys Ala Gly Leu Pro Val Ser
 85 90 95
 Val Pro Leu Ile Tyr Gln Leu Pro Leu Ser Pro Met Val Thr Val Gly
 100 105 110
 Gly Ile Ala Ser Arg Pro Phe Val Pro Ser Leu Pro Ser Leu Pro Ser
 115 120 125

<210> 10087

<211> 687

<212> PRT

<213> B.fragilis

<400> 10087

Asn Phe Ala Phe Leu Cys Val Leu Cys Arg Phe Phe Gly Lys Lys Tyr
 1 5 10 15
 Ser Ala Arg Leu Asn Ser Glu Tyr Asp Leu Leu Asn Gly Arg Leu Lys
 20 25 30
 Val Gly Glu Asn Leu Glu Leu Asn Tyr Met Asn Tyr Arg Glu Ala Asn
 35 40 45
 His Thr Gln Leu Ala Ala Asn Glu Pro Pro Ile Ile Pro Val Tyr Thr
 50 55 60
 Glu Thr Gly Gly Trp Gly Gly Ala Ser Leu Asp Val Gly Met Asp Asp
 65 70 75 80
 Tyr Arg Asn Pro Val Lys Asp Leu Ile Leu Gly Lys Asp Asn Val Asn
 85 90 95
 Lys Phe Leu Lys Val Ile Gly Asn Thr Tyr Ala Asp Leu Met Ile Ile
 100 105 110
 Lys Gly Leu Asn Leu Arg Thr Ser Phe Gly Val Asp Tyr Arg Gly Ser
 115 120 125
 Tyr Tyr Arg Ala Val Asp Lys Lys Trp Ser Glu Ala Asp Gly Ser Gly
 130 135 140
 Arg Asp Glu Lys Phe Asn Tyr Val Arg Asn Asp Gln Thr His Phe Leu
 145 150 155 160
 Glu Tyr Gln Trp Thr Asn Gln Ile Asn Tyr Asn Gly Gln Phe Gly Lys
 165 170 175
 His Ser Ile Gly Ala Val Val Gly Met Glu Phe Thr Lys Ala Glu Ser
 180 185 190
 Glu Ala Phe Tyr Ala Arg Lys Asp Gly Leu Thr Leu Glu Asp Arg Asp
 195 200 205
 Tyr Ala Phe Leu Ser Ser Ala Thr Gly Asp Lys Ile Thr Glu Ala Thr
 210 215 220
 Gly Ser Gly Asp Ala Tyr Ala Leu Leu Ser Tyr Phe Gly Lys Phe Asn
 225 230 235 240
 Tyr Ser Tyr Ala Ser Lys Tyr Leu Ala Ser Ala Thr Leu Arg Tyr Asp
 245 250 255
 Gly Ser Ser Lys Phe Gly Ala Asp Asn Arg Trp Ala Val Phe Pro Ala
 260 265 270
 Phe Ser Leu Gly Trp Arg Ile Lys Asn Glu Pro Phe Leu Glu Asn Val
 275 280 285
 Asp Phe Leu Ser Asp Leu Lys Leu Arg Phe Ser Trp Gly Arg Asn Gly
 290 295 300
 Asn Ser Ala Ile Pro Ser Gly Tyr Leu Gln Ser Ser Tyr Val Ala Asp
 305 310 315 320
 Tyr Asn Gly Thr Ser Tyr Ala Met Asn Gly Gln Glu Ser Gly Ser Leu
 325 330 335

Gln Ser Gly Phe Arg Lys Tyr Leu Thr Gly Asn Ser Thr Leu Lys Trp
 340 345 350
 Glu Thr Val Thr Gln Thr Asn Tyr Gly Ile Asp Phe Gly Phe Phe Asn
 355 360 365
 Gln Ser Ser Val Gly Thr Ile Asp Tyr Phe Tyr Lys Lys Thr Thr Asp
 370 375 380
 Met Leu Tyr Leu Pro Pro Tyr Ile Gly Ala Phe Gly Glu Gly Gly Asp
 385 390 395 400
 Thr Tyr Val Asn Gly Pro Ser Met Glu Asn Arg Gly Val Glu Ile Leu
 405 410 415
 Leu Thr Tyr Arg Asn Ser Leu Pro Ser Gly Phe Asn Tyr Ser Ile Thr
 420 425 430
 Gly Asn Ile Ala Thr Phe Lys Asn Lys Ile Thr Glu Leu Pro Asp Asn
 435 440 445
 Val Arg Ser Val Tyr Gly Gly Asn Gly Met Leu Asp Asp Ile Ile Gly
 450 455 460
 Arg Pro Arg Asn Ser Ile Tyr Gly Tyr Val Ala Asp Gly Ile Phe Lys
 465 470 475 480
 Thr Gln Glu Glu Val Asp Asn Ser Pro Gln Gln Ala Gly Lys Gly Leu
 485 490 495
 Gly Arg Ile Arg Tyr Lys Asp Leu Asp Gly Asp Gly Arg Ile Thr Gln
 500 505 510
 Asp Tyr Asp Arg Thr Trp Ile Gly Val Ser Asp Pro Asp Phe Thr Tyr
 515 520 525
 Gly Leu Asn Leu Gln Ala Ser Tyr Lys Asn Val Asp Leu Ala Leu Phe
 530 535 540
 Phe Gln Gly Val His Gly Gly Asp Val Trp Asp Ser Trp Ile Glu Tyr
 545 550 555 560
 Ser Asp Phe Trp Asn Ile Gln Asn Val Asn Asn Thr Asn His Leu Lys
 565 570 575
 Gly Val Phe Asn Ala Trp Ser Pro Gln Asn Pro Asp Ser Asn Ile Pro
 580 585 590
 Ala Leu Ser Thr Arg Asn Thr Asn Asp Glu Lys Arg Thr Ser Thr Tyr
 595 600 605
 Phe Leu Lys Asp Gly Ser Tyr Leu Lys Leu Arg Thr Ile Glu Leu Gly
 610 615 620
 Tyr Thr Phe Pro Glu Ser Met Val Lys Lys Ala Met Ile Ser Arg Leu
 625 630 635 640
 Arg Ala Tyr Val Ser Ala Asn Asn Val Phe Thr Ile Lys Lys Trp Trp
 645 650 655
 Asp Ser Asn Arg Phe Ser Gly Pro Asp Pro Glu Ile Arg Asp Phe Gly
 660 665 670
 Tyr Val Ile Pro Phe Thr Ala Thr Val Gly Val Asn Ile Thr Phe
 675 680 685

<210> 10088

<211> 332

<212> PRT

<213> B.fragilis

<400> 10088

Cys Phe Thr Pro Asn Asn Arg Ser Thr Asp Tyr Lys Thr Ile Lys
 1 5 10 15
 Lys Lys Gly Gln Met Lys Lys Ile Phe Gly Trp Val Ala Leu Leu Met
 20 25 30
 Gly Met Val Thr Gly Ala Asn Ala Gln Val Asn Asp Thr Ile Gln Arg
 35 40 45
 Val Thr Gly Asn Asp Leu Tyr Gln Gly Ile Thr Arg Lys Leu Pro Tyr
 50 55 60

```

Arg Gln Met Val Thr Pro His Gly Val Gln Val Thr Phe Ala Lys Thr
65          70          75          80
Val His Ile Ile Phe Pro Ser Ala Val Arg Tyr Val Asp Leu Gly Ser
          85          90          95
Asn Trp Ile Ile Ala Gly Lys Ala Asp Gly Ala Glu Asn Val Ile Arg
          100          105          110
Val Lys Ala Thr Thr Glu Gly Phe Pro Gly Glu Thr Asn Phe Ser Val
          115          120          125
Ile Cys Glu Asp Gly Ser Phe Tyr Ser Phe Asn Ala Arg Tyr Ala His
          130          135          140
Glu Pro Glu Met Leu Asn Ile Glu Met Lys Asp Phe Leu Glu Asn Gly
145          150          155          160
Asn Thr Thr Asp Phe Ser His Thr Arg Met Asn Leu His Phe Arg Glu
          165          170          175
Leu Ala Gly Glu Ser Pro Leu Leu Val Lys Leu Ile Met Gln Ser Ile
          180          185          190
Tyr Lys Glu Asp Arg Arg Glu Ile Arg His Leu Gly Cys Lys Arg Phe
          195          200          205
Gly Val Gln Phe Leu Leu Lys Ser Val His Ser His Asn Gly Leu Phe
210          215          220
Tyr Phe His Thr Glu Thr Arg Asn Arg Ser Asn Val Ala Phe Arg Thr
225          230          235          240
Asp Phe Ile Arg Phe Lys Val Val Asp Lys Lys Val Pro Lys Arg Thr
          245          250          255
Ala Ile Gln Glu Arg Val Ile Asp Pro Val Arg Ser Tyr Asn Glu Val
          260          265          270
Leu Val Thr Glu Gly Lys Ser Asp Val Arg Thr Val Tyr Ala Val Pro
          275          280          285
Gln Phe Thr Ile Pro Asp Asp Lys Leu Leu Val Ile Glu Leu Phe Glu
290          295          300
Lys Asp Gly Gly Arg His Gln Thr Ile Arg Val Glu Asn Ala Asp Leu
305          310          315          320
Val Ala Ala Lys Gln Ile Asn Glu Leu Lys Ile Lys
          325          330

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<210> 10089

<211> 121

<212> PRT

<213> B.fragilis

<400> 10089

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His Pro Gln Pro Cys His Glu Gln Ala Asp Ile Pro Asp Gly Lys Gly
1          5          10          15
Gly Asp Ile Gln His Gly Val Cys Arg Lys Arg Gln Arg Lys Gly Glu
          20          25          30
Gln Pro Pro Val Ala Glu Lys Glu Gln Gln Ala Gly His Ala Ala Lys
          35          40          45
Asp Asp Pro Ala Pro Arg Asp Phe Leu Leu Leu His Ala Leu Cys Ala
          50          55          60
Glu Ala Ala Lys Gly Glu Glu Gln His Gly Glu Glu Leu Arg Pro Glu
65          70          75          80
Asp Ile Gly Glu Gln Pro Gly Gly Thr Leu Glu Ala Glu Gln Tyr Pro
          85          90          95
Ile Asp His Ala Asp Val Asp Ala Pro Phe Pro Asp Gly Leu Val Thr
          100          105          110
Glu Pro Ile Asn Ile Asp Asp Tyr Lys
          115          120

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<210> 10090

<210> 10091
 <211> 325
 <212> PRT
 <213> B.fragilis

<400> 10091
 Val Met Ala Thr Thr Asn Ser Thr Ile Glu Lys Ile Ala Pro Met Phe
 1 5 10 15
 Thr Glu Leu Leu Ile Lys Lys Ile Glu Cys Leu Lys Thr Asp Trp Gln
 20 25 30
 Lys Pro Trp Ile Thr Ser Leu Glu Gln Gly Leu Pro Arg Asn Ile Arg
 35 40 45
 Gly Thr Leu Tyr Asn Gly Gly Asn Val Leu Met Leu Leu Phe Tyr Thr
 50 55 60
 Glu Phe Met Lys Phe Thr Leu Pro Val Phe Leu Thr Phe Asn Gln Ala
 65 70 75 80
 Lys Glu Glu Asp Leu Ser Val Ser Lys Gly Ala Arg Ser Phe Pro Val
 85 90 95
 Tyr Tyr Trp Phe Lys Phe Val Val His Lys Glu Thr Lys Lys Thr Ile
 100 105 110
 Lys Tyr Glu Glu Tyr Arg Lys Leu Pro Ala Thr Glu Gln Glu Asn Tyr
 115 120 125
 Lys Val Ile Pro Gln Met Lys Tyr Tyr Asn Val Phe Asn Ile Asp Gln
 130 135 140
 Thr Asp Phe Ala Gly Lys Tyr Pro Glu Arg Tyr Glu Arg Met Lys Lys
 145 150 155 160
 Gly Glu Gln Pro Glu Asp Tyr Ser Asp Arg Met Ile Tyr Glu Ala Leu
 165 170 175
 Asp Glu Leu Val Tyr Leu Gln Asn Trp Tyr Cys Pro Ile Lys Val Gln
 180 185 190
 Tyr Ser Asp Ser Ala Tyr Tyr Ser Pro Ser Ser Asp His Ile Val Cys
 195 200 205
 Pro Gln Arg Glu Gln Phe Pro Gln Gly Ala Glu Phe Tyr Gly Thr Leu
 210 215 220
 Leu His Glu Met Ala His Ser Thr Gly Ser Pro Gln Arg Leu Asn Arg
 225 230 235 240
 Thr Phe Gly Cys Phe Phe Gly Asp Ala Leu Tyr Ala Arg Glu Glu Leu
 245 250 255
 Val Ala Glu Leu Thr Ala Ala Leu Cys Gly Ala Phe Phe Gly Tyr Ala
 260 265 270
 Thr Ala Pro Gln Glu Asn Asn Ala Ala Tyr Leu Lys His Trp Leu Thr
 275 280 285
 Lys Leu Arg Glu Glu Pro Ala Phe Leu Val Glu Ile Leu Gly Asp Val
 290 295 300
 Asn Lys Ala Ala Lys Met Ile Ala Asp Lys Val Thr Glu Pro Val Asn
 305 310 315 320
 Glu Pro Ala Ala Ala
 325

<210> 10092
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 10092
 Pro Gly Arg Thr Leu Arg Gly Gly Gly Gly Tyr Pro Pro Gly Gly Asp
 1 5 10 15
 Glu Trp Arg Asn Gly Gly Leu Pro Ala Ala Ala Gly Arg Gln Val Tyr


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      20      25      30
Gln His Pro Ala Arg Ala Pro Ala Asn Thr Gly Ala Gly Ala Gly Gly
      35      40      45
Gly Gly Asn Val Gly Asp Val Arg Arg Arg Ala Trp Arg Ser Ala Glu
      50      55      60
Lys Pro Ala His Ala Arg Cys Val Cys Gln Val Arg Arg Pro Gln Ser
      65      70      75      80
Gly Val Ala Asp Asp Asp Pro Val Gly Gly Thr Leu Ala Gly Gly Leu
      85      90      95
Pro Asn Gly Glu Asp Ala Val Pro Gly His Ser Glu Glu Ser Pro Gly
      100      105      110
Val Arg Ala Gly Glu Arg Ala
      115

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<210> 10093

<211> 220

<212> PRT

<213> B.fragilis

<400> 10093

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Arg His Lys Thr Met Lys Thr Leu Ser Glu Lys Glu Phe Asn Gly Phe
1      5      10      15
Asn Val Asn Ala Met Phe Thr Glu Arg Ala Glu Arg Ala Lys Lys Glu
      20      25      30
Leu Ser Pro Leu Met Gln Glu Ile Arg Lys Tyr Ile Pro Gln Ala Glu
      35      40      45
Tyr Gly Tyr His Val Glu Ser Gly Glu Tyr Pro Ala Phe Tyr Gly Val
      50      55      60
Arg Ile Glu Phe Thr Tyr Asn Gly Ile Arg Phe His Val Cys Lys Ile
      65      70      75      80
Tyr Lys Glu Asn Lys Tyr Arg Ile Ala Ala Asp Met Glu His Phe Glu
      85      90      95
Tyr Val Asn Arg Tyr Asp Ile Glu Arg Ala Gly Asn Gln Tyr Glu Lys
      100      105      110
Pro Cys Asn Ile Gly Val Phe Thr Ala Lys Lys Ile Asn Asp Trp Ile
      115      120      125
Asn Tyr Tyr Thr Gln Ile Tyr Arg Gln Val Glu Gln Glu Asn Val Glu
      130      135      140
Asn Ser Lys Lys Val Ala Asp Phe Leu Lys Ser Ile Glu Asn Glu Pro
      145      150      155      160
Val Arg Trp Glu Gly Asn Asn His Ser Lys Gly Thr Ile Ile Arg Asn
      165      170      175
Gly Leu Arg Phe Thr Phe Tyr Ile Glu Glu Gly His Leu Tyr Phe Glu
      180      185      190
Leu Ser Leu Ser Tyr Arg Gly Thr Ala Asp Tyr Asp Thr Phe Arg Leu
      195      200      205
Ile Ala Asp Asn Arg Tyr Ile Pro Lys Gly Asn Tyr
      210      215      220

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<210> 10094

<211> 589

<212> PRT

<213> B.fragilis

<400> 10094

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Tyr Asn Leu Leu Asn Arg Asn Ser Met Lys Thr Phe Tyr Ser Leu Phe
1      5      10      15
Leu Ser Ser Ala Leu Leu Leu Ser Leu Leu Val Thr Ser Cys Ala Asp
      20      25      30

```

Gln Leu Asn Ile Asn Pro Lys Gly Val Leu Ala Asp Asp Leu Leu Leu
 35 40 45
 Gly Lys Pro Glu His Ile Asp Asp Phe Val Thr Pro Cys Tyr Ser Leu
 50 55 60
 Ile Pro Tyr Leu Pro Trp Ser Glu Ala His Ala Trp Trp Met His Gly
 65 70 75 80
 Ser Ile Arg Ser Asp Asp Ala Tyr Lys Gly Gly Ser Gly Val Ser Asp
 85 90 95
 Gln Ser Ala Trp His Asp Met Glu Val Phe Ser Ser Val Thr Ala Asn
 100 105 110
 Val Gly Asn Asn Asp Gly Pro Trp Phe Lys Gly Tyr Val Ala Ile Ser
 115 120 125
 Arg Tyr Asn Leu Ala Leu Tyr Ala Leu Ser Lys Val Thr Asp Glu Asn
 130 135 140
 Tyr Pro Leu Lys Gly Val Arg Thr Gly Glu Val Lys Phe Leu Arg Gly
 145 150 155 160
 Ala Thr Tyr Phe Phe Met Lys Thr Leu Trp Arg Tyr Ile Pro Trp Val
 165 170 175
 Asp Glu Glu Asn Gly Arg Thr Val Glu Asp Val Thr Asn Ile Ser Asn
 180 185 190
 Arg Pro Asn Gly Thr Asp Asp Thr Tyr Leu Trp Glu His Ile Val Ala
 195 200 205
 Asp Leu Glu Glu Ala Val Arg Leu Leu Pro Glu Lys Gln Glu Glu Ile
 210 215 220
 Gly Arg Ile Asn Lys Asn Ala Ala Arg Ala Met Ala Ala Lys Ala Leu
 225 230 235 240
 Leu Phe Met Ala Tyr Lys Gln Asp Ala Arg His Gln Val Val Glu Val
 245 250 255
 Asp Lys Lys Ile Leu Glu Arg Ala Leu Val Tyr Ile Asn Glu Ile Thr
 260 265 270
 Asp Gln Glu Gly Gly Asn Val Gly Leu Cys Glu Asp Phe Ala Glu Asn
 275 280 285
 Phe Leu Pro Glu Tyr Asp Asn Ala Thr Lys Glu Ala Ile Trp Glu Ile
 290 295 300
 Gln Tyr Ser Ile Asn Asp Gly Thr Ser Ser Gly Gly Asn Thr Asn Asn
 305 310 315 320
 Gly Ala Glu Leu Asn Ala Pro Ser Trp Glu Pro Tyr Phe Pro Cys Cys
 325 330 335
 Asp Phe His Lys Met Ser Phe Asn Met Ala Asn Ala Phe Arg Thr Gly
 340 345 350
 Thr Asp Gly Leu Pro Leu Phe Asp Thr Phe Asn Asp Ala Glu Met Lys
 355 360 365
 Gly Arg Phe Lys Glu Tyr Phe Asp Glu Asn Ser Phe Asp Pro Arg Leu
 370 375 380
 Ser His Thr Ala Ala Ile Pro Gly Tyr Pro Tyr Lys Tyr Asn Pro Asp
 385 390 395 400
 Leu Leu Tyr Glu Glu Lys Ala Ser Arg Ser Pro Gly Asp Tyr Gly Tyr
 405 410 415
 Leu Lys Ser Val Lys Glu Leu Val Pro Ala Gly Cys Asp Cys Ile Ile
 420 425 430
 Val Asn Arg Asn Ser Met Asn Val Lys Gln Ile Arg Tyr Ala Glu Val
 435 440 445
 Leu Leu Trp Lys Ala Glu Ile Leu Ile Gln Leu Asp Arg His Lys Glu
 450 455 460
 Ala Arg Pro Ile Ile Asn Lys Leu Arg Glu Arg Ala Asn Asn Ser Arg
 465 470 475 480
 Ile Arg Leu Leu Met Ala Asp Gly Thr Pro Tyr Met Asn Tyr Lys Val
 485 490 495
 Ser Leu Tyr Thr Asp Glu Ala Ala Trp Thr Lys Asp Tyr Ala Trp Lys

500	505	510
Ala Leu Met Phe Glu Asn Arg Leu Glu Thr Ala Cys Glu Gly Arg Arg		
515	520	525
Phe Phe Asp Leu Gln Arg Trp Gly Ile Leu Glu Pro Thr Met Asn Ala		
530	535	540
Tyr Phe Lys Lys Glu Lys Thr Arg Phe Ser Trp Met Asn Asn Ala Val		
545	550	555
Phe Val Ala Gly Arg Asp Glu Tyr Lys Pro Ile Pro Gln Gln Gln Met		
565	570	575
Asn Trp Ala Lys Gly Asn Tyr Ile Gln Asn Pro Gly Tyr		
580	585	

<210> 10095
 <211> 269
 <212> PRT
 <213> B.fragilis

<400> 10095
Leu Ile Lys Tyr Ala Leu Met Phe Leu Tyr Phe Cys Ile His Ile Gln
1 5 10 15
Lys Arg Asn Tyr Met Arg Leu Gly Leu Leu Thr Ala Phe Ile Leu Leu
20 25 30
Leu Ser Phe Thr Thr Ser Cys Gln Tyr Lys Glu Ala Gln Pro His Pro
35 40 45
Ala Phe Lys Asp Ser Ile Val Leu Val Thr Pro Val Glu Pro Gln Pro
50 55 60
Ile Ala Ser Lys Ser Gln Thr Ala Phe Tyr Leu Asp Ser Ile Gly Leu
65 70 75 80
Met Asn Ile Ala Glu Leu Asp Ser Thr Phe Ile Ile Arg Leu Met Tyr
85 90 95
Ala Thr Pro Asp Asn Phe Thr Gly Gln Leu Leu Tyr Thr Asp Leu Lys
100 105 110
Glu Ala Tyr Leu His Pro Asp Ala Ala Lys Ala Leu Leu Glu Ala His
115 120 125
Leu Leu Leu Lys Ala Gln Tyr Pro Ser Tyr Arg Leu Ile Ile Tyr Asp
130 135 140
Ala Ala Arg Pro Met Ser Val Gln Lys Lys Met Trp Asp Val Val Lys
145 150 155 160
Gly Thr Ser Lys Tyr Met Tyr Val Ser Asn Pro Ser Arg Gly Gly Gly
165 170 175
Leu His Asn Tyr Gly Leu Ala Val Asp Ile Ser Ile Ala Asp Ser Leu
180 185 190
Gly His Pro Leu Pro Met Gly Thr Glu Val Asp Tyr Met Asp Ala Ala
195 200 205
Ser His Ile Thr Asn Glu Ala Lys Leu Val Arg Glu Gly Lys Ile Thr
210 215 220
Gln Gln Glu Arg Glu Asn Arg Ile Leu Leu Arg Gln Val Met Lys Ser
225 230 235 240
Ala Gly Phe Arg Ala Leu Pro Ser Glu Trp Trp His Phe Asn Leu Cys
245 250 255
Ser Arg Asp Glu Ala Lys Gln Lys Tyr Lys Leu Ile Asn
260 265

<210> 10096
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 10096

Arg Ala Gly Tyr Ser Asp Glu Ile Pro Val His Gly Gly Asp Asp Ala
 1 5 10 15
 Arg Pro Glu Gly Ala Glu Ser Glu Arg Asp Gly Gly Asp Thr Val Arg
 20 25 30
 Ala Glu Thr Gly Arg Thr Leu Gly Gly Arg Pro Val His Asp Pro Leu
 35 40 45
 Val Pro Leu Arg Arg Gly Arg His Ala Gln Thr Gly
 50 55 60

<210> 10097

<211> 400

<212> PRT

<213> B.fragilis

<400> 10097

Asp Met Tyr Leu Ser Pro Glu Thr Ile Leu Phe Ile Arg Glu His Arg
 1 5 10 15
 Asn Asp Asp Val His Ser Leu Ala Leu Gln Ala Lys Arg Tyr Pro Gln
 20 25 30
 Val Asp Met Pro Leu Ala Ile Val Gln Ile Ala Gly Trp Gln Ala Thr
 35 40 45
 Val Ser Lys Ile Pro Ser Trp His Ala Thr Glu Gly Leu Leu Tyr Pro
 50 55 60
 Arg His Leu Ser Leu Glu Gln Cys Ser Ser Glu Val Thr Ala Leu Tyr
 65 70 75 80
 Lys Ala Ser Leu Val His Gly Glu Gly Leu Val Asp Leu Thr Gly Gly
 85 90 95
 Phe Gly Ile Asp Cys Ala Phe Leu Ala Thr Gln Phe Lys Thr Val Thr
 100 105 110
 Tyr Ile Glu Arg Gln Glu Glu Leu Cys Glu Leu Ala Met His Asn Phe
 115 120 125
 Pro Leu Leu Gly Leu Lys His Ile Arg Val Gln Asn Gly Asp Gly Val
 130 135 140
 Glu Tyr Leu Gln Gln Met Pro Ala Val Asp Cys Ile Phe Leu Asp Pro
 145 150 155 160
 Ala Arg Arg Asn Glu His Gly Gly Lys Thr Val Ala Ile Ser Asp Cys
 165 170 175
 Glu Pro Asn Val Ala Thr Leu Glu Lys Leu Leu Leu Glu Lys Gly Lys
 180 185 190
 Gln Val Met Ile Lys Leu Ser Pro Met Leu Asp Leu Ser Leu Ala Ile
 195 200 205
 Arg Asp Met Gln His Val Ser Glu Ala His Ile Val Ser Val Asn Asn
 210 215 220
 Glu Cys Lys Glu Leu Leu Leu Leu Leu Arg Pro Gly Asp Asp Ser Pro
 225 230 235 240
 Glu Ile Pro Ser Ala Met Ser Gln Pro Ile Val Cys Ile Asn Phe Ala
 245 250 255
 Asn Gln Glu Ile Gln Arg Phe Val Phe Thr Arg Glu Ser Glu Gln Ala
 260 265 270
 Thr Glu Cys Ser Tyr Thr His Glu Ile Gly Thr Tyr Leu Tyr Glu Pro
 275 280 285
 Asn Ala Ser Ile Leu Lys Ala Gly Ala Phe Arg Ser Ile Ala Ser Ser
 290 295 300
 Phe His Leu Ser Lys Leu His Ala Asn Ser His Leu Tyr Thr Ser Asn
 305 310 315 320
 Glu Arg Ile Glu Lys Phe Pro Gly Arg Ile Phe Arg Ile Thr Gly Tyr
 325 330 335
 Ser Gly Leu Asn Lys Lys Glu Leu Lys Asn Ile Leu Asn Gly Leu Asp
 340 345 350

Arg Ala Gly Tyr Ser Asp Glu Ile Pro Val His Gly Gly Asp Asp Ala
 1 5 10 15
 Arg Pro Glu Gly Ala Glu Ser Glu Arg Asp Gly Gly Asp Thr Val Arg
 20 25 30
 Ala Glu Thr Gly Arg Thr Leu Gly Gly Arg Pro Val His Asp Pro Leu
 35 40 45
 Val Pro Leu Arg Arg Gly Arg His Ala Gln Thr Gly
 50 55 60
 Asp Met Tyr Leu Ser Pro Glu Thr Ile Leu Phe Ile Arg Glu His Arg
 1 5 10 15
 Asn Asp Asp Val His Ser Leu Ala Leu Gln Ala Lys Arg Tyr Pro Gln
 20 25 30
 Val Asp Met Pro Leu Ala Ile Val Gln Ile Ala Gly Trp Gln Ala Thr
 35 40 45
 Val Ser Lys Ile Pro Ser Trp His Ala Thr Glu Gly Leu Leu Tyr Pro
 50 55 60
 Arg His Leu Ser Leu Glu Gln Cys Ser Ser Glu Val Thr Ala Leu Tyr
 65 70 75 80
 Lys Ala Ser Leu Val His Gly Glu Gly Leu Val Asp Leu Thr Gly Gly
 85 90 95
 Phe Gly Ile Asp Cys Ala Phe Leu Ala Thr Gln Phe Lys Thr Val Thr
 100 105 110
 Tyr Ile Glu Arg Gln Glu Glu Leu Cys Glu Leu Ala Met His Asn Phe
 115 120 125
 Pro Leu Leu Gly Leu Lys His Ile Arg Val Gln Asn Gly Asp Gly Val
 130 135 140
 Glu Tyr Leu Gln Gln Met Pro Ala Val Asp Cys Ile Phe Leu Asp Pro
 145 150 155 160
 Ala Arg Arg Asn Glu His Gly Gly Lys Thr Val Ala Ile Ser Asp Cys
 165 170 175
 Glu Pro Asn Val Ala Thr Leu Glu Lys Leu Leu Leu Glu Lys Gly Lys
 180 185 190
 Gln Val Met Ile Lys Leu Ser Pro Met Leu Asp Leu Ser Leu Ala Ile
 195 200 205
 Arg Asp Met Gln His Val Ser Glu Ala His Ile Val Ser Val Asn Asn
 210 215 220
 Glu Cys Lys Glu Leu Leu Leu Leu Leu Arg Pro Gly Asp Asp Ser Pro
 225 230 235 240
 Glu Ile Pro Ser Ala Met Ser Gln Pro Ile Val Cys Ile Asn Phe Ala
 245 250 255
 Asn Gln Glu Ile Gln Arg Phe Val Phe Thr Arg Glu Ser Glu Gln Ala
 260 265 270
 Thr Glu Cys Ser Tyr Thr His Glu Ile Gly Thr Tyr Leu Tyr Glu Pro
 275 280 285
 Asn Ala Ser Ile Leu Lys Ala Gly Ala Phe Arg Ser Ile Ala Ser Ser
 290 295 300
 Phe His Leu Ser Lys Leu His Ala Asn Ser His Leu Tyr Thr Ser Asn
 305 310 315 320
 Glu Arg Ile Glu Lys Phe Pro Gly Arg Ile Phe Arg Ile Thr Gly Tyr
 325 330 335
 Ser Gly Leu Asn Lys Lys Glu Leu Lys Asn Ile Leu Asn Gly Leu Asp
 340 345 350

Lys Ala Asn Ile Thr Thr Arg Asn Phe Pro Gln Ser Val Ala Glu Leu
 355 360 365
 Arg Lys Arg Leu Lys Leu Thr Asp Gly Gly Asp Ile Tyr Leu Phe Ala
 370 375 380
 Thr Thr Leu Asn Asp Glu Arg Lys Ile Ile Ile Arg Cys Glu Lys Ala
 385 390 395 400

<210> 10098

<211> 736

<212> PRT

<213> B.fragilis

<400> 10098

Glu Ala Leu Gln Arg Thr Pro Val Pro Leu Ala His Leu Leu Pro Val
 1 5 10 15
 Pro Asp Lys Asp His Glu Gly Ala Glu Pro Ser Gly Lys His Val Leu
 20 25 30
 His Pro Leu Gln Gly Gln Ala Cys Pro Gln Gly Asp Arg Gly Pro Gly
 35 40 45
 Asp Gly Tyr Glu Val Pro Arg Ser Arg Arg Ala Val Arg Glu Asp His
 50 55 60
 Glu Arg Gln Arg Phe Cys Tyr Ala Ala Pro Pro His Asp Gly Arg Asp
 65 70 75 80
 His Trp Asp Gly Ser Gly Gly Gly His Arg Gly Glu Val Pro Leu Ala
 85 90 95
 Leu Ala Ala Arg His Asp Gly Ala Glu Gly His Pro Val Glu Pro Gly
 100 105 110
 Gly Asp Ala His Arg Arg Arg His Pro Leu Pro Ala His Pro Leu Gly
 115 120 125
 His Gly Arg Pro Ala Gly Gln Gly Gly Asp Gly Gln Pro Leu Arg Ala
 130 135 140
 Ala Leu Asp Arg Pro Leu Gly Leu Pro Ala Val Val Pro Pro Ala Pro
 145 150 155 160
 Val Gly Leu Leu Leu Asp Cys Asn His Cys Tyr Asn Gln Tyr Ile Phe
 165 170 175
 Ile Asp Asp His Gly Glu Asn Leu Lys Arg Phe Glu Gln Thr Ala Arg
 180 185 190
 Asn Met His Ser Leu Ser Arg Tyr Ser Arg Ser Asn Gln Ile Asn Lys
 195 200 205
 Ala Trp Ile Glu Glu Tyr Leu Asn Glu Ala His Ser Lys Gly Leu Thr
 210 215 220
 Ser Val Arg Cys His Cys Asn Val Met Ala Trp Ser Asp Asp Arg Glu
 225 230 235 240
 Glu Leu Arg Arg Ile Lys Asn Glu Val Gly Ser Gln Leu Ala Leu Met
 245 250 255
 Glu Cys Lys Pro Arg His Asn Thr Val Asp Val Pro Thr Leu Phe Trp
 260 265 270
 Ala Ala Ile Pro Gly Asn Glu Gly Asp Phe Pro Phe Glu Glu Ser Phe
 275 280 285
 Tyr Thr Phe Ile Pro Gln Ala Leu Cys Phe Phe Thr Glu Glu Thr Asn
 290 295 300
 Tyr Lys Asp Ser Leu Ser Pro Phe Gly Ile Lys Met Ala Asp Arg Met
 305 310 315 320
 Thr Gly Arg Pro Leu His Leu Asp Ile Ser Asp Leu Pro Met Lys Lys
 325 330 335
 Gly Val Ile Ser Asn Arg Asn Lys Phe Val Leu Gly Pro Ser Gly Ser
 340 345 350
 Gly Lys Ser Phe Phe Met Asn His Leu Val Arg Gln Tyr Tyr Glu Gln
 355 360 365

```

Asn Ser His Ile Val Leu Ile Asp Thr Gly Asn Ser Tyr Gln Gly Leu
 370                      375                      380
Cys Glu Leu Ile His Arg Lys Thr Lys Gly Glu Asp Gly Ile Tyr Tyr
385                      390                      395                      400
Thr Tyr Thr Glu Glu Lys Pro Ile Ser Phe Asn Pro Phe Phe Thr Asp
                      405                      410                      415
Asp Tyr Lys Phe Ser Val Glu Lys Lys Asp Ser Ile Lys Thr Leu Leu
                      420                      425                      430
Leu Ala Leu Trp Lys Gly Glu Asp Glu Lys Ile Thr Lys Thr Glu Ser
                      435                      440                      445
Gly Glu Leu Gly Ser Ala Val Ser Ala Tyr Ile Arg Arg Ile Gln Gln
                      450                      455                      460
Asn Arg Asp Ile Val Pro Ser Phe Asp Thr Phe Tyr Glu Tyr Met Leu
465                      470                      475                      480
Asn Asp Tyr Arg Lys Glu Leu Ala Ala Arg Asp Ile Lys Val Ser Arg
                      485                      490                      495
Lys Asp Phe Asn Ile Asp Asn Phe Leu Thr Thr Leu Arg Gln Tyr Tyr
                      500                      505                      510
Lys Gly Gly Arg Tyr Asp Phe Leu Leu Asn Ser Asn Glu Asn Ile Asp
                      515                      520                      525
Leu Leu His Lys Arg Phe Ile Val Phe Glu Ile Asp Ser Ile Lys Asp
                      530                      535                      540
Asn Ala Glu Leu Phe Pro Val Val Thr Ile Ile Met Glu Ala Phe
545                      550                      555                      560
Ile Asn Lys Leu Arg Arg Leu Lys Gly Val Arg Lys Met Leu Ile Cys
                      565                      570                      575
Glu Glu Ala Trp Lys Ala Leu Ser Ser Pro Ser Met Ser Glu Tyr Leu
                      580                      585                      590
Lys Tyr Met Tyr Lys Thr Val Arg Lys Tyr Phe Gly Glu Ala Ile Val
                      595                      600                      605
Val Thr Gln Glu Val Asp Asp Ile Ile Ser Ser Pro Ile Val Lys Glu
                      610                      615                      620
Ala Ile Ile Thr Asn Ser Asp Cys Lys Ile Leu Leu Asp Gln Lys Lys
625                      630                      635                      640
Tyr Met Asn Lys Phe Asp Gly Ile Gln Ser Met Leu Gly Leu Thr Asp
                      645                      650                      655
Lys Glu Lys Ser Gln Ile Leu Ser Ile Asn Leu Ala Asn His Pro Gly
                      660                      665                      670
Arg Lys Tyr Lys Glu Val Trp Ile Gly Leu Asn Gly Val Gln Ser Ala
                      675                      680                      685
Val Tyr Ala Thr Glu Val Ser Ala Ala Glu Tyr Leu Thr Tyr Thr Thr
                      690                      695                      700
Glu Glu Ser Glu Lys Thr Glu Val Phe Ala Leu Pro Lys Lys Leu Gly
705                      710                      715                      720
Gly Asp Leu Glu Leu Ala Ile Lys Arg Leu Ala Glu Thr Lys Tyr Lys
                      725                      730                      735

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<210> 10099

<211> 776

<212> PRT

<213> B.fragilis

<400> 10099

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Phe Ile Pro His Phe Ile Tyr Leu Lys Leu Asn Asn Tyr Met Asn Leu
 1                      5                      10                      15
Phe Lys Ser Ser Val Leu Cys Gly Met Val Ile Val Ser Phe Met Thr
                      20                      25                      30
Ser Cys Thr Asp Val Asp Ile Thr Met Pro Lys Gly Pro Lys Gly Asp
                      35                      40                      45

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Thr	Gly	Leu	Ser	Ala	Tyr	Glu	Phe	Trp	Lys	Glu	Lys	Val	Ala	Asp	Gly
50						55					60				
Thr	Val	Asn	Trp	Pro	Lys	Asp	Gln	Thr	Glu	Val	Ala	Asp	Phe	Phe	Lys
65					70					75					80
Phe	Leu	Lys	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Gln	Ser	Ala
				85					90					95	
Phe	Glu	Gln	Trp	Lys	Asp	Met	Ile	Ala	Ser	Gly	Ser	Val	Asp	Asp	Pro
			100					105					110		
His	Asn	Pro	Gly	Glu	Lys	Trp	Pro	Ser	Glu	Asn	Asn	Thr	Val	Gln	Asp
		115					120					125			
Phe	Trp	Arg	Phe	Leu	Thr	Gly	Ala	Ser	Gly	Glu	Asp	Gly	Gln	Thr	Pro
	130					135					140				
His	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Phe	Ile	Gly	Lys	Glu	Asp	Thr	Gly
145				150						155					160
Ile	Gly	Ala	Arg	Gly	Arg	Asp	Gly	Gln	Asp	Gly	Lys	Asp	Gly	Lys	Asp
				165					170					175	
Gly	Thr	Asn	Gly	Arg	Asp	Ala	Ile	Pro	Pro	Thr	Val	Thr	Ile	Gly	Asp
			180					185					190		
Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly	Thr	Asp	Thr	Gly	Lys	Pro	Ala	Phe
		195					200					205			
Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Ala	Val	Pro	Pro
	210					215					220				
Thr	Val	Thr	Ile	Gly	Asp	Asn	Gly	Asn	Trp	Phe	Val	Asp	Gly	Thr	Asp
225					230					235					240
Thr	Gly	Lys	Lys	Ala	Val	Gly	Gln	Asp	Gly	Lys	Ser	Pro	Glu	Val	Ala
				245					250					255	
Ile	Gly	Asp	Asn	Gly	Asn	Trp	Tyr	Ile	Asn	Gly	Thr	Asp	Thr	Gly	Lys
			260					265					270		
Pro	Ala	Phe	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly	Lys	Asp	Gly
		275					280					285			
Ala	Asn	Gly	Ala	Asn	Gly	Lys	Ser	Ala	Tyr	Glu	Leu	Trp	Lys	Glu	Tyr
	290					295					300				
Ile	Ser	Ser	Gly	Asp	Val	Asp	Asn	Pro	His	Asn	Pro	Asp	Gln	Lys	Trp
305				310						315					320
Pro	Ala	Asp	Arg	Asn	Lys	Gln	Thr	Asp	Phe	Trp	Asp	Phe	Leu	Thr	Gly
				325					330					335	
Lys	Ser	Ser	Val	Ile	Glu	Ile	Glu	Val	Gly	Lys	Tyr	Asn	Val	Ile	Pro
			340					345					350		
Glu	Tyr	Trp	Asn	Ser	Ser	Leu	Lys	Glu	Tyr	Val	Val	Pro	Ser	Asp	Gly
		355					360					365			
Ser	Val	Leu	Phe	Thr	Val	Tyr	Asp	Lys	Thr	Gly	Lys	Lys	Val	Thr	Ala
	370					375					380				
Gly	Val	Lys	Val	Ser	Asp	Leu	Pro	Gly	Val	Ser	Ser	Thr	Asp	Ala	Phe
385				390						395					400
Ile	Thr	Asn													

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      515                      520                      525
Asn Gly Asn Ser Tyr Leu Tyr Ile Ile Arg Pro Leu Val Leu Thr Glu
  530                      535                      540
Thr Glu Lys Ala Asn Val Ala Lys Asn Asp Thr Val Gly Lys Leu Ala
545                      550                      555                      560
Lys Tyr Glu Trp Asp Gln Thr Asp Asn Tyr Ala Ala Leu Tyr Phe Gly
      565                      570                      575
Asp Gly Thr Gly Ser Tyr Asn Asp Tyr Gly Gln Thr Val Tyr Leu Gln
      580                      585                      590
Asp Lys Ile His Val Pro Glu Val Tyr Pro Ala Pro Ser Phe Lys Glu
      595                      600                      605
Asn Ser Val Phe Ile Glu Ile Lys Gln Gly Ile Thr Thr Met Trp Gly
      610                      615                      620
Glu Ile Asp Thr Asp Asn Leu Gln Asn Phe Tyr Lys Thr Tyr Ala Tyr
625                      630                      635                      640
Pro Thr Gly Gln Asp Lys Phe Thr Lys Glu Glu Gly Thr Asn Val Trp
      645                      650                      655
Lys His Pro Glu Gly Lys Leu Pro Ala Ser Glu Leu Glu Glu Asn Arg
      660                      665                      670
Ala Val Phe Ile Glu Met Arg Thr Phe Ile Asn Gly Thr Gly Gly Thr
      675                      680                      685
Val His Thr Gly Ser Lys Pro Leu Ser Thr Gly Gly Lys Arg Phe Lys
690                      695                      700
Leu Thr Ser Thr Tyr Pro Asn Asn Trp Ile Gly Leu Asp Ile Arg Arg
705                      710                      715                      720
Arg Thr Glu Ser Thr Asp Lys Ile Thr Tyr Asn Ile Ser Asn Glu Tyr
      725                      730                      735
Arg Gly Arg Tyr Ala Tyr Tyr Leu Leu Lys Glu Glu Asp Lys Tyr Tyr
      740                      745                      750
Leu Val Asp Phe Ala Asp Trp Ser Lys Arg Met Pro Leu Pro Ile Lys
      755                      760                      765
Asp Cys Pro Val Asp Trp Met Asn
770                      775

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<210> 10100

<211> 177

<212> PRT

<213> B.fragilis

<400> 10100

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Arg Tyr Gly Gln Thr Asp Ile Glu Arg Gly Phe Arg His Thr Glu Arg
1                      5                      10                      15
Arg Gln Arg Gln Asp Gly Tyr His Gly Val Gly Gly Gly Leu Pro Ala
      20                      25                      30
Leu Pro Leu Gly Val Ser Ala Gly Gly Asp Arg Leu Arg Leu Pro Ala
      35                      40                      45
Val Gln Pro Val Arg Asp Ala Gly Thr Gly Gln Pro Gly Gly Thr Gly
      50                      55                      60
Glu Arg Ile Pro Glu Thr Gly Gly Leu Arg Thr Asp Ala Ala Ala Gly
65                      70                      75                      80
Ala Cys Arg Leu Ser Gly Ala Gln Val Pro Gly Gly Ala Ser Pro Arg
      85                      90                      95
His Gly Lys Gly Ala Gly Gly Gly Arg Leu Leu Arg Pro Ala Leu Leu
      100                      105                      110
Arg Pro Ala Gly His Gly Glu Leu Gly Gly His Pro Ala His Asp Arg
      115                      120                      125
Thr Asp Gly Leu His Leu Arg Pro Gly Glu Cys Gly Gln Gly Gly Ile
      130                      135                      140
Gly Glu His Ala Leu Leu Pro Arg Arg Ala Ala Thr Asp Asp Ala Gly

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145 150 155 160
 Gln Arg Asp Glu Pro Pro Glu Gly Ala Leu Pro Phe Leu Glu Pro Ser
 165 170 175
 Arg

<210> 10101

<211> 882

<212> PRT

<213> B.fragilis

<400> 10101

Pro Ile Arg Gln Leu Thr Gly Arg Ala Thr Arg Ser Ala Ser Pro Ser
 1 5 10 15
 Ser Pro Pro Cys Ser Ala Arg Arg Arg Ala Ser Leu Pro Ser Lys Gly
 20 25 30
 Gly Cys Thr Thr Leu Pro His Gly Lys Arg Pro Thr Arg Arg Ser Pro
 35 40 45
 Pro Pro Pro Pro Glu Arg Leu Gln Pro Pro Cys Arg Pro Gln Gly Met
 50 55 60
 Thr Gly Arg Ser Ser Ser Gly Asn Ser Cys Gly Arg Glu Ser Ala Trp
 65 70 75 80
 Tyr Ser Val Arg Met Lys Pro Gly Ala Ser Met Gly Arg Pro Ser Ser
 85 90 95
 Thr Met Pro Pro Lys Pro Ser Ser Thr Ala Pro Val Trp Ala Arg Ser
 100 105 110
 Phe Pro Gln Ala Cys Ser Thr Thr Phe Ser Pro Gly Arg Lys Ala Phe
 115 120 125
 Thr Cys Arg Asn Pro Pro Pro Glu Trp Asn Ile Pro Pro Gly Ser Arg
 130 135 140
 Ser Ile Arg Ala His Pro Asn Gly Thr Asp Ile Pro Ala Ile Val Leu
 145 150 155 160
 Thr Thr Arg Thr Ala Leu Pro Lys Thr Trp Arg Pro Pro Ser Thr Ser
 165 170 175
 Leu Pro Ser Tyr Pro Ala Glu Arg Pro Val Thr Ser Pro Tyr Arg Arg
 180 185 190
 Ser Ala Lys Arg Lys Arg Gly Ala Ser Thr Ala Gly Asn Asn Asn Gln
 195 200 205
 Leu Lys Ile Gln Arg Ile Met Gln Asn Glu Asp Asp Leu Arg Gly Leu
 210 215 220
 Ala Lys Val Met Glu Phe Met Arg Ala Ile Ser Ile Leu Phe Val Val
 225 230 235 240
 Ile Asn Ile Tyr Trp Phe Cys Tyr Gln Ser Val Arg Glu Trp Gly Ile
 245 250 255
 Asp Ile Gly Val Val Asp Arg Ile Leu Leu Gly Phe Gln Arg Thr Ala
 260 265 270
 Gly Leu Phe Ser Asn Ile Leu Trp Thr Lys Leu Phe Ala Val Leu Phe
 275 280 285
 Leu Ala Leu Ser Cys Leu Gly Thr Lys Gly Val Lys Glu Gln Lys Ile
 290 295 300
 Thr Trp Arg Arg Ile Ile Leu Cys Gly Val Ser Gly Leu Leu Leu Phe
 305 310 315 320
 Phe Gly Asn Trp Trp Leu Leu Ala Leu Pro Leu Ser Leu Pro Ala Asp
 325 330 335
 Thr Val Leu Tyr Ile Ala Thr Leu Thr Val Gly Tyr Ile Cys Leu Leu
 340 345 350
 Met Ala Gly Leu Trp Met Ser Arg Leu Leu Lys Thr Asp Leu Leu Glu
 355 360 365
 Asp Val Phe Asn Val Glu Asn Glu Ser Phe Met Gln Glu Thr Lys Leu

370	375	380
Lys Glu Asn Glu Tyr Ser Val Asn Leu Arg Thr Arg Phe Arg Phe Arg		
385	390	395
Gly Arg Ala Tyr Asp Gly Trp Ile Asn Leu Val Asn Pro Phe Arg Ala		400
	405	410
Thr Met Val Leu Gly Thr Pro Gly Ser Gly Lys Ser Tyr Ala Ile Ile		415
	420	425
Asn Gln Tyr Ile Lys Gln Ile Ile Glu Lys Gly Tyr Ser Leu Phe Leu		430
	435	440
Tyr Asp Phe Lys Tyr Pro Asp Leu Ala Glu Ile Ala Tyr Asn His Leu		445
	450	455
Leu Ala His Leu Asp Gly Tyr Lys Val Lys Pro Lys Phe Tyr Val Ile		460
465	470	475
Asn Phe Asp Asn Pro Arg Glu Ser His Arg Cys Asn Pro Ile His Pro		480
	485	490
Asp Phe Met Thr Asp Ile Ser Asp Ala Tyr Glu Ser Ala Tyr Thr Ile		495
	500	505
Met Leu Asn Leu Asn Arg Thr Trp Ile Ser Lys Gln Gly Asp Phe Phe		510
	515	520
Val Glu Ser Pro Ile Ile Leu Ala Ser Ile Ile Trp Tyr Leu Lys		525
530	535	540
Ile Tyr Lys Asn Gly Lys Tyr Cys Thr Phe Pro His Ala Ile Glu Phe		545
545	550	555
Leu Asn Arg Lys Tyr Ala Asp Ile Phe Pro Ile Leu Thr Ser Tyr Pro		560
	565	570
Glu Leu Glu Asn Tyr Leu Ser Pro Phe Met Asp Ala Trp Glu Ser Ser		575
	580	585
Ala Val Glu Gln Leu Gln Gly Gln Ile Ala Ser Ala Lys Ile Pro Leu		590
	595	600
Ser Arg Met Ile Ser Pro Ala Leu Tyr Trp Val Met Thr Ala Asp Asp		605
610	615	620
Phe Thr Leu Asp Ile Asn Asn Pro Glu Glu Pro Lys Val Leu Val Val		625
625	630	635
Gly Asn Asn Pro Asp Arg Gln Gly Ile Tyr Gly Ala Ala Leu Gly Leu		640
	645	650
Tyr Asn Ser Arg Ile Val Lys Leu Ile Asn Lys Lys Lys Arg Leu Lys		655
	660	665
Ser Ser Val Ile Ile Asp Glu Leu Pro Thr Ile Tyr Ile Arg Gly Leu		670
	675	680
Asp Asn Leu Ile Ala Thr Ala Arg Ser Asn Lys Val Ala Val Met Leu		685
	690	695
Gly Phe Gln Asp Phe Ser Gln Leu Lys Arg Asp Tyr Gly Asp Lys Glu		700
705	710	715
Ser Ala Val Ile Cys Asn Thr Val Gly Asn Val Phe Ala Gly Gln Val		720
	725	730
Val Ala Glu Thr Ala Lys Thr Leu Ser Glu Arg Phe Gly Lys Val Leu		735
	740	745
Gln Lys Arg Gln Asn Met Thr Ile Asn Arg Asn Glu Thr Ser Val Ser		750
	755	760
Ile Asn Thr Gln Met Asp Ser Leu Ile Pro Ala Ser Lys Ile Ser Asn		765
	770	775
Leu Thr Gln Gly Met Phe Val Gly Ala Val Ala Asp Asn Phe Asp Glu		780
785	790	795
Arg Ile Glu Gln Lys Ile Phe His Ala Glu Ile Val Val Asp Asn Glu		800
	805	810
Lys Val Arg Arg Glu Thr Ala Arg Tyr Val Lys Ile Pro Gln Ile Ile		815
	820	825
Asp Phe Thr Asp Lys Asp Gly Asn Asp Thr Met Gln Gln Gln Ile Asp		830
	835	840
		845

Ala Asn Tyr Tyr Arg Ile Lys Ser Glu Val Lys Gln Ile Val Ala Asp
 850 855 860
 Glu Ile Glu Arg Ile Lys Ala Asp Pro Lys Leu Ser His Leu Ile Lys
 865 870 875 880
 Asn Gly

<210> 10102
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 10102
 Gln Cys Val Lys Ser Ser Asn Arg Lys Arg Gly Asn Lys Arg Arg Lys
 1 5 10 15
 Arg Val Glu Asp Glu Asp Asp Arg Glu Thr Arg Glu Tyr Phe Leu Gly
 20 25 30
 Lys Gly Ile Ser Ala Gly Pro Lys Gly Ile Val Ala Ile Lys Ala Ser
 35 40 45
 Met Gly Ala Gly Asn Phe Lys Lys Gln Gly Trp Glu Trp Lys Gln Glu
 50 55 60
 Glu Phe Thr Val Lys Asp Gln Arg Thr Leu Leu Lys Asn
 65 70 75

<210> 10103
 <211> 100
 <212> PRT
 <213> B.fragilis

<400> 10103
 Pro Ile Phe Leu Thr Ala Ala Ser Arg Arg Ser Leu Asp Arg Val Ser
 1 5 10 15
 Val Pro Met Trp Gly Thr Phe Leu Ser Glu Pro Leu Ser Ile Glu Gly
 20 25 30
 Leu Val Gly Arg Tyr Leu Thr Asn Asn Leu Met Glu Arg Ile Pro Ile
 35 40 45
 Leu Tyr Arg Asn Pro Leu Ile Met Lys Pro Cys Gly Ile Ile Met Pro
 50 55 60
 Ser Gly Ile Asn Leu Ser Phe Glu Arg Leu Ser Pro Ser Lys Gly Gln
 65 70 75 80
 Val Gly Tyr Val Leu Leu Thr Arg Ala Pro Val Ala Ser Lys Glu Ser
 85 90 95
 Lys Leu Ser Ser
 100

<210> 10104
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 10104
 Lys Asn Ile Asn Met Glu Thr Arg Thr Leu Ala Glu Asn Gly Thr Pro
 1 5 10 15
 Val Thr Lys Glu Lys Thr Val Ala Phe Ser Gly His Arg Thr Asn Arg
 20 25 30
 Ile Ala Lys Phe Thr Ala Asp Arg Glu Lys Leu Phe Arg Glu Val Ala
 35 40 45
 Phe Asp Thr Phe Val Ala Ile Glu Ser Tyr Cys Ile Lys Lys Gly Tyr
 50 55 60

His Thr Phe Leu Ser Gly Met Cys Glu Gly Phe Asp Leu Ile Ala Ala
 65 70 75 80
 Glu Glu Val Leu Asn Leu Lys Lys Glu Tyr Pro His Ile His Leu Lys
 85 90 95
 Cys Val Leu Pro Phe Lys Gly Gln Ala Glu Arg Tyr Thr Gln Ala Asp
 100 105 110
 Lys Arg Arg Tyr Asp Thr Ile Leu Ala Gln Ala Asp Glu Val Val Thr
 115 120 125
 Leu Gln Asp Gly Tyr Thr Glu Gly Cys Phe Leu Arg Arg Asn Asp Tyr
 130 135 140
 Leu Leu Glu Asn Ser Ala Phe Leu Met Val Tyr Tyr Asp Ser Val Ala
 145 150 155 160
 Val Gly Gly Thr Phe Tyr Ile Leu Lys Arg Ala Val Glu Gln Lys Lys
 165 170 175
 Lys Phe Ala Asn Val Cys Tyr Asn Arg Arg
 180 185

<210> 10105

<211> 131

<212> PRT

<213> B.fragilis

<400> 10105

Asn Phe Val Lys Leu Lys Lys Asn Gly Ile Lys Met Arg Arg Leu Asn
 1 5 10 15
 Leu Ile Leu Leu Leu Ser Ala Val Thr Val Ala Leu Ala Phe Val Ile
 20 25 30
 Ser Cys Lys Glu Thr Asn Ala Glu Arg Leu Glu Lys Met Cys Gly Glu
 35 40 45
 Trp Val Ser Thr Gly Gly Lys Pro Pro Phe Thr Leu Trp Glu Glu Asp
 50 55 60
 Gly Lys Tyr Arg Val Thr Val Met His Arg Asn His Lys Gly Asp Ser
 65 70 75 80
 Glu Ala Glu Thr Tyr Leu Val Arg Glu Thr Glu Gly Val Leu Phe Ile
 85 90 95
 Glu Thr Gly Phe Ala Val Met Met Asp Tyr Asp Arg Glu Lys Asp His
 100 105 110
 Ile Arg Leu Ser Pro Gly Gly Glu Tyr Arg Arg Lys Ser Asp Gly Thr
 115 120 125
 Leu Lys Gln
 130

<210> 10106

<211> 154

<212> PRT

<213> B.fragilis

<400> 10106

Thr Gly Arg Lys Glu Ile Ile Tyr Arg Ile Arg Val Thr Asn Lys Lys
 1 5 10 15
 Gln Thr Ile Met Lys Arg Ile Leu Tyr Phe Phe Ser Val Met Leu Cys
 20 25 30
 Ile Leu Ala Val Thr Gly Cys Gln Asp Arg Asp Ile Ile Asp Phe Lys
 35 40 45
 Asp Gly Val Ser Leu Pro Pro Val Thr Asp Leu Lys Ser Ser Leu Thr
 50 55 60
 Pro Asp Asn Asp Ala Val Leu Glu Trp Lys Leu Pro Ser Ala Ile Pro
 65 70 75 80
 Glu Glu Ile Gln Arg Pro Leu Ser Val Tyr Val Gln Val Tyr Lys Gly

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<210> 10107
<211> 286
<212> PRT
<213> B.fragilis
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<210> 10108
<211> 211
<212> PRT
<213> B.fragilis
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Lys Thr Gly Asn Met Glu Phe Lys Ser Leu Lys Asn Ile Glu Thr Ser
 1 5 10 15
 Phe Arg Gln Ile Arg Leu Phe Thr Leu Val Phe Ala Cys Leu Cys Ala
 20 25 30
 Val Val Thr Gly Phe Ala Leu Trp Lys Ser Tyr Ser Phe Ala Glu Ala
 35 40 45
 Gln Arg Gln Lys Ile Tyr Val Leu Asp Asn Gly Lys Ser Leu Met Leu
 50 55 60
 Ala Leu Ser Gln Asp Val Arg Gln Asn Arg Pro Val Glu Ala Arg Glu
 65 70 75 80
 His Val Arg Arg Phe His Glu Leu Phe Phe Thr Leu Ser Pro Asp Lys
 85 90 95
 Ser Ala Ile Glu Gly Asn Ile Lys Arg Ser Leu Leu Leu Ala Asp Lys
 100 105 110
 Ser Ala Phe Asn Tyr Tyr Lys Asp Leu Ser Glu Lys Gly Tyr Tyr Asn
 115 120 125
 Arg Ile Ile Ser Gly Asn Ile Asn Gln Met Ile Glu Ile Asp Ser Leu
 130 135 140
 Arg Cys Asp Phe Asp Lys Tyr Pro Tyr Ser Val Arg Thr Phe Ala Arg
 145 150 155 160
 Gln Ile Ile Leu Arg Glu Ser Ser Val Thr Glu Arg Ser Leu Val Thr
 165 170 175
 Arg Cys Arg Leu Leu Asp Ala Val Arg Ser Asp Asn Asn Pro Gln Gly
 180 185 190
 Phe Ile Ile Glu Gly Phe Glu Ile Thr Glu Asn Lys Asp Leu Gln Thr
 195 200 205
 Leu Lys Arg
 210

<210> 10109

<211> 192

<212> PRT

<213> B.fragilis

<400> 10109

Leu Asn Met Lys Lys Lys Ile Thr Ile Cys Phe Val Cys Leu Ser Leu
 1 5 10 15
 Leu Leu Val Ser Leu Ala Val Arg Gly Gln Asp Thr Lys Thr Thr Arg
 20 25 30
 Arg Val Pro Leu Gln Ala Glu Val Thr His Asp Gly Leu Ser Glu Lys
 35 40 45
 Glu Ser Lys Ala Trp Glu Ile Gly Leu Gly Gly Ser Leu Ile Asn Trp
 50 55 60
 Ser Arg Val Ser Val Thr Gly Phe Arg Ser Thr Pro Asp Asn Tyr Phe
 65 70 75 80
 Tyr Asn Leu Lys Ala Asn His Leu Met Gly Gly Ala Asn Leu Tyr Ile
 85 90 95
 Ala Arg Glu Leu Asn Arg Trp Phe Tyr Leu Asp Leu Gln Gly Ser Val
 100 105 110
 Gly Leu Thr Lys Asn Asn Asn Arg Thr Ala Gly Asp Asp Arg Lys Arg
 115 120 125
 Asp Leu Leu Tyr Met Gly Gly Leu Gly Leu Gln Phe Arg Phe Thr Pro
 130 135 140
 Leu Leu Arg Ser Gln Trp Val Glu Pro Tyr Leu Arg Val Gly Val Asn
 145 150 155 160
 Tyr Leu His Lys Asp Phe Ala Ser Val Tyr Gly Gly Asn Phe Glu Asp
 165 170 175
 Asp Pro Thr Gly Ser Ser Pro Arg Gly Trp Lys Asp Arg Arg Gly Ser
 180 185 190

<210> 10110
 <211> 191
 <212> PRT
 <213> B.fragilis

<400> 10110

Gln	Leu	Ser	Asn	His	Glu	Ala	Asp	Ser	His	Ala	Asp	Leu	Arg	Val	Glu
1				5					10					15	
Phe	Pro	Ala	Val	Ala	Ala	Glu	Gln	His	Pro	Leu	Ala	Thr	Val	Tyr	Gln
			20					25					30		
Gln	Asp	Asn	Leu	Val	Arg	His	Val	Gly	Gly	Gln	Leu	Gln	Arg	Glu	Arg
		35					40					45			
Thr	Pro	Val	Asp	Glu	Ile	Val	Leu	Ile	Arg	Glu	Pro	Gly	Ala	Val	Arg
		50				55					60				
Gln	Gln	Ala	Leu	Ala	Pro	Val	His	Arg	Leu	Val	Pro	Gly	Lys	Gly	Gly
65					70					75				80	
Gln	Ser	Gln	Cys	Gly	Glu	Glu	Arg	Leu	Leu	Pro	Val	Gly	Lys	Glu	Val
			85						90					95	
Gln	Val	Ile	Ala	Ala	Leu	Ala	Arg	Glu	Leu	Ala	Arg	Arg	Ile	Glu	Ala
			100					105					110		
Val	Pro	Val	Ala	Val	Pro	Leu	Leu	Gln	Val	Phe	His	Thr	Asp	His	Pro
			115					120					125		
Met	Val	Gly	Val	Leu	Arg	Val	Gly	Ala	His	Arg	Tyr	Pro	Gly	Val	Val
			130				135				140				
Ala	Glu	Ala	Val	Ala	Val	Phe	Pro	Ala	His	Val	Val	Arg	Gln	Pro	Ala
145					150					155				160	
Arg	Glu	Leu	Tyr	Ala	Pro	His	Ser	Gly	Gln	Ala	Pro	Leu	Gly	Val	Cys
				165					170					175	
Pro	Val	His	Met	Gln	Ala	His	Pro	Glu	Lys	Gln	Asp	Asn	Glu	Gln	
			180					185					190		

<210> 10111
 <211> 233
 <212> PRT
 <213> B.fragilis

<400> 10111

Ser	Lys	Asn	Glu	Lys	Glu	Arg	Gln	Pro	Pro	Glu	Gly	Val	Pro	Arg	His
1				5					10					15	
Ser	Ala	Ala	Gly	Lys	Gly	Ile	Leu	Asn	Leu	Ser	Gly	Arg	Thr	Asp	Phe
			20					25					30		
Ile	Phe	Lys	Arg	Lys	Trp	Gln	Val	Val	Cys	Cys	Gly	Thr	Arg	Asn	Glu
		35					40					45			
Phe	Arg	Ala	Ser	Pro	Pro	Pro	Cys	Pro	Leu	Asp	Val	Ala	Phe	Pro	Ser
		50				55					60				
Gly	Val	Gly	Gly	Cys	Ser	Arg	Gly	Arg	Ala	Val	Gly	Ile	Arg	Arg	Phe
65					70					75				80	
Gln	Thr	Met	Phe	His	Leu	Lys	Phe	Tyr	Arg	Met	Met	Asp	Asn	Gln	Lys
				85					90					95	
Lys	Tyr	Ala	Gly	Asn	His	Gly	Arg	Lys	Pro	Lys	Pro	Asp	Lys	Met	Arg
			100					105					110		
His	Arg	Tyr	Val	Phe	Arg	Leu	Asp	Asp	Gly	Asp	Asn	Ala	Arg	Phe	Leu
			115				120					125			
Ala	Leu	Phe	Asp	Glu	Ser	Gly	Lys	Ala	Thr	Lys	Ala	Glu	Phe	Ile	Val
			130				135				140				
Ser	Ala	Leu	Phe	Gly	Lys	Glu	Ile	Lys	Val	Ile	Lys	Leu	Asp	Lys	Gly
145					150					155				160	
Thr	Gln	Asp	Phe	Tyr	Met	Arg	Leu	Thr	Thr	Phe	His	Ser	Gln	Phe	Arg

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<210> 10112
<211> 74
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (67)
<223> Identity of amino acid sequences at the above locations are unknown.
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<210> 10113
<211> 109
<212> PRT
<213> B.fragilis
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<210> 10114
<211> 278
<212> PRT
<213> B.fragilis
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Val Asn Arg Glu Ala Ala Ala Arg Ala Ala Arg Met Asn Asn Gln Gln
1      5      10      15
Asn Asp Asp Met Asp Arg Gln Thr Leu Asn Val Ala Phe Ala Thr Gln
20      25      30
Lys Gly Gly Ser Gly Lys Thr Ala Ile Thr Val Leu Val Ala Gly Tyr
35      40      45
Leu His Tyr Arg Leu Gly Cys Pro Leu Ala Val Ile Asp Cys Asp Phe
50      55      60
Pro Gln Tyr Ser Leu Tyr Glu Met Arg Glu Arg Asp Ser Arg Ala Val
65      70      75      80
Leu Glu Asn Glu Tyr Leu Lys Arg Ala Ala Tyr Glu Gln Met Arg Gln
85      90      95
Pro Gly Arg Ala Ala Tyr Pro Val Arg Lys Cys Arg Val Glu Gln Ala
100     105     110
Pro Asp Thr Ala Arg Glu Leu Ala Ala Glu Gly Cys Tyr Asp Leu Leu
115     120     125
Phe Phe Asp Leu Pro Gly Thr Val Asn Ser Ala Gly Ile Leu Arg Thr
130     135     140
Ile Ala Gln Met Asp Tyr Ile Phe Ala Pro Val Ser Ala Asp Lys Ala
145     150     155     160
Val Leu Glu Ser Thr Leu Ser Phe Leu Asp Val Leu Gln Arg Met Met
165     170     175
Leu Gly Lys Glu Thr Ser Arg Leu Lys Gly Leu Tyr Leu Phe Trp Asn
180     185     190
Gln Val Asp Lys Arg Glu Thr Ser Gly Leu Tyr Glu Lys Tyr Gly Gln
195     200     205
Val Val Ala Asp Met Arg Leu Pro Met Leu Gln Thr Arg Ile Pro Asp
210     215     220
Thr Lys Arg Phe Arg Lys Glu Ala Asp Ser Thr Gly Arg Thr Val Phe
225     230     235     240
Arg Ser Thr Leu Leu Ala Pro Asp Arg Arg Met Leu Ala Gly Ser Gly
245     250     255
Ile Pro Glu Leu Thr Arg Glu Ile Ala Thr Ile Leu Lys Leu Glu Gly
260     265     270
Tyr Glu Glu Ala Ala Glu
275

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<210> 10115

<211> 213

<212> PRT

<213> B.fragilis

<400> 10115

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Asn Ser Lys Asp Met Arg Thr Ile Lys Ala Ile Ile Leu Gly Val Ala
1      5      10      15
Cys Leu Thr Ala Gly Ala Ala Asn Ala Gln Trp Val Val His Asp Pro
20      25      30
Gly Asn Leu Ala Gln Gly Ile Ile Asn Thr Ala Lys Glu Ile Val Glu
35      40      45
Thr Ser Ala Thr Ala Gln His Thr Leu Asp Gly Phe Arg Glu Thr Ala
50      55      60
Lys Ile Phe Glu Gln Gly Arg Lys Tyr Tyr Asn Ala Leu Lys Ala Val
65      70      75      80
His Asp Val Val Lys Gly Gly Val Lys Val Lys Lys Ser Ile Gly Leu
85      90      95
Val Ala Asp Ile Ser Glu Ile Tyr Val Arg Asn Tyr Gln Lys Met Leu
100     105     110
Gly Asp Pro Asn Tyr Thr Pro Asp Glu Leu Glu Thr Ile Ser Phe Gly
115     120     125

```

Tyr Ala Lys Leu Leu Ser Glu Ser Ala Asp Ile Leu Gln Asp Leu Lys
 130 135 140
 Asn Val Val Asn Val Thr Gly Met Ser Leu Ser Asp Ala Glu Arg Leu
 145 150 155 160
 Ala Ile Ile Asp Gln Ser Tyr Lys Arg Leu Leu Glu Tyr Arg Asn Leu
 165 170 175
 Val Gln Tyr Tyr Thr Asp Lys Asn Ile Ser Val Ser Tyr Leu Arg Ala
 180 185 190
 Lys Lys Lys Lys Asp Ala Asp Arg Val Val Ala Leu Tyr Gly Asp Ala
 195 200 205
 Glu Asp Arg Tyr Trp
 210

<210> 10116

<211> 359

<212> PRT

<213> B.fragilis

<400> 10116

Asn Gly Lys Asp Ala Gly Arg Thr Pro Gly Thr Arg Ser Ala Gly Ser
 1 5 10 15
 Ser Ser Thr Gly Lys Ala Arg Ser Asn Trp Met Thr Ala Arg Cys Cys
 20 25 30
 Cys Pro Met Thr Ala Thr Arg Trp Arg Lys Arg Arg Ser Gly Ser Ile
 35 40 45
 Thr Pro Gly Cys Arg Thr Ser Arg Ala Ala Ser Pro Ser Gly Trp Arg
 50 55 60
 Thr Arg Thr Val Arg Arg Ser Ser Trp Asn Thr Thr Ser Met Arg Thr
 65 70 75 80
 Thr Thr Arg Arg Thr Gly Met Glu Val Glu Leu Gly Lys Ser Glu Val
 85 90 95
 Pro Ala Leu Ala Glu Leu Lys Asp Leu Cys Arg His Glu Cys Thr Ala
 100 105 110
 Glu Arg Tyr Ala Asp Thr Val Arg Glu Phe Gly Trp Ser Leu Glu His
 115 120 125
 Val Leu Glu Asp Met Lys Thr Pro Glu Met Cys Arg Arg Ala Leu Glu
 130 135 140
 Ala Ser Ala Glu Leu Gly Tyr Gly His Leu Ala Leu Leu His His Ile
 145 150 155 160
 Pro Phe Ala Glu Val Cys Met Glu Ala Ile Arg Asp Trp Tyr Gly Glu
 165 170 175
 Gly Arg Ala Asp Leu Tyr Glu Val Ala Ser Ala Ile Arg Pro Glu Val
 180 185 190
 Phe Asp Gly Lys Met Ala Asp Phe Leu Val Ala Glu Asp Gly Arg Cys
 195 200 205
 Leu Ser Leu Leu Leu Val His Leu Gln Thr Pro Glu Leu Trp Arg Lys
 210 215 220
 Cys Ala Glu His Asn Trp Met Ser Phe Val Met Ile Pro Trp Arg Glu
 225 230 235 240
 Arg Ser Leu Glu Ala Cys Leu Thr Ala Tyr Leu Asn Tyr Pro Gly Met
 245 250 255
 Ile His Ala His Pro His Val Val Pro Gln Pro Val Asp Ser Tyr Tyr
 260 265 270
 Asn Val Tyr Ser Leu Cys Arg Leu Met Glu Gln Met Thr Gly Glu Lys
 275 280 285
 Phe Thr Cys Gly Gln Met Ala Asp Phe Tyr Gly Gly Lys Arg Met Ala
 290 295 300
 Val Lys Cys Ile Glu Val Pro Asp Gly Phe Leu Lys Asp Arg Glu Val
 305 310 315 320

Leu Ser Thr Gly Arg Lys Arg Arg Ser Ala Ser Pro Leu Ser Ala Ser
 325 330 335
 Gly Arg Ser Arg Gly Ser Arg Asn Ser Lys Ser Arg Asn Gly Thr Thr
 340 345 350
 His Pro Arg Gly Ala Thr Glu
 355

<210> 10117

<211> 349

<212> PRT

<213> B.fragilis

<400> 10117

Arg Ala Val Cys Gln Leu Gly Gly Gly Val Tyr Ala Ala His Gly Leu
 1 5 10 15
 Arg Arg Pro Ala Leu Tyr Arg Leu Ser Pro Gln Arg His Arg Ala Gly
 20 25 30
 Ala Pro Ala His Arg Phe Arg Pro Gly Gly Arg Asn Arg Ala Gly Asp
 35 40 45
 Phe Arg Gln Leu Arg Thr Arg Glu Phe Asp Glu Gly Leu Pro Gly Ala
 50 55 60
 Gly Thr Ala Val Arg Ser Cys Pro Gly Tyr Ala Gln Ala Val Glu Gly
 65 70 75 80
 Gly Thr Thr Leu Val Ala Arg Arg Leu Arg Gly Arg Gln Ser Gln Gly
 85 90 95
 Thr Val Gly Arg Ser His Pro Pro Ala Arg Pro Gly Val Ala Phe Pro
 100 105 110
 Tyr Ile Gly Arg Ile Pro Cys Arg Ala Phe Pro Tyr Arg Ile Thr Val
 115 120 125
 Asp Glu Val Lys Gly Glu Tyr Gly Gly Arg Glu Tyr His Gly Leu Thr
 130 135 140
 Tyr Ser Ala Thr Asp Arg Glu Gly Asn Lys Val Gly Lys Pro Phe Lys
 145 150 155 160
 Ser Ser Val Phe Gly Lys Glu Ala Gly Ile Ala Ala Leu Glu Arg Arg
 165 170 175
 Met His Asn Ala Ala Ala Trp Glu Lys Thr His Lys Glu Val Ala Ala
 180 185 190
 Ala Thr Ala Gly Lys Val Ala Ala Met Gln Thr Ala Gly His Asp
 195 200 205
 Arg Ala Gln Phe Glu Arg Glu Leu Met Arg Gln Gly Ile Gly Val Val
 210 215 220
 Phe Arg Gln Asn Glu Ala Gly Arg Ile Tyr Gly Ala Thr Phe Ile Asp
 225 230 235 240
 His Ala Ala Lys Ala Val Phe Asn Gly Ser Arg Leu Gly Lys Glu Phe
 245 250 255
 Ser Ala Gly Val Phe Asn Asp Leu Phe Ala Gly Gln Glu Gly Ile His
 260 265 270
 Leu Pro Gln Pro Ser Ala Gly Val Glu His Pro Thr Arg Gln Gln Glu
 275 280 285
 His Thr Gly Ala Ser Gln Trp Asp Gly His Thr Gly Tyr Arg Pro Asp
 290 295 300
 His Lys Asp Gly Thr Thr Gln Asn Val Ala Ala Ser Phe Asn Leu Phe
 305 310 315 320
 Ala Leu Val Pro Gly Gly Ala Ser Gly Asp Gln Pro Val Pro Pro Gln
 325 330 335
 Arg Lys Lys Lys Lys Arg Arg Lys Tyr Gly Arg Gln Gln
 340 345

<210> 10118

<211> 226
 <212> PRT
 <213> B.fragilis

<400> 10118

```

Gly Trp Leu Leu Ser His Gly Ser Val Arg Gly Cys Arg Cys Leu Pro
1          5          10          15
Ala Ser Ala Cys Arg Glu Pro Ala Ala Trp Ser Gly Thr Pro Ser Val
          20          25          30
Pro Tyr Cys Pro Pro Pro Cys Gly Ser Val Ser Cys Arg Gly Cys Gly
          35          40          45
Phe Ala Ala Ser Ala Ala Ser Cys Arg Arg Leu Pro Ala Arg Thr Ser
          50          55          60
Arg Thr Ala Arg Ser Phe Pro Ala Tyr Arg Leu Gly Ser Arg Lys Gly
65          70          75          80
Lys Ala Pro Ser Gly Gly Ser Ser Leu Cys Pro Ala Ser Ser Val Ala
          85          90          95
Ala Arg Arg Gly Arg Arg Ala Cys Ser Pro Ile Pro Pro Cys Pro His
          100          105          110
Ser Pro Gly Arg Arg Cys Ser Pro Ser Val Arg Ser Cys Ala Gly Cys
          115          120          125
Pro Pro Ser Ser Pro Cys Pro Ala Gly Arg Arg Arg Ala Gly Arg Ser
          130          135          140
Ser Leu Pro Pro Pro Ala Pro Leu Pro Cys Arg Gly Leu Ala Pro Pro
145          150          155          160
Gly Thr Cys Ala Pro Asp Arg Arg His Ala Pro Ala Ala Ala Ser Val
          165          170          175
Arg Lys Pro Pro Val Ser Gly Ile Arg Ser Pro Val Pro Pro Gly Cys
          180          185          190
Pro Val Pro Ala Ser Arg Thr Gly Cys Thr Ala Gly Ser Arg Ser Arg
          195          200          205
Ser Pro Pro Ala Asp Thr Pro Ser Gly Ser Ala Gly Ser Pro Pro Pro
          210          215          220
Thr Pro
225

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<210> 10119
 <211> 116
 <212> PRT
 <213> B.fragilis

<400> 10119

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Arg Asp His Arg Arg Gln Ala Glu Ser Leu Arg Ala Gly Ala Gly Gly
1          5          10          15
Glu Thr Ala Gly Gly Glu Gly Ala Leu Ala Gly Gly Leu Arg Leu Leu
          20          25          30
Arg Arg Glu Arg Tyr Gly Arg Gly Gly Asn Gly Thr Ala Gly Gln Arg
          35          40          45
Ala Gly Thr Gly Thr Val Gln Gly Leu Phe Gly Gln Trp Arg Arg Gln
          50          55          60
Pro Phe Phe Arg Tyr Arg Leu Pro Gly His Gln Pro Ser Ala Arg Leu
65          70          75          80
Val Leu Arg Gly Thr Glu Gly Gly Arg Gly Lys Gly Gly Ala Glu Lys
          85          90          95
Ala Gly Gly Gly Val Asp Arg Gln Ala Gly Arg Lys Gly Thr Ala Gly
          100          105          110
Gly Arg Asn Arg
          115

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<210> 10120
 <211> 101
 <212> PRT
 <213> B.fragilis

<400> 10120
 Thr Pro His Arg Ser Gly Ala Val Ala Ala Pro Ile Pro Ser Ala Pro
 1 5 10 15
 Val Pro Pro Ala Pro Pro Arg Arg Ala Val Leu Asp Cys Cys Arg Ser
 20 25 30
 Ala Arg Leu Arg Arg Pro Ser Arg Ser Val Pro Cys Thr Trp Arg Gln
 35 40 45
 Ala Arg Ser Ser Ser Pro Ser Ala Pro Pro Asp His Arg Phe Arg Pro
 50 55 60
 Pro Ala Val Pro Phe Leu Pro Ala Trp Arg Ser Thr Pro Pro Pro Ala
 65 70 75 80
 Phe Ser Ala Pro Pro Phe Pro Arg Pro Pro Ser Val Pro Arg Arg Thr
 85 90 95
 Ser Arg Ala Asp Gly
 100

<210> 10121
 <211> 596
 <212> PRT
 <213> B.fragilis

<400> 10121
 Gln Arg Asn Arg Phe Pro Asp Arg Lys Lys Leu Ser Lys Arg Thr Arg
 1 5 10 15
 Ile Asn Asn Gln Leu Lys Asn Lys Arg Ile Met Lys Thr Lys Ala Asn
 20 25 30
 Gln Ser Ala Ala Glu Arg Asn Ile Thr Met Val Ala Leu Ala Asn Ile
 35 40 45
 Gln Pro Ser Gly Phe Asn Pro Arg Lys Arg Phe Asp Glu Thr Ser Leu
 50 55 60
 Tyr Glu Leu Ala Glu Ser Ile Lys Arg Gln Gly Val Leu Gln Pro Ile
 65 70 75 80
 Thr Val Arg Pro Val Asp Gly Thr Asp Arg Tyr Gly Ile Val Phe Gly
 85 90 95
 Glu Arg Arg Tyr Arg Ala Ser Val Ile Ala Gly Arg Asp Glu Ile Pro
 100 105 110
 Ala Ile Val Ser Glu Leu Ser Asp Glu Glu Ala Glu Glu Met Ala Ile
 115 120 125
 Thr Glu Asn Leu Gln Arg Lys Asp Val Thr Pro Val Glu Glu Ala Ala
 130 135 140
 Ala Tyr Gln Arg Leu Ile Glu Ser Gly Arg His Thr Val Gln Thr Leu
 145 150 155 160
 Ala Val Leu Phe Gly Lys Asn Glu Asn Tyr Ile Arg Thr Arg Leu Lys
 165 170 175
 Phe Thr Ala Leu Ile Pro Glu Ile Ala Ala Leu Leu Asp Ala Asp Glu
 180 185 190
 Ile Thr Ile Ser Val Ala Ala Glu Ile Cys Arg Tyr Gly Glu Asp Ile
 195 200 205
 Gln Arg Glu Val Tyr Glu Lys His Leu Gln Asp Glu Gly Thr Tyr Asn
 210 215 220
 Ser Trp Arg Gly Leu Lys Ala Ala Asp Val Ala Arg Arg Ile Glu Gln
 225 230 235 240
 Asn Phe Thr Thr Asp Leu Gln Tyr Tyr His Phe Asp Lys Ala Glu Cys
 245 250 255

Ala Thr Cys Ala His Asn Thr Asn Asn Leu Leu Leu Phe His Asp Gly
 260 265 270
 Gly Cys Gly His Cys Ala Asn Arg Thr Cys Leu Ala Glu Met Asn Ala
 275 280 285
 Ser Phe Leu Met Glu Arg Ala Val Gln Ile Met Arg Asn Gln Pro Glu
 290 295 300
 Val Ser Leu Cys Arg Asp Cys Tyr Thr Ala Asn Glu Thr Val Val Glu
 305 310 315 320
 Arg Leu Thr Ala Ser Gly Tyr Glu Val Glu Thr Leu Asp Arg Tyr Thr
 325 330 335
 Ala Phe Pro Ser Cys Pro Lys Glu Pro Lys Ala Glu Asn Phe Asn Asp
 340 345 350
 Pro Glu Arg Tyr Gly Glu Ala Arg Thr Arg Tyr Glu Gln Gln Trp Ala
 355 360 365
 Asp Tyr Met Glu Gln Glu Glu Glu Ile Thr Arg Arg Ser Gly Ala Gly
 370 375 380
 Glu Ile Thr Val Tyr Ala Lys Ile Gly Gln Lys Glu Ile Thr Phe Cys
 385 390 395 400
 Tyr Val Glu Asn Val Thr Glu Thr Glu Thr Ala Asp Gly Thr Pro Ala
 405 410 415
 Pro Ala Pro Leu Ser Pro Val Glu Lys Leu Glu Lys Gln Asp Lys Arg
 420 425 430
 Asn Lys Glu Ile Ala Leu Glu Arg Thr Val Glu Asp Thr Lys Lys Gln
 435 440 445
 Ile Leu Glu Ala Asp Ile Thr Gly Gly Lys Phe Ser Ala Asp Glu Asp
 450 455 460
 Thr Met Leu Tyr Phe Phe Leu Leu Ser Ser Leu Arg Lys Glu His Phe
 465 470 475 480
 Ala Ala Val Gly Ile Ala Glu Asp Lys Pro Tyr Ile Thr Asp Glu Asp
 485 490 495
 Lys Met Gly Ile Ile Gly Asn Leu Thr Val Lys Met Lys Thr Ile Ile
 500 505 510
 Arg Arg Asp Phe Leu Val Ala Asn Phe Lys Gly Ala Tyr Gly Asn Asn
 515 520 525
 Thr Val Ala Thr Leu Leu Leu Asp Phe Ala Arg Arg His Met Pro Glu
 530 535 540
 Glu Leu Ala Asn Ile Glu Arg Glu Tyr Asn Gly Val Tyr Glu Lys Arg
 545 550 555 560
 His Gln Arg Ile Glu Glu Lys Lys Ala Val Leu Leu Val Gln Glu Arg
 565 570 575
 Ala Arg Glu Arg Lys Val Thr Gln Pro Glu Glu Gln Pro Gln Pro Glu
 580 585 590
 Glu Ile Ala Ala
 595

<210> 10122

<211> 78

<212> PRT

<213> B.fragilis

<400> 10122

Gly Glu Asn Arg Glu Phe Asn Gly Asn Leu Thr Glu Ile Lys Arg Gly
 1 5 10 15
 Leu Ser Lys Lys Leu Gly Gly Thr Leu Ala Gly Ile Glu Arg Glu Ser
 20 25 30
 Asp Arg Asn Gln Thr Lys Ile Glu Arg Lys Thr Ala Leu Thr Leu Leu
 35 40 45
 Met Gln Leu Gly Arg Asp Leu Phe Gln Gly Arg Lys Glu Gln Ser Phe
 50 55 60

Gly Phe Glu Lys Thr Cys Tyr Leu Glu Ile Lys Gly Leu Ile
 65 70 75

<210> 10123

<211> 457

<212> PRT

<213> B.fragilis

<400> 10123

Trp	Lys	Asn	Arg	Pro	Lys	Lys	Lys	Gln	Arg	Pro	Thr	Gln	His	Val	Thr
1				5					10					15	
Val	Ala	Asp	Ala	Pro	Thr	Pro	Glu	Thr	Gly	Asn	Gly	Lys	Lys	Glu	Asp
			20					25					30		
Lys	Gly	Gly	Gly	Lys	Lys	Glu	Lys	Lys	Thr	Ala	Lys	Pro	Leu	Thr	Pro
		35					40					45			
Lys	Gln	Leu	Gln	Gln	Arg	Lys	Lys	Leu	Met	Val	Tyr	Pro	Leu	Met	Gly
	50					55				60					
Leu	Leu	Phe	Leu	Gly	Ser	Met	Trp	Leu	Ile	Phe	Ala	Pro	Ser	Glu	Glu
65					70					75					80
Arg	Asp	Val	Asn	Arg	Asp	Thr	Val	Gly	Ala	Phe	Asn	Ala	Asp	Ile	Pro
			85					90						95	
Leu	Pro	Glu	Asn	Asp	Gly	Ile	Ile	Gly	Asp	Lys	Arg	Lys	Ala	Tyr	Glu
			100					105					110		
Gln	Ala	Gln	Ala	Glu	Lys	Gln	Gln	Ala	Glu	Lys	Val	Arg	Ser	Leu	Glu
		115					120					125			
Asp	Phe	Ala	Phe	Ser	Glu	Glu	Ser	Asp	Met	Asp	Gly	Val	Glu	Met	Glu
	130					135				140					
Leu	Pro	Asp	Ser	Glu	Pro	Glu	Arg	Glu	Pro	Phe	Arg	Asp	Tyr	Ser	Asp
145					150					155					160
Asn	Gly	Gly	Gly	Ser	Arg	Ser	Ser	Val	Thr	Ala	Tyr	Arg	Asp	Ile	Asn
				165				170						175	
Arg	Gln	Leu	Gly	Ser	Phe	Tyr	Glu	Glu	Pro	Lys	Val	Asp	Gly	Glu	Lys
		180						185					190		
Glu	Glu	Leu	Lys	Arg	Gln	Val	Glu	Glu	Leu	Thr	Ala	Lys	Leu	Glu	Glu
		195					200					205			
Arg	Glu	Arg	Gln	Ala	Gly	Gly	Ile	Asp	Asp	Gln	Val	Ala	Leu	Met	Glu
	210					215					220				
Lys	Ser	Tyr	Glu	Leu	Ala	Lys	Tyr	Met	Gly	Gln	Asn	Gly	Lys	Asp	
225					230					235				240	
Gly	Ala	Ala	Val	Gln	Asn	Asp	Asn	Ser	Pro	Arg	Gln	Pro	Ala	Val	Ala
				245					250					255	
Val	Gln	Val	Ala	Arg	Glu	Arg	Thr	Val	Ser	Gly	Leu	Gln	Gln	Pro	Leu
			260					265						270	
Ser	Asp	Ala	Glu	Phe	Met	Arg	Arg	Tyr	Ser	Gln	Pro	Arg	Asn	Tyr	Gly
		275					280					285			
Phe	Asn	Thr	Ala	Val	Gly	Ser	Gly	Tyr	Thr	Met	Gly	Lys	Asn	Thr	Ile
	290					295					300				
Arg	Ala	Cys	Ile	His	Gly	Asp	Gln	Thr	Ile	Met	Asp	Gly	Gln	Thr	Val
305					310					315					320
Lys	Leu	Arg	Leu	Leu	Glu	Pro	Leu	Gln	Ala	Gly	Asn	Leu	Val	Ile	Pro
				325					330					335	
Gln	Asn	Thr	Leu	Val	Ala	Gly	Thr	Gly	Lys	Val	Gln	Gly	Glu	Arg	Leu
			340					345					350		
Asp	Ile	Val	Val	Ser	Ser	Ile	Glu	Tyr	Arg	Gly	Asn	Leu	Leu	Pro	Val
	355						360				365				
Glu	Leu	Ala	Val	Tyr	Asp	Ser	Asp	Gly	Gln	Lys	Gly	Leu	Ser	Val	Pro
	370					375					380				
Ser	Ser	Leu	Glu	Gln	Glu	Ala	Ala	Lys	Glu	Ala	Met	Ala	Asn	Ile	Gly
385					390					395					400

Gly Gly Leu Gly Thr Ser Ile Ser Phe Ala Arg Ser Ala Gly Gln Gln
 405 410 415
 Val Ala Met Asp Ile Thr Arg Gly Leu Met Gln Gly Gly Ser Gln Tyr
 420 425 430
 Leu Ala Lys Lys Phe Arg Thr Val Lys Val His Leu Lys Ala Gly Tyr
 435 440 445
 Glu Leu Met Leu Tyr Ala Lys Gln Gln
 450 455

<210> 10124
 <211> 240
 <212> PRT
 <213> B.fragilis

<400> 10124
 Arg Ala Ala Arg Cys Arg Ser Arg His Thr Ser Thr Thr Cys Trp His
 1 5 10 15
 Ser Thr Ser Ser Asn Thr Gly Arg Arg Ser Arg Arg His Thr Pro Gly
 20 25 30
 Asn Trp Arg Thr Ser Phe Lys Lys Glu Gly Gly Asn Gly Met Ile Leu
 35 40 45
 Lys Leu Ser Leu Thr Val Leu Leu Tyr Tyr Leu Ala Val Leu Trp
 50 55 60
 Lys Tyr Tyr Arg Gln Asp Ile Ala Gly Ile Phe Gly Thr Ala Glu Thr
 65 70 75 80
 Asp Glu Asp Thr Asp Gly Thr Gly Lys Glu Pro Gly Gln Pro Gly Glu
 85 90 95
 Pro Tyr Thr Val Met Gly Glu Ser Thr Tyr Leu Pro Phe Gly Ala Glu
 100 105 110
 Asp Gly Glu Glu Ala Val Ala Gly Ala Val Asp Glu Leu Ala Ala Glu
 115 120 125
 Asp Asp Gly Ala Asp Tyr Ser Asp Ile Glu Pro Glu Glu Asp Glu Glu
 130 135 140
 Glu Thr Asp Tyr Glu Pro Thr Pro Glu Glu Ile Arg Glu Leu Glu Glu
 145 150 155 160
 Glu Glu Glu Leu Gly Ala Tyr Tyr Pro Asp Gly Asn Pro Asp Phe Ala
 165 170 175
 Thr Gly Tyr Ser Phe Asp Asp Leu Lys Lys Val Arg Arg Val Leu Val
 180 185 190
 Ser Asp Asn Ala Asp Glu Lys Ala Glu Arg Glu Ala Arg Glu Val Leu
 195 200 205
 Pro Ser Val Met Gly Ser Asp Ile Trp Glu Ala Met Leu Asp Glu Phe
 210 215 220
 Glu Gly Ala Arg Lys Arg Val Ala Arg Leu Met Asp Asn His Asn Val
 225 230 235 240

<210> 10125
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 10125
 Ala Met Lys Arg Leu Leu Phe Ile Ile Leu Leu Phe Gly Val Cys Leu
 1 5 10 15
 His Val Asn Arg Ala His Ala Gln Arg Cys Leu Pro Gly Met Arg Gly
 20 25 30
 Ile Gln Leu Thr Gly Gly Leu Ser Asp Asn Met Arg Trp Lys Asn Gly
 35 40 45
 Asp Gly Phe Gly Tyr His Ala Gly Ile Ala Val Ser Thr Tyr Thr Lys

Ile Tyr Ala Ile Gly Ala Val Val Gly Leu Ile Gly Gly Val Lys Val
 50 55 60
 Tyr Gly Lys Phe Ser Ser Gly Asp Pro Asp Thr Ser Lys Thr Ala Ala
 65 70 75 80
 Ser Trp Phe Gly Ala Cys Ile Phe Leu Ile Val Ala Ala Thr Ile Leu
 85 90 95
 Arg Ser Phe Phe Leu
 100

<210> 10128
 <211> 251
 <212> PRT
 <213> B.fragilis

<400> 10128
 Arg Asn Pro Arg Asn Asn Arg Asn Pro Lys Arg Leu Gln Pro Lys Asp
 1 5 10 15
 Lys Gly Gln Gly Gly Glu Ile Arg Pro Leu Leu Ser Phe Val Ser Arg
 20 25 30
 Ser Gly Lys Glu Arg Ser Gln Arg Asn Arg Phe Leu Asn Phe Gln Ile
 35 40 45
 Phe Lys Leu Met Arg Thr Val Gln Arg Thr Tyr Thr Leu Phe Gly Ile
 50 55 60
 Ala Glu Leu Glu Asp Glu Ala Arg Gln Lys Ala Tyr Thr Asp Trp Leu
 65 70 75 80
 Ala Lys Gly Asn Asp Tyr Pro Tyr Ala Ser Glu Asn Cys Asp Thr Leu
 85 90 95
 Glu Ala Phe Cys Asn Leu Phe Arg Ile Ala Cys Thr Asn Tyr Cys Tyr
 100 105 110
 Asp Ser Cys Thr Tyr Ala Tyr Arg Phe His Thr Gly His Glu Glu Glu
 115 120 125
 Thr Glu Arg Leu Ser Ser Val Arg Leu Leu Ala Tyr Leu Tyr Asn Asn
 130 135 140
 Phe His Ala Glu Leu Tyr Lys Pro Lys Val Tyr Trp Thr Lys Asp Arg
 145 150 155 160
 Lys Lys Arg Arg Arg Ser Arg Ile Ser Val Thr Cys Glu Cys Pro Phe
 165 170 175
 Thr Gly Val Val Ser Asp Glu Ile Ile Leu Gln Pro Leu Met Asp Phe
 180 185 190
 Met Arg Ser Pro Asp Thr Arg Asn Phe Lys Glu Leu Met Arg Asp Cys
 195 200 205
 Leu Glu Asn Phe Phe Arg Ser Cys Arg Asp Asp Cys Glu Tyr Cys Glu
 210 215 220
 Ser Glu Glu Tyr Phe Thr Asp Glu Ser His Lys Asn Asn Trp Glu Tyr
 225 230 235 240
 Leu Ile Asp Gly Thr Leu Phe Ile Glu Thr Ala
 245 250

<210> 10129
 <211> 110
 <212> PRT
 <213> B.fragilis

<400> 10129
 Trp Arg Thr Ser Asp Met Glu Val Ile Thr Lys Asp Thr Glu Glu Val
 1 5 10 15
 Arg Ala Tyr Phe Glu Ala Leu Glu Glu Gly Met Arg Tyr Ile Asp Thr
 20 25 30
 Val Thr Ala His Phe Arg Pro Ala Met Asn Gly Glu Val Tyr Phe Thr

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<210> 10130
<211> 407
<212> PRT
<213> B.fragilis
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Thr 1	Arg	Arg	Arg	Cys 5	Ala	Ser	Ala	Thr 10	Ser	Ser	Ala	Cys	Thr 15	Pro
Ser	Arg	Thr	Arg	Lys 20	Thr	Cys	Arg	Ala 25	Arg	Trp	Arg	Arg	Thr 30	Val
Thr	Ser	Gly 35	Ser	Arg	Pro	Thr	Ala 40	Arg	Thr	Ala	Gly	Cys 45	Arg	Ser Ala
Gly 50	Pro	Gly	Gly	Leu	Ala	Ala 55	Gly	Leu	Gln	Pro	Leu	Leu	Gln	Pro Val
His 65	Leu	His	Arg	Arg	Pro 70	Arg	Gly	Glu	Pro	Glu 75	Thr	Leu	Arg	Ala Asp 80
Arg	Pro	Glu	His	Ala 85	Leu	Ala	Leu	Pro	Leu 90	Leu	Pro	Leu	Gln	Pro Asp 95
Gln	Gln	Gly	Leu 100	Asp	Arg	Gly	Ile	Pro 105	Glu	Arg	Gly	Ala	Leu	Glu Arg
Ala	Asp	Leu 115	Gly	Ala	Leu	Pro	Leu 120	Gln	Arg	Asp	Gly	Met 125	Glu	Arg Arg
Gln	Gly 130	Gly	Thr	Gln	Ala	His 135	Gln	Glu	Arg	Gly	Gly	Gln	Pro	Ala Arg
Pro 145	Asp	Gly	Val	Gln	Ala 150	Glu	Ala	Gln	His	Gly 155	Gly	Arg	Ala	His Ala 160
Leu	Leu	Gly	Gly	Asp 165	Thr	Gly	Gln	Arg	Gly 170	Gly	Leu	Pro	Leu	Arg Gly 175
Glu	Leu	Leu	His 180	Val	His	Pro	Ala 185	Ser	Pro	Val	Leu	Leu	His 190	Arg Arg
Asp	Glu 195	Leu	Gln	Gly	Leu	Ala	Leu 200	Thr	Leu	Arg	His	Gln 205	Asp	Gly Gly
Gln	Asp 210	Asp	Gly	Gln	Thr	Ala 215	Ala	Ser	Gly	His	Gln	Arg	Pro	Ala Asp
Glu 225	Glu	Arg	Gly	Asp	Leu 230	Glu	Pro	Gln	Gln	Val 235	Cys	Pro	Arg	Ser Glu 240
Arg	Lys	Arg	Gln	Val 245	Val	Leu	His	Glu	Pro	Pro	Arg	Ala	Pro	Val Leu 255
Arg	Ala	Glu	Gln 260	Pro	His	Arg	Ala 265	Asp	Arg	His	Gly	Gln	Leu	Val Pro 270
Arg	Ala 275	Val	Arg	Ala	Asp	Thr	Pro 280	Gln	Asp	Gln	Gly	Arg	Gly	Arg Asp
Leu	Leu 290	His	Val	His	Gly	Gly	Glu 295	Ala	His	Gln	Leu	Gln	Pro	Leu Leu
His 305	Gly	Arg	Leu	Gln	Val 310	Gln	Arg	Gly	Glu	Glu 315	Gly	Gln	His	Gln Asp 320
Val	Ala	Ala	Gly	Ala 325	Val	Glu	Gly	Arg	Gly 330	Arg	Glu	Asn	His	Glu Asp 335
Gly	Glu	Arg	Arg	Ala	Gly	Gln	Cys	Gly	Val	Gly	Val	His	Pro	Pro Asp

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          340          345          350
Thr Ala Glu Pro Gly His Arg Pro Leu Val Arg His Leu Leu Arg Val
          355          360          365
His Ala Glu Arg Leu Pro Glu Gly Ala Gly Cys Lys Gly His Gln Gly
          370          375          380
Glu Pro Glu Gly Leu Gln His Arg Gln Leu Pro Asp His Thr Gln Ala
385          390          395          400
Val Leu Gln Gly Arg Thr Leu
          405

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<210> 10131
 <211> 134
 <212> PRT
 <213> B.fragilis

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<400> 10131
Ala Cys Ser Gly Thr Arg His Arg Pro Arg Gly Arg Thr Leu Ser Asp
1          5          10          15
Gln Gly Trp Lys Gly Arg Ser Gly Arg Thr Ser Val Ser Cys Arg Ser
          20          25          30
Pro Ala Gln Pro Thr Gly Thr Ala Val Arg Ala Val Leu Gly Thr Thr
          35          40          45
Ala Gly Cys Ser Ala Ser Cys Cys Ile Pro Ser Gly Arg Cys Thr Ser
50          55          60
Pro Pro Ser Ser Ser Ser Pro Trp Ala Thr Ser Pro Ala Arg Arg Ala
65          70          75          80
Ser Cys Arg Ser Pro Pro Cys Ser Pro Asp Met Pro Ser Pro Gly His
          85          90          95
Gly Gly Thr Pro Pro Ser Pro Ala Ser Pro Ser Ala Pro Gly Ile Gly
          100          105          110
Ser Cys Arg Arg Ser Val Ile Arg Ala Ser Arg Gly Ser Pro Ser Pro
          115          120          125
Arg Ala Arg Ala Pro Cys
          130

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<210> 10132
 <211> 476
 <212> PRT
 <213> B.fragilis

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<400> 10132
Arg Cys Thr Gly Cys Ser Ser Gly Cys Ser Pro Ala Ala Ser Pro Pro
1          5          10          15
Gly Pro Ala Glu Arg Gln Pro Ala Val Arg Ala Val Gly Arg Glu Pro
          20          25          30
Leu Val Thr Ala Val Arg Arg His Leu Ala Arg Gln Val Phe Arg Val
          35          40          45
Arg Glu Gly Val Gln Ala Glu Asp Val Val Ala Asp Ala His Leu Leu
50          55          60
Arg Val Gln Leu Asp Val Leu Gln His Arg Arg Val Val Leu Arg Glu
65          70          75          80
Arg Glu Val Leu Leu His Asp Ala Arg Arg Phe Arg Pro Ser Asp
          85          90          95
Leu Val Arg Arg Glu Ala Ala Gln Arg Asn Lys Thr Ala Val Val His
          100          105          110
Asp Leu Leu Glu Leu Pro Asp Gly Phe Glu Glu Pro Arg Asn Arg Leu
          115          120          125
Pro Val Leu Tyr Leu Leu Gly Asp Lys Pro Ala Leu Ala Glu Gly Gly
          130          135          140

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Glu Arg Ala Phe Leu Thr Ala Pro His Leu Arg Gly Leu Cys Gln Glu
 145 150 155 160
 Gln Val Ala Gly Val Arg Glu Glu Arg Ala Phe Val Glu Val Pro Leu
 165 170 175
 Lys Ala Pro Ala Gln Glu Ala Gln Val Val Pro Val Arg Phe Arg Pro
 180 185 190
 Val Leu Leu Leu Asp Glu Glu Val Leu Leu Val Tyr Asp Gly Ile Leu
 195 200 205
 Arg Gln His Leu His Arg Leu Val Pro Ser Arg Val Asp Arg Leu Val
 210 215 220
 Leu Ala Pro Cys Asn Gly Glu Gln Phe Arg Lys Phe His Pro Glu Gly
 225 230 235 240
 Asp Arg His Val Arg Leu Leu Ala His Asp Ala Ala Val Leu His Arg
 245 250 255
 Gln Gln Arg Glu Leu Ala Phe Glu Arg Arg Arg Phe His Tyr Val Phe
 260 265 270
 His Ser Cys Gln Cys Leu Lys Ile Asn Asn Arg Gly Ile Phe Ser Arg
 275 280 285
 Phe Thr Thr Tyr Leu Gly Cys Leu Leu Arg Ala Ala Phe Ile Ser
 290 295 300
 Pro Cys Val Pro Tyr Arg Ala Phe Ser Arg Lys Val Ser His Thr Ser
 305 310 315 320
 Ser Val Ala Ala Ala Thr Pro Lys Pro Met His Thr His Trp Phe Thr
 325 330 335
 Pro Ala Met Tyr Arg Met Thr Asn Thr Thr Lys Thr Ala Ser Arg Pro
 340 345 350
 Pro Gln Lys Met Lys Arg Tyr Trp Leu Ser Ser Pro Leu Asn Ser Thr
 355 360 365
 Phe Leu Pro Ile Pro Leu Leu Ile Ser Met Ser Ile Val Ala Val Leu
 370 375 380
 Gln Glu Glu Arg Thr Gln Asp Ser Gly Ser Tyr Tyr Gln Glu Asp Ala
 385 390 395 400
 Gly Ser Glu Pro Ala Arg Arg Arg Leu Arg Arg Val Gly Val Ala Gly
 405 410 415
 Ala Glu Leu Pro Ile Tyr Phe His Pro Ser Asp Gln Ala Asp His Arg
 420 425 430
 Thr Asp Gly Val Asn Gln Phe Arg Pro Arg Phe Lys Ile Arg Gly Asp
 435 440 445
 His Leu Arg Gly Phe Gly Asp Thr Arg Leu Pro Val Ser Leu Arg His
 450 455 460
 Cys Ala His Gly Ser Glu Tyr Ala Gly Arg Arg Glu
 465 470 475

<210> 10133

<211> 286

<212> PRT

<213> B.fragilis

<400> 10133

Gly Asp Ala Gly Phe Leu His Ala Pro Asp His Phe Pro Leu Ala Val
 1 5 10 15
 Pro Cys His Arg His Glu Leu Gln Pro Met Arg Ala Cys Ala Gln Ile
 20 25 30
 Gln Phe Leu Gly Glu Glu Ser Pro Arg Phe Pro Leu Gln Ala Gly Ala
 35 40 45
 Ala His Pro Arg Thr Gly Arg Val Lys Gln Ala Asp Phe Arg Thr Gly
 50 55 60
 Gly Gly Val Pro Glu Gln Ile Pro Arg Pro Met Ile Ala Lys Ile Ser
 65 70 75 80

His Gly Ser Ser Leu Tyr Gly Val Leu Ala Tyr Asn Gln Leu Lys Val
 85 90 95
 Asp Glu Arg His Ala Asp Val Leu Phe Thr Ser Arg Ile Ile Glu Pro
 100 105 110
 Gln Gly Asp Asn Pro Tyr Thr Ile Gly His Leu Ser Arg Ser Phe Gly
 115 120 125
 Asp Tyr Leu Thr Ala Asn Arg Lys Thr Glu Lys Pro Val Leu His Ile
 130 135 140
 Ser Leu Asn Pro Asp Pro Lys Asp Cys Leu Ser Glu Glu Arg Phe Val
 145 150 155 160
 Ser Leu Ala Glu Glu Tyr Met Arg Arg Met Gly Phe Gly Asp Gln Pro
 165 170 175
 Tyr Ile Val Tyr Arg His Asn Asp Ile Gly Arg Glu His Leu His Ile
 180 185 190
 Val Ser Val Arg Val Asp Glu Thr Gly Arg Ala Ile Ser Asp Ser Tyr
 195 200 205
 Glu His Gly Ser Ser Met Lys Val Cys Arg Glu Leu Glu Arg Gln Phe
 210 215 220
 Gly Leu Val Pro Ala Thr Pro Lys Gln Trp Lys Glu Gly Leu Pro Leu
 225 230 235 240
 Ser Pro Val Gly Tyr Gly Asp Asp Asn Leu Lys Gly Gln Leu Ala Gly
 245 250 255
 Val Ile Arg Pro Leu Ala Arg Glu Trp Arg Phe Arg Thr Leu Gly Glu
 260 265 270
 Tyr Arg Ala Val Leu Ser Leu Thr Ala Ser Arg Trp Thr Arg
 275 280 285

<210> 10134

<211> 65

<212> PRT

<213> B.fragilis

<400> 10134

Ile Met Glu Gly Lys Lys Phe Lys His Lys Tyr Leu Pro Tyr Leu Thr
 1 5 10 15
 Cys Val Val Val Ala Ala Thr Arg Lys Gly Tyr Lys Val Leu Glu Thr
 20 25 30
 Gln Val Leu Gly Gly Arg Arg Lys Pro Lys Thr Lys Thr Ala Tyr Tyr
 35 40 45
 Tyr Asp Ile Asp Phe Asp Lys Glu Arg Gly Leu Trp Gln Glu Glu Gly
 50 55 60

Lys

65

<210> 10135

<211> 69

<212> PRT

<213> B.fragilis

<400> 10135

Trp Gly Thr Gly Gln Ile Ser Ser Pro Ala Cys Pro Leu Ser Lys Pro
 1 5 10 15
 Ser Leu Ser Lys Thr Asp Trp Asn Ser Tyr Phe Thr Phe Ala Val Ile
 20 25 30
 Ser Ser Ile Arg Phe Val Ile Phe Ser Met Glu Tyr Phe Ser Ile Asn
 35 40 45
 Leu Leu Phe Ala Ala Ser Ala Phe Ser Leu Ser Leu Ile Asn Phe Ser
 50 55 60
 Cys Gly Lys Ser Asp

65

<210> 10136

<211> 684

<212> PRT

<213> B.fragilis

<400> 10136

Gly Leu Gln Gly Lys Ala His Ser Ile Ala Arg Thr Cys Ser Gly Lys
 1 5 10 15
 Pro Asp Pro Lys Gly Asn Ala Pro Thr Ile Ile Trp Lys His Glu Leu
 20 25 30
 Thr Val Ile Thr Tyr Phe Leu Lys Val Ile Arg Ile Met Pro Leu Phe
 35 40 45
 Arg Asn Phe Glu Thr Ser Asn Glu His Gly Tyr Asp Arg Asn Ile Leu
 50 55 60
 Thr Phe Leu Asn Glu Tyr Ala Glu Ile Ser Asp Pro Gln Tyr Ala Ile
 65 70 75 80
 Met Leu Arg Gly Ala Trp Gly Cys Gly Lys Thr Phe Phe Ile Arg Gln
 85 90 95
 Trp Ile Lys Gln Leu Lys Asn Asp Lys Asp Ala Asp Lys Leu Lys Trp
 100 105 110
 Arg Pro Ile Tyr Val Ser Leu Tyr Gly Leu Thr Thr Thr Gln Gln Ile
 115 120 125
 Thr Glu Gln Val Asn Lys Glu Ile Ser Pro Trp Leu Tyr Ser Lys Gly
 130 135 140
 Met Lys Leu Ala Lys Asn Ile Leu Lys Ala Ala Ser Lys Ile Ala Leu
 145 150 155 160
 Lys Tyr Asp Ile Asp Gly Asp Gly Lys Asp Glu Gly Ser Val Thr Cys
 165 170 175
 Asp Leu Asp Ser Ile Leu Leu Leu Lys Glu Glu Asn Ser Glu Ile Lys
 180 185 190
 Gly Asn Lys Ile Leu Ile Phe Asp Asp Leu Glu Arg Cys Asp Val Lys
 195 200 205
 Leu Glu Thr Leu Leu Gly Tyr Ile Asn Tyr Phe Ser Glu His Cys Lys
 210 215 220
 Cys Lys Val Ile Ile Ile Gly Asp Glu Asn Lys Ile Ser Glu Lys Glu
 225 230 235 240
 Asp Asp Lys Cys Lys Leu Lys Phe Lys Asp Phe Lys Glu Lys Thr Ile
 245 250 255
 Gly Arg Thr Phe Glu Ile Lys Leu Asn Ile Gly Glu Thr Leu Asp Phe
 260 265 270
 Phe Ile Gly Glu Ile Ser Thr Asn Asn Arg Asn Leu Leu Ser Glu Asn
 275 280 285
 Lys Glu Leu Ile Ile Lys Ile Phe His Ala Ser Lys Phe Asp Asn Leu
 290 295 300
 Arg Val Leu Arg Gln Cys Leu Asn Asp Tyr His Arg Ile Ala Met Ala
 305 310 315 320
 Leu Pro Glu His Tyr His Lys Ser Pro Lys Tyr Lys Leu Val Ile Thr
 325 330 335
 Ser Leu Leu Ala Asn Phe Val Ala Val Tyr Cys Glu Tyr Lys Gly Gly
 340 345 350
 Asn Thr Arg Ile Gly Ser Leu Phe Asn Ser Leu Tyr Asp Met Phe Pro
 355 360 365
 Asp Lys Glu Lys Asp Glu Glu Arg Glu Lys Ile Leu Ser Lys Tyr Arg
 370 375 380
 Phe Ile Glu Ile Gly Lys Gln Leu Asp Ile Phe Asp Arg Phe Ile Val
 385 390 395 400
 Asn Glu Ile Val Cys Tyr Leu Glu Ser Gly Tyr Phe Asp Thr Thr Tyr

130

<210> 10138
 <211> 168
 <212> PRT
 <213> B.fragilis

<400> 10138
 Ser Pro Phe Phe Pro Arg Ala Pro Lys Gln Lys Ile Asn Val Ser Leu
 1 5 10 15
 Leu Ile Phe Cys Ile Met Asn Thr Leu Ser Phe Pro Gln Ile Thr Val
 20 25 30
 Ser Tyr Lys Asp Ala Asp Ala Ser Lys Arg Val Arg Ile His Ser Ser
 35 40 45
 Lys Glu Ser Tyr Asp Ile Leu Lys Thr Phe Tyr Glu Asp Cys Met Gln
 50 55 60
 His His Glu Glu Cys Trp Ala Met Tyr Leu Asn Gly Ala Gly Arg Leu
 65 70 75 80
 Leu Gly Val Ser Cys Val Ser Arg Ser Gly Met Asn Ser Thr Val Val
 85 90 95
 Asp Ile Arg Ile Val Leu Gln Thr Ala Leu Val Ser His Ala Ser Gly
 100 105 110
 Ile Ile Leu Ser His Asn His Pro Ser Gly Ser Thr Val Ala Ser Thr
 115 120 125
 Pro Asp Asn Asn Leu Thr Ser Gln Leu Lys Lys Gly Cys Glu Ala Ile
 130 135 140
 Gly Ile Gln Leu Leu Asp His Ile Ile Leu Thr Glu Asp Ala Tyr Leu
 145 150 155 160
 Ser Tyr Met Asp Glu Gly Met Leu
 165

<210> 10139
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 10139
 Tyr Arg Thr Met Leu Leu Ala Ile Asp Phe Thr Asn Leu His Glu Ile
 1 5 10 15
 Leu Gln Val Leu Tyr Gln Asp Met Met Pro Leu Cys Glu Lys Leu Thr
 20 25 30
 Gly Val Ala Lys Gly Ile Ala Gly Leu Gly Ala Leu Phe Tyr Val Ala
 35 40 45
 Ala Lys Val Trp Gln Ala Leu Ala Arg Ala Glu Pro Ile Asp Val Tyr
 50 55 60
 Pro Leu Leu Arg Pro Phe Ala Ile Gly Leu Cys Ile Leu Phe Phe Pro
 65 70 75 80
 Thr Phe Val Ile Gly Thr Ile Asn Thr Val Leu Ser Pro Val Val Lys
 85 90 95
 Gly Cys His Gly Met Leu Glu Ser Gln Thr Phe Asp Met Asn Arg Tyr
 100 105 110
 Arg Glu Gln Lys Glu Thr Leu Glu Arg Glu Ala Phe Arg Arg Asp Pro
 115 120 125
 Glu Lys Ala Tyr Leu Ala Ser Lys Glu Asp Phe Asp Lys Lys Leu Asp
 130 135 140
 Glu Leu Gly Trp Ser Pro Lys Asp Leu Lys Thr Met Ala Val Met Tyr
 145 150 155 160
 Ile Asp Arg Thr Glu Tyr Asn Met Lys Arg Asn Ile Arg Leu Trp Phe
 165 170 175

Gln Glu Leu Leu Glu Leu Leu Phe Gln Ser Ala Ala Leu Val Ile Asp
 180 185 190
 Thr Ile Arg Thr Phe Phe Leu Ile Ala Leu Ser Ile Leu Gly Pro Ile
 195 200 205
 Ala Phe Ala Leu Ser Val Tyr Asp Gly Phe Gln Ser Thr Leu Thr Gln
 210 215 220
 Trp Ile Thr Arg Tyr Ile Ser Ile Tyr Met Trp Leu Pro Val Ser Asp
 225 230 235 240
 Leu Phe Ser Ser Val Leu Ala Arg Ile Gln Val Leu Met Leu Thr Arg
 245 250 255
 Asp Ile Glu Ala Met Ser Asp Pro Thr Phe Ile Pro Asp Ser Ser Asn
 260 265 270
 Thr Val Tyr Ile Ile Phe Leu Ile Ile Gly Ile Phe Gly Tyr Phe Thr
 275 280 285
 Ile Pro Thr Val Ala Asn Trp Ile Ile Met Ala Gly Gly Val Ser Gln
 290 295 300
 Ala Asn Arg Ala Met Asn Gln Thr Ala Asn Lys Val Gly Asn Val Ala
 305 310 315 320
 Ala Ala Gly Ala Gly Ala Ala Val Gly Asn Ile Ala Gly Lys Ile Ile
 325 330 335
 Lys

<210> 10140
 <211> 442
 <212> PRT
 <213> B.fragilis

<400> 10140
 Leu Thr Thr Phe Arg Asn Glu Asn Phe Arg Val Met Lys Thr Lys Arg
 1 5 10 15
 Ser Thr Phe Ala Thr Ser Phe Tyr Ile Lys Arg Ser Ala Val Arg Asn
 20 25 30
 Arg Asp Gly Lys Ala Pro Ile Met Val Lys Ile Ser Ile Asp Gly Asp
 35 40 45
 Asp Lys Val Leu Gly Thr Lys Leu Phe Val Thr Pro Asp Leu Trp Glu
 50 55 60
 Asn Gly Lys Ala Lys Gly Lys Ser Ala Glu Ala Thr Glu Ile Asn Gly
 65 70 75 80
 Gln Leu Lys Glu Val Ser Ala Arg Leu Thr Asn His Tyr His Arg Ile
 85 90 95
 Leu Arg Glu Glu Asp Phe Val Thr Ala Glu Lys Leu Arg Asn Ala Phe
 100 105 110
 Leu Gly Ile Gly Val Met Glu Asn Cys Ile Leu Lys Asp Phe Glu Asn
 115 120 125
 Met Asn Arg Glu Phe Glu Ala Met Val Glu Lys Gly Gln Arg Ala Lys
 130 135 140
 Ser Thr Tyr Asn Lys Tyr Leu Ala Val Tyr Asn His Phe Ala Thr Phe
 145 150 155 160
 Leu Trp Glu Lys Lys Lys Arg Thr Asp Met Ala Tyr Lys Glu Leu Thr
 165 170 175
 Lys Glu Ile Ile Thr Asp Phe Asp Lys Tyr Leu Arg Val Glu Lys Gly
 180 185 190
 Leu Ser Asp Asn Thr Leu Trp Ile Tyr Thr Met Pro Leu Leu Ser Leu
 195 200 205
 Thr Asp Lys Ala Trp Arg Arg Gly Ile Val Arg Ser Asp Pro Phe Gly
 210 215 220
 Glu Tyr Ser Leu Glu Met Gln Glu Thr Asp Arg Gly Tyr Leu Thr Glu
 225 230 235 240

Glu Glu Leu Arg Thr Leu Ala Asn Ala Val Phe Val Lys Lys Gln Thr
 245 250 255
 Asn Leu Val Arg Asp Met Phe Leu Phe Gly Cys Phe Thr Gly Leu Ser
 260 265 270
 Tyr Ile Asp Ile Lys Thr Leu Thr His Asp Lys Ile Gln Arg Met Asp
 275 280 285
 Phe Asp Gly Glu Asp Trp Ile Ile Thr Arg Arg Thr Lys Thr Arg Val
 290 295 300
 Ser Ser Asn Val Pro Leu Met Glu Ile Ala Lys Glu Leu Ile Glu Arg
 305 310 315 320
 Tyr Lys Gly Leu Ala Gly Gly Asp Phe Val Phe Pro Met Pro Ser Asn
 325 330 335
 Gly Thr Cys Asn Lys His Leu Lys Gln Ile Ala Lys Ala Cys Gly Ile
 340 345 350
 Ser Lys Glu Ile Gly Phe His Leu Ser Arg His Thr Phe Ala Thr Thr
 355 360 365
 Val Tyr Leu Cys Asn Gly Gly Thr Ile Glu Ala Leu Ser Lys Ile Leu
 370 375 380
 Gly His Lys His Ile Ser Thr Thr Gln Ile Tyr Ala Glu Val Thr Asn
 385 390 395 400
 Lys Met Val Ser Ser Asp Phe Arg Ala Ile Ser Gly Asn Leu Ala Ala
 405 410 415
 Met Gln Arg Ser Val Leu Glu Lys Arg Asp Arg Lys Gln Gly Arg Lys
 420 425 430
 Lys Val His Arg Ser Leu Arg Glu Thr Ala
 435 440

<210> 10141

<211> 104

<212> PRT

<213> B.fragilis

<400> 10141

Ile Phe Asp Leu Met Glu Glu Gln Thr Gln Glu Lys Ala Thr Ala Asn
 1 5 10 15
 Ala Ala Arg Asp Gly Gly Gly Cys Pro Asn Pro Gly Asp Gly Glu Arg
 20 25 30
 Lys Glu Gly Gly Gln Gly Arg Arg Glu Lys Gly Glu Glu Asp Ser Gln
 35 40 45
 Ala Ala His Ala Glu Thr Val Ala Ala Thr Glu Glu Ala Asp Gly Ile
 50 55 60
 Ser Ala Asp Gly Leu Ala Val Pro Arg Leu Asp Val Ala Asp Ile Arg
 65 70 75 80
 Thr Phe Gly Gly Ala Gly Arg Glu Pro Gly His Arg Gly Gly Val Gln
 85 90 95
 Arg Arg His Pro Pro Ala Gly Glu
 100

<210> 10142

<211> 112

<212> PRT

<213> B.fragilis

<400> 10142

Ile His Ile Phe Ala Gly Lys Tyr Asn Glu Lys Cys Ile Arg Thr Met
 1 5 10 15
 Glu Ile Val Ser Ile Glu Lys Lys Thr Phe Glu Glu Met Lys Glu Arg
 20 25 30
 Phe Gly Cys Phe Ser Arg His Val Lys Glu Leu Cys Ala Arg Tyr Arg

<210> 10144
 <211> 309
 <212> PRT
 <213> B.fragilis

<400> 10144

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Arg His Asn Ile Gln Leu Val Pro Tyr Lys Lys Gly Asp Phe Pro Glu
1          5          10          15
Ala Leu Met Glu Met Ser Tyr Ile Gly Thr Asn Gln Leu Lys Phe Thr
20          25          30
Val Thr Asp Arg Arg Ile Pro Ser Gly Ile Arg Met Lys Pro Asn Ile
35          40          45
His Ile Phe Gly Gly Leu Ala Asn Gln Pro Gly Asn Thr Ile Ile Glu
50          55          60
Ser Arg Phe Val Ala Cys Asp Ala Asp Arg Ala Ile Arg Lys Tyr Ser
65          70          75          80
Asn Asp Ala Trp Val Ala Ala Tyr Phe Gly Leu His Thr Glu Gln Leu
85          90          95
Glu Asp Phe Gln Gly Tyr Ser Ala Gly Tyr Lys Tyr Tyr Thr Phe Gln
100         105         110
Asp Glu Arg Ser Tyr Gly Ala Phe Gln Thr Asn Asp Pro Leu Ser Arg
115         120         125
Arg Pro Thr Glu Gly Phe Tyr Lys Leu Gly Asp Met Tyr Asn Arg Asp
130         135         140
Thr Tyr Leu Gln Pro Phe Leu Asp His Gly Glu Lys Ile Ile Leu Arg
145         150         155         160
Gln Val Asp Met Tyr Val Asn Gly Arg Ser Thr Phe Val Ala Ala Asp
165         170         175
Asp Ser Pro Tyr Lys Tyr Asp Leu Asp Gly Asp Gly Val Leu Glu Ser
180         185         190
Tyr Glu Cys Glu Leu Asp Pro Ala Thr Gly Leu Pro Val His Glu Ala
195         200         205
Asp Tyr Thr Lys Tyr Lys Gly Phe Gln Gly Asp Val Tyr Leu Ser Phe
210         215         220
Ile Glu Met Gly Thr Asp Glu Tyr Glu Pro Trp Asn Thr Gly Val Ser
225         230         235         240
Leu Gly Ser Val Tyr Thr Thr Gly Gly Ile Gln Lys Thr Tyr Lys Tyr
245         250         255
Ile Tyr Thr Gly Ala Gly Asp Phe Thr Ile Thr Ala Val Ala Thr Asn
260         265         270
Val Gly Asp Lys Asp Tyr Lys Gly Ile Asp Tyr Ser Glu Glu Arg Ser
275         280         285
Asn Ser Leu Asp Asp Tyr Ser His Lys Arg Ala Leu Ser Ser Val Lys
290         295         300
Val Ser Val Lys Pro
305

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<210> 10145
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 10145

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Glu Ala Val Phe Ser Ile Pro Val Asp Thr Thr Phe Met Arg Leu Arg
1          5          10          15
Gln Trp Glu Trp Tyr Cys Gln Lys Arg Ala Asp Ser Cys Leu Thr Glu
20          25          30
Asn Asn Tyr Gln Gly Ala Leu Ser Trp Leu Asp Ser Ala Arg Ile Gln
35          40          45

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Val Glu His Tyr Gly Arg Pro Tyr Tyr Ile Leu Ala Arg Gly Asp Val
  50          55          60
Tyr Tyr Ser Ile His Gln Tyr Asp Ser Ala Arg Arg Tyr Phe Ser Met
  65          70          75          80
Ala Val His Ser Ile His Pro His Ile Ala Ile Glu Ala Trp Arg Lys
          85          90          95
Leu Ala Glu Leu Glu Leu Met Glu Gly Asn Glu Lys Gln Gly Phe Tyr
          100          105          110
Ser Thr Gln Lys Ala Asp Ala Leu Phe Arg Val Glu Ile Gly His Val
          115          120          125
Gln Ser Asp Asn Ser Glu Ala Leu Tyr Gln Glu Glu Arg Leu Lys Asn
          130          135          140
Glu Leu Asn Gln Leu Lys Ile Ala Lys Gln Asn Arg Glu Ile Ala Met
          145          150          155          160
Ser Ser Pro Arg Gly Trp Lys Asp Pro Arg Trp Arg Ser Pro
          165          170

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<210> 10146

<211> 425

<212> PRT

<213> B.fragilis

<400> 10146

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Ala Leu Phe Phe His Tyr Tyr Thr Lys Tyr Met Leu Phe Ile Pro Arg
  1          5          10          15
Lys Ile Val Ser Phe Ala Lys Glu Thr Lys Thr Pro Asn Thr Met Tyr
          20          25          30
Gly Lys Met Lys Glu His Leu Ser Asn Thr Ile Ala Glu Ile Lys Glu
          35          40          45
Ala Gly Leu Tyr Lys Glu Glu Arg Leu Ile Glu Ser Ala Gln Gln Ala
          50          55          60
Ala Ile Thr Val Lys Gly Lys Glu Val Leu Asn Phe Cys Ala Asn Asn
          65          70          75          80
Tyr Leu Gly Leu Ser Asn His Pro Arg Leu Ile Glu Gly Ala Lys Lys
          85          90          95
Met Met Asp Arg Arg Gly Tyr Gly Met Ser Ser Val Arg Phe Ile Cys
          100          105          110
Gly Thr Gln Asp Ile His Lys Glu Leu Glu Ala Ala Ile Ser Asp Tyr
          115          120          125
Phe Lys Thr Glu Asp Thr Ile Leu Tyr Ala Ala Cys Phe Asp Ala Asn
          130          135          140
Gly Gly Val Phe Glu Pro Leu Phe Thr Asp Glu Asp Ala Ile Ile Ser
          145          150          155          160
Asp Ser Leu Asn His Ala Ser Ile Ile Asp Gly Val Arg Leu Cys Lys
          165          170          175
Ala Lys Arg Tyr Arg Tyr Ala Asn Ala Asp Met Ala Asp Leu Glu Arg
          180          185          190
Cys Leu Gln Glu Ala Gln Ala Gln Arg Phe Arg Ile Ile Val Thr Asp
          195          200          205
Gly Val Phe Ser Met Asp Gly Asn Val Ala Pro Met Asp Lys Ile Cys
          210          215          220
Asp Leu Ala Glu Lys Tyr Asp Ala Leu Val Met Val Asp Glu Ser His
          225          230          235          240
Ser Ala Gly Val Val Gly Ala Thr Gly His Gly Val Ser Glu Gln Tyr
          245          250          255
Asn Thr Tyr Gly Arg Val Asp Ile Tyr Thr Gly Thr Leu Gly Lys Ala
          260          265          270
Phe Gly Gly Ala Leu Gly Gly Phe Thr Thr Gly Arg Lys Glu Ile Ile
          275          280          285

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Asp Leu Leu Arg Gln Arg Ser Arg Pro Tyr Leu Phe Ser Asn Ser Leu
 290 295 300
 Ala Pro Gly Ile Ile Gly Ala Ser Leu Glu Val Phe Lys Met Leu Lys
 305 310 315 320
 Glu Ser Asn Glu Ile His Asp Lys Leu Val Asp Asn Val Asn Tyr Phe
 325 330 335
 Arg Asp Lys Met Thr Ala Ala Gly Phe Asp Ile Lys Pro Thr Gln Ser
 340 345 350
 Ala Ile Cys Ala Val Met Leu Tyr Asp Ala Lys Leu Ser Gln Ile Tyr
 355 360 365
 Ala Ala Arg Met Gln Glu Glu Gly Ile Tyr Val Thr Gly Phe Tyr Tyr
 370 375 380
 Pro Val Val Pro Lys Asp Gln Ala Arg Ile Arg Val Gln Ile Ser Ala
 385 390 395 400
 Gly His Glu Lys Glu His Leu Asp Lys Cys Ile Ala Ala Phe Ile Lys
 405 410 415
 Val Gly Lys Glu Leu Gly Val Leu Lys
 420 425

<210> 10147

<211> 244

<212> PRT

<213> B.fragilis

<400> 10147

Lys Ser Phe Glu Asn Arg Leu Ala Cys Gly Asp Ile Asp Thr Leu Leu
 1 5 10 15
 Ile Ile Lys Met Lys Thr Ile Met Ala Gly Val Thr Val Leu Val Leu
 20 25 30
 Phe Ala Ser Cys Gly Asn Ser Asn Lys Thr Asp Ala Asp Pro Phe Ala
 35 40 45
 Ser Ile Thr His Leu Val Asp Ser Ala Met Val Asn Lys Thr Asp Ser
 50 55 60
 Ile Asp Arg Glu Lys Thr Ser Asp Glu Pro Lys Pro Ile Glu Ala Asp
 65 70 75 80
 Glu Ser Phe Asp Asp Phe Ile Tyr Asn Phe Ala Ser Asp Asp Ala Leu
 85 90 95
 Gln Arg Gln Arg Val Val Phe Pro Leu Pro Tyr Tyr Asn Gly Glu Arg
 100 105 110
 Ala Leu Lys Ile Asp Arg Lys Tyr Trp Lys His Asp Asp Leu Phe Ala
 115 120 125
 Lys Gln Ser Tyr Tyr Thr Leu Leu Phe Asp Arg Glu Glu Asp Met Asp
 130 135 140
 Leu Val Gly Asp Thr Ser Leu Thr Ser Val Gln Val Glu Trp Ile Phe
 145 150 155 160
 Val Lys Lys Arg Met Val Lys Lys Tyr Tyr Phe Glu Arg Ile Lys Gly
 165 170 175
 Ala Trp Met Leu Glu Ala Ile Asn Leu Arg Pro Ile Glu Glu Asn Glu
 180 185 190
 Asn Glu Asp Phe Val Glu Phe Phe Gly His Phe Ala Thr Asp Ser Ile
 195 200 205
 Leu Gln Ser Arg Arg Ile Arg Gln Pro Leu Val Phe Val Thr Thr Asp
 210 215 220
 Pro Asp Asp Asp Phe Ser Leu Leu Glu Thr Thr Leu Asp Leu Asn Gln
 225 230 235 240
 Trp Phe Cys Leu

<210> 10148

<211> 349
 <212> PRT
 <213> B.fragilis

<400> 10148

Cys	Met	Lys	Arg	Met	Ile	Val	Tyr	Lys	Ser	Cys	Ser	Tyr	Val	Ile	Met
1				5				10						15	
Ala	Leu	Leu	Cys	Thr	Ala	Cys	Ala	Ala	Gly	Ser	Pro	Glu	Glu	Asp	Met
			20					25						30	
Glu	Asp	Arg	Val	Arg	Ile	Asp	Pro	Val	Ala	Gly	Gly	Tyr	Tyr	Pro	Ser
		35					40					45			
Ile	Ser	Pro	Ser	Ala	Gln	Thr	Arg	Gly	Ala	Thr	Pro	Asp	Gly	Glu	Thr
	50					55					60				
Leu	Lys	Asp	Arg	Pro	Ile	Phe	Leu	Leu	Glu	Asp	Gly	Ser	Thr	Ile	Arg
65					70					75				80	
Leu	Val	Val	Tyr	Asp	Asp	Ala	Lys	Asn	Leu	Leu	Glu	Glu	Tyr	Ser	Lys
				85					90					95	
Ala	Tyr	Leu	Val	Arg	Asn	Ala	Gly	Thr	Ser	Gly	Ser	Ser	Leu	Leu	Tyr
			100					105					110		
Pro	Cys	Glu	Val	Asp	Asp	Asn	Gly	Ala	Val	Ile	Ser	Ser	Ser	Ser	Thr
	115						120					125			
Pro	Leu	Tyr	Met	Lys	Ala	Gly	Thr	Tyr	Tyr	Phe	Arg	Ile	Leu	Ser	Pro
	130					135					140				
Ala	Lys	Ala	Leu	Asn	Ser	Lys	Gly	Phe	Val	Asn	Ile	Gly	Asn	Gly	Glu
145				150						155					160
Tyr	Leu	Leu	Ala	Thr	Asp	Asp	Arg	Tyr	Thr	Gln	Thr	Ala	Met	Thr	Ala
				165					170					175	
Val	Thr	Ile	Thr	Lys	Ile	Asp	Glu	Gly	Gly	Thr	Leu	Asn	Asn	Val	Gln
			180					185					190		
Thr	Leu	Tyr	Leu	Pro	Pro	Ile	Ile	Asn	Gln	Thr	Ala	Arg	Met	Gln	Phe
	195						200					205			
Thr	Val	Arg	Ala	Gly	Glu	Gly	Val	His	Thr	Leu	Glu	Met	Leu	Ala	Glu
	210					215					220				
Gly	Ile	Glu	Ile	Ser	Gly	Ile	Gln	Gln	Pro	Leu	Asp	Asn	Thr	Thr	Ser
225					230					235					240
Phe	Asp	Trp	Val	Asn	Gly	Asp	Val	Leu	Pro	Val	Lys	Val	Gly	Asp	Gln
				245					250					255	
Ser	Ala	Ser	Val	Arg	Ile	Thr	Gln	Ala	Thr	Arg	Asn	Ala	Asp	Asn	Ser
			260					265					270		
Leu	Val	Ala	His	Thr	Gly	Val	Leu	Pro	Thr	Asp	Ala	Arg	Ser	His	Ser
		275					280					285			
Ile	Ser	Val	Leu	Leu	Asn	Leu	Lys	Val	Asn	Gly	Asn	Pro	Thr	Gln	Tyr
	290					295					300				
Gln	Met	Leu	Leu	Thr	Gly	Leu	Tyr	Leu	Thr	Ala	Gly	Arg	Ser	Tyr	Asn
305					310					315					320
Tyr	Thr	Ala	Thr	Val	Lys	Ile	Ser	Asn	Gly	Val	Thr	Val	Leu	Thr	Trp
				325					330					335	
Gln	Asn	Arg	Ser	Trp	Thr	Glu	Asn	Val	Val	Met	Asp	Lys			
			340					345							

<210> 10149
 <211> 139
 <212> PRT
 <213> B.fragilis

<400> 10149

Lys	Asn	Thr	Ile	Thr	Met	Glu	Glu	Leu	Thr	Leu	Thr	Thr	Pro	Ala	Leu
1				5				10						15	
Leu	Phe	Ser	Ala	Val	Ser	Leu	Ile	Leu	Leu	Ala	Tyr	Thr	Asn	Arg	Phe


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<210> 10150
<211> 309
<212> PRT
<213> B.fragilis
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<400>	10150														
Asn	Lys	Gln	Ile	Arg	Val	Met	Asn	Asn	Asn	Asp	Pro	Met	Lys	Arg	Phe
1				5					10					15	
Gly	Tyr	Ile	Val	Phe	Ser	Ile	Cys	Leu	Phe	Ala	Leu	Ser	Ala	Cys	Thr
			20					25					30		
Ser	His	Glu	Gln	Met	Asp	Gln	Glu	Glu	Gly	Ile	Val	Lys	Val	Ser	Met
		35					40					45			
Gly	Leu	Thr	Ala	Ala	Ser	Phe	Thr	Asp	Asp	Asp	Ala	Thr	Thr	Arg	Ala
	50					55					60				
Glu	Gln	Pro	Met	Ala	Pro	Asp	Tyr	Glu	Asn	Leu	Ile	Ser	Asn	Leu	Trp
65					70					75					80
Ile	Leu	Gln	Phe	Asp	Arg	Glu	Gly	Ile	Leu	Thr	Gly	Ser	Glu	His	Lys
				85					90					95	
Val	Leu	Pro	Thr	Pro	Val	Leu	Asn	Thr	Thr	Leu	Glu	Gly	Ile	Ala	Leu
			100					105					110		
Arg	Thr	Gly	Arg	Gly	Thr	Val	Cys	Val	Val	Gly	Asn	Leu	Ala	Asp	Gly
		115					120					125			
Glu	Ile	Ala	Ala	Trp	Pro	Asp	Asn	Leu	Ser	Gly	Phe	Lys	Ser	Leu	Val
	130					135					140				
Val	Asp	Met	Gly	Trp	Leu	Lys	Glu	Arg	Asn	Thr	Asp	Arg	Asn	Val	Cys
145					150					155					160
Leu	Phe	Gly	Tyr	Tyr	Glu	Gly	Glu	Ile	Ala	Ala	Gly	Thr	Thr	Ala	Val
				165					170					175	
Asn	Val	Val	Leu	Gly	Arg	Leu	Val	Cys	Arg	Leu	Asn	Ile	Ala	Val	Ser
			180					185					190		
Ala	Lys	Thr	Ala	Gly	Ile	Phe	Ser	Asn	Val	Arg	Ile	Gln	Leu	Gln	Asn
		195					200					205			
Ala	Gln	Thr	Lys	Gly	Tyr	Leu	Phe	Pro	Ser	Asp	Val	Tyr	Leu	Ser	Pro
	210					215					220				
Glu	Gly	Gly	Gly	Asn	Tyr	Thr	Glu	Glu	Val	Val	Ile	Gly	Ala	Asp	Lys
225					230					235					240
Val	Leu	Gly	Thr	Ala	Pro	Leu	Tyr	Arg	Tyr	Tyr	Tyr	Met	Ala	Glu	Asn
				245					250				255		
Val	Thr	Glu	Gly	Thr	Asp	Ser	Gly	Glu	Arg	Thr	Arg	Leu	Gln	Ile	Lys
		260						265					270		
Ala	Lys	Lys	Gly	Gly	Ala	Glu	Tyr	Thr	Lys	Ala	Ile	Asp	Leu	Gly	Arg
		275					280					285			
Ser	Asp	Ile	His	Asp	Tyr	Ser	Leu	Arg	Arg	Asn	Asn	Asn	Tyr	Thr	Phe

290
Asn Ile Val Leu Glu
305

295

300

<210> 10151
<211> 68
<212> PRT
<213> B.fragilis

<400> 10151
Asn Cys Gly Phe Gln Leu Leu Met Tyr Ile Leu Ser Ser Ala Asp Glu
1 5 10 15
Thr Tyr Arg Arg His Thr Val Ser Thr Thr Val His His Leu Leu Cys
20 25 30
Thr Phe Asp Gln Ala Gly Met Val Arg Gln Ser Lys Val Val Val Gly
35 40 45
Thr Glu Ile Gln His Phe Phe Ala Phe Asn Gly Asp Ser Ser Leu Leu
50 55 60
Cys Thr Phe Asp
65

<210> 10152
<211> 324
<212> PRT
<213> B.fragilis

<400> 10152
Tyr Thr Leu Leu Val Lys Ile Met Lys Asn Ile Leu Val Ile Gly Ala
1 5 10 15
Thr Gly Gln Ile Gly Ser Glu Leu Thr Met Glu Leu Arg Lys Arg Tyr
20 25 30
Gly Asn Thr His Val Val Ala Gly Tyr Ile His Gly Ala Glu Pro Lys
35 40 45
Gly Glu Leu Lys Glu Ser Gly Pro Ser Ala Val Val Asp Val Thr Asp
50 55 60
Gln Asp Met Ile Ala Ser Val Val Arg Glu Tyr Asn Ile Asp Thr Ile
65 70 75 80
Tyr Asn Leu Ala Ala Leu Leu Ser Val Val Ala Glu Ser Lys Pro Lys
85 90 95
Leu Ala Trp Lys Ile Gly Ile Asp Gly Leu Trp Asn Val Leu Glu Val
100 105 110
Ala Arg Glu Asn Lys Cys Ala Val Phe Thr Pro Ser Ser Ile Gly Ser
115 120 125
Phe Gly Glu Ser Thr Pro His Val Gln Thr Pro Gln Asp Thr Ile Gln
130 135 140
Arg Pro Arg Thr Met Tyr Gly Ile Ser Lys Val Thr Thr Glu Leu Leu
145 150 155 160
Ser Asp Tyr Tyr Phe Asn Lys Tyr Gly Val Asp Thr Arg Ala Val Arg
165 170 175
Phe Pro Gly Ile Ile Ser Asn Val Thr Pro Pro Gly Gly Gly Thr Thr
180 185 190
Asp Tyr Ala Val Asp Ile Tyr Tyr Ser Ala Val Lys Gly Glu Lys Phe
195 200 205
Ile Cys Pro Ile Pro Glu Gly Thr Leu Met Asp Met Met Tyr Met Pro
210 215 220
Asp Ala Leu Asn Ala Ala Ile Ser Leu Met Glu Ala Asp Pro Thr Lys
225 230 235 240
Leu Val His Arg Asn Ala Phe Asn Ile Ala Ser Met Ser Phe Ala Pro
245 250 255

Glu Thr Ile Tyr Ala Ala Ile Lys Lys His Val Pro Asp Phe Glu Met
 260 265 270
 Glu Tyr Lys Val Asp Pro Leu Lys Gln Arg Ile Ala Asn Ser Trp Pro
 275 280 285
 Asp Ser Met Asp Asp Ser Cys Ala Arg Glu Glu Trp Gly Trp Lys Pro
 290 295 300
 Ala Tyr Asp Leu Glu Ser Met Thr Val Asp Met Leu Glu Lys Leu Arg
 305 310 315 320
 Ala Lys Leu Lys

<210> 10153
 <211> 589
 <212> PRT
 <213> B.fragilis

<400> 10153
 Ala Glu Glu Ser Cys Ser Ala Leu Met Phe His Ser Lys Lys Ser Arg
 1 5 10 15
 His Ile Met Lys Ile Lys His Ile Val Ser Cys Phe Phe Val Ser Leu
 20 25 30
 Ile Gly Leu Ser Ala Cys Ser Ile Glu Glu Leu Pro Tyr Asn Gln Leu
 35 40 45
 Thr Glu Asp Glu Leu Asp Gly Ser Tyr Glu Ser Leu Leu Ser Ala Thr
 50 55 60
 Arg Gly Asn Tyr Ala Val Phe Lys Gln Thr Ala Phe His Gln Gly Trp
 65 70 75 80
 His Tyr Ala Gly Glu Leu Ala Ser Asp Asn Val Ser Leu Ser Gly Val
 85 90 95
 Ser Ser Asp Ala Leu Met Tyr Ile Tyr Asn Tyr Gln Arg Ile Thr Asp
 100 105 110
 Asn Tyr His Met Ser Asn Met Trp Gly Trp Ala Tyr Arg Ser Ile Ile
 115 120 125
 Asn Ser Asn Lys Ile Leu Glu Lys Ala Gln Glu Gly Glu Ser Lys Glu
 130 135 140
 Met Asp Gln Leu Ile Gly Glu Asn Tyr Phe Leu Arg Gly Trp Leu Glu
 145 150 155 160
 Phe Val Leu Val Asn Val Phe Gly Arg Pro Tyr Asn Gln Ser Pro Glu
 165 170 175
 Thr Asn Leu Gly Ile Pro Leu Lys Leu Thr Ala Asp Ile Asn Asp Tyr
 180 185 190
 Pro Met Arg Ser Thr Val Lys Glu Ser Tyr Glu Gln Ile Leu Lys Asp
 195 200 205
 Leu Lys Lys Ala Glu Thr Leu Leu Asn Ser Glu Ser Asn Ile Tyr Ala
 210 215 220
 Gly Pro Ser Ala Ala Lys Ala Leu Leu Ser Arg Val Tyr Leu Tyr Met
 225 230 235 240
 Gly Asn Asn Lys Leu Ala Ala Glu Tyr Ala Thr Glu Val Ile Glu Ser
 245 250 255
 Ser Gly Arg Thr Leu Leu Glu Gly Glu Ala Tyr Ala Thr Ala Asn Val
 260 265 270
 Leu Val Pro Glu Asp Asn Pro Glu Ile Ile Phe Ala Ile Arg Cys Thr
 275 280 285
 Lys Asp Lys Asp Asp Tyr Gly Trp Asn Ser Ile Gly Gly Phe Tyr Ala
 290 295 300
 Asn Ile Asp Gly Val Gly Trp Gly Glu Leu Tyr Ala Ser Glu Pro Leu
 305 310 315 320
 Arg Asp Ala Tyr Ala Glu Tyr Pro Glu Asp Leu Arg Ser Arg Tyr Ile
 325 330 335

Val Pro Gln Tyr Leu Lys Asp Asp Glu Thr Gly Glu Tyr Arg Lys Glu
 340 345 350
 Phe Ile Tyr Ile Glu Ser Ser Glu Glu Asp Gly Val Pro Arg Lys Tyr
 355 360 365
 Tyr Arg Trp Asn Glu Ile Ile Glu Glu Asn Gly Asn Tyr Arg Ile Lys
 370 375 380
 Asp Ala Tyr Leu Ser Lys Tyr Glu Tyr Lys Asp Thr Leu Thr Met Lys
 385 390 395 400
 Gln Asp Ala Gly Gly Tyr Tyr Val Glu Ser Arg Leu Lys Ser Gly Lys
 405 410 415
 Asp Asn Pro Thr Pro Gly Thr Tyr Glu Lys His Tyr Val Thr Ile Gln
 420 425 430
 Asn Leu Met Ala Lys Arg Asn Asp Tyr Pro Lys Tyr Tyr Val Tyr Lys
 435 440 445
 Cys Ser Lys Gln Glu Asn Gln Pro Gln Leu Trp Ser Pro Thr Val Leu
 450 455 460
 Arg Leu Gly Glu Met Tyr Leu Asn Arg Ala Glu Ala Tyr Ala Lys Glu
 465 470 475 480
 Pro Ala Leu Gly Asp Ala Leu Ala Asp Leu Asn Val Ile Arg Thr Arg
 485 490 495
 Ala His Ile Pro Ala Leu Ser Ala Gly Asp Met Lys Pro Gly Lys Thr
 500 505 510
 Met Leu Glu Tyr Val Leu Glu Glu Arg Arg Lys Glu Leu Ala Phe Glu
 515 520 525
 Gly His Arg Arg Phe Asp Ile Phe Arg Asn Gly Leu Thr Met Asn Arg
 530 535 540
 Thr Tyr Pro Gly Thr His Asp Arg Gly Ala Ala Thr Ser Val Arg Leu
 545 550 555 560
 Thr Ile Ser Ala Asp Asp Pro Ala Ala Ile Glu Phe Ile Pro Gln Arg
 565 570 575
 Glu Ile Asp Ser Tyr Pro Gly Val Leu Glu Gln Asn Pro
 580 585

<210> 10154
 <211> 1060
 <212> PRT
 <213> B.fragilis

<400> 10154
 Ser Ser Leu Ser Arg Cys Leu Glu Trp Lys Ala Glu Gln His Glu Asp
 1 5 10 15
 Thr Thr Ser Ser Pro Gly Ser Asp Leu Ser Val Val Ile Tyr Thr Gly
 20 25 30
 Ile Val Glu Val Asn Gly Phe Leu Gln Tyr Lys Met Lys Arg Arg Tyr
 35 40 45
 Leu Leu Ala Gly Leu Val Val Ser Ala Leu Leu Gly Val Gly Ala Lys
 50 55 60
 Val Pro Ala Ser Met Asp Ala Pro Val Arg Glu Val Phe His Thr Pro
 65 70 75 80
 Pro Gly Met Ser Ala Pro Ile Glu Pro Leu Leu Leu Tyr Gln Ala Ser
 85 90 95
 Gln Asp Glu Lys Cys Arg His Trp Val Asp Ser Val Tyr Asn Arg Met
 100 105 110
 Asn Leu Arg Glu Lys Val Gly Gln Leu Phe Ile Tyr Thr Ile Ala Pro
 115 120 125
 Val Gln Thr Lys Arg Asn Met Gln Leu Leu Arg Asp Ala Val His Thr
 130 135 140
 Tyr Lys Val Gly Gly Leu Leu Phe Ser Gly Gly Lys Ile Gln Asn Gln
 145 150 155 160

Ala	Thr	Leu	Thr	Asn	Glu	Ala	Gln	Arg	Met	Ala	Arg	Cys	Pro	Leu	Leu		
				165					170						175		
Ile	Thr	Phe	Asp	Gly	Glu	Trp	Gly	Leu	Ser	Met	Arg	Leu	Arg	Gly	Thr		
			180					185					190				
Pro	Val	Phe	Pro	Arg	Asn	Met	Val	Leu	Gly	Cys	Ile	Gln	Asp	Asn	Arg		
		195					200					205					
Leu	Ile	Tyr	Glu	Tyr	Gly	Arg	Glu	Met	Ala	Arg	Gln	Cys	Arg	Glu	Met		
	210					215					220						
Gly	Val	Gln	Val	Asn	Phe	Ala	Pro	Val	Ala	Asp	Val	Asn	Ile	Asn	Pro		
225				230						235					240		
Asp	Asn	Pro	Val	Ile	Asn	Thr	Arg	Ser	Phe	Gly	Glu	Asp	Pro	Val	Lys		
			245						250					255			
Val	Ala	Asp	Lys	Val	Ile	Ala	Tyr	Ala	Ser	Gly	Leu	Glu	Ser	Gly	Lys		
		260					265							270			
Val	Leu	Ser	Val	Cys	Lys	His	Phe	Pro	Gly	His	Gly	Asp	Thr	Asp	Val		
	275						280					285					
Asp	Ser	His	Lys	Ala	Leu	Pro	Val	Leu	Pro	Phe	Thr	Arg	Glu	Arg	Leu		
	290					295					300						
Asp	Ser	Val	Glu	Leu	Tyr	Pro	Phe	Lys	Glu	Ala	Ile	Arg	Ala	Gly	Val		
305				310						315					320		
Ser	Gly	Met	Met	Val	Gly	His	Leu	Gln	Val	Pro	Val	Ile	Glu	Pro	Ile		
			325						330					335			
Gly	Asp	Leu	Pro	Ser	Ser	Leu	Ser	Arg	Asn	Val	Val	Tyr	Gly	Leu	Leu		
		340						345					350				
Thr	Glu	Glu	Leu	Ala	Phe	Lys	Gly	Leu	Ile	Phe	Thr	Asp	Ala	Leu	Ala		
	355						360					365					
Met	Lys	Gly	Val	Ala	Gly	Asn	Lys	Ser	Val	Cys	Leu	Gln	Ala	Leu	Gln		
	370					375					380						
Ala	Gly	Asn	Asp	Met	Val	Leu	Ala	Pro	Arg	Arg	Leu	Lys	Glu	Glu	Met		
385				390						395					400		
Asp	Ala	Val	Leu	Glu	Ala	Val	Glu	Lys	Gly	Glu	Leu	Pro	Glu	Glu	Glu		
			405						410					415			
Ile	Asn	Ala	Lys	Cys	Arg	Lys	Val	Leu	Thr	Tyr	Lys	Tyr	Ile	Leu	Gly		
		420						425					430				
Leu	Glu	Arg	Lys	Pro	Phe	Val	Lys	Leu	Ser	Gly	Leu	Gly	Thr	Arg	Ile		
	435						440					445					
Asn	Thr	Pro	Gln	Thr	Arg	Asp	Leu	Ile	Ser	Arg	Leu	Asn	Leu	Ala	Ala		
	450					455					460						
Ile	Thr	Val	Leu	Asn	Asn	Lys	Asn	Asp	Val	Leu	Pro	Leu	His	Pro	Asp		
465				470						475					480		
Leu	Lys	Glu	Ala	Ala	Ile	Leu	Asn	Val	Gly	Lys	Pro	Glu	Glu	Ile	Glu		
			485						490					495			
Pro	Phe	Asp	His	Lys	Met	Lys	Lys	Tyr	Thr	Ser	Phe	Ala	Arg	Phe	Gln		
		500						505					510				
Leu	Arg	Lys	Asp	Leu	Pro	Glu	Ala	Glu	Gln	Gln	Lys	Leu	Arg	Asp	Ser		
	515					520						525					
Leu	Ala	Ala	Tyr	Arg	Arg	Val	Ile	Val	Thr	Val	Thr	Glu	Gln	Arg	Leu		
	530					535					540						
Ala	Ser	Tyr	Gln	Ser	Phe	Phe	Ala	Lys	Phe	Ala	Pro	Glu	Ser	Pro	Val		
545				550						555					560		
Ile	Tyr	Val	Phe	Tyr	Thr	Pro	Ala	Lys	Ser	Met	Leu	Gln	Ile	Gln	Arg		
			565						570					575			
Ala	Val	Ser	Ala	Ala	Glu	Ala	Val	Val	Leu	Ala	His	Ala	Ser	Arg	Asp		
		580					585						590				
Asp	Val	Gln	Glu	Arg	Val	Ala	Asp	Leu	Leu	Phe	Gly	Lys	Ala	Thr	Ala		
	595					600						605					
Asp	Gly	Arg	Leu	Ser	Ala	Ser	Ile	Gly	Gly	Leu	Phe	Pro	Thr	Gly	Ser		
	610					615					620						
Gly	Val	Thr	Ile	Thr	Pro	His	Thr	Pro	Phe	His	Phe	Val	Pro	Glu	Glu		

625 630 635 640
 Tyr Gly Met Lys Ser Glu Val Leu Arg Arg Ile Asp Thr Ile Ala Leu
 645 650 655
 Glu Gly Ile Lys Glu Gly Ala Tyr Pro Gly Cys Gln Val Leu Val Met
 660 665 670
 Lys Asp Gly Lys Ala Leu Tyr Asp Arg Cys Phe Gly Tyr His Thr Asp
 675 680 685
 Ala Asn Ser Glu Lys Val Lys Pro Thr Asp Ile Tyr Asp Leu Ala Ser
 690 695 700
 Leu Ser Lys Thr Thr Gly Thr Leu Leu Ala Ile Met Lys Leu Tyr Asp
 705 710 715 720
 Lys Gly Arg Phe Asn Leu Thr Asp Lys Val Ser Asp Tyr Leu Pro Phe
 725 730 735
 Leu Arg Lys Thr Asn Lys Glu Asn Leu Thr Ile Arg Glu Leu Leu Met
 740 745 750
 His Gln Ser Gly Leu Pro Ser Gly Leu Leu Phe Tyr Gln Glu Ala Ile
 755 760 765
 Asp Gly Lys Ser Tyr Lys Gly Ser Leu Phe Lys Gln Ser Lys Asp Ala
 770 775 780
 Leu His Thr Val Arg Leu Gly Val Arg Thr Trp Gly Asn Pro Arg Phe
 785 790 795 800
 Arg Phe Asn Lys Gly Met Ala Ser Lys Glu Lys Asn Gly Asp Tyr Thr
 805 810 815
 Leu Gln Val Cys Asp Ser Leu Trp Leu Asn Arg Ser Phe Arg Glu Glu
 820 825 830
 Ile Arg Lys Lys Ile Ala Glu Ala Pro Leu Lys Asp Lys Ser Tyr Arg
 835 840 845
 Tyr Ser Asp Val Gly Phe Ile Leu Leu Gln Met Leu Ala Glu Glu Leu
 850 855 860
 Ser Gly Lys Pro Met Asp Glu Tyr Leu Trp Gln Glu Phe Tyr Gln Pro
 865 870 875 880
 Met Gly Leu Glu His Thr Ala Tyr Leu Pro Leu Arg Tyr Phe Asp Lys
 885 890 895
 Lys Glu Val Val Pro Ser Ala Val Asp Arg Phe Leu Arg Lys Thr Thr
 900 905 910
 Leu Gln Gly Phe Val His Asp Glu Ser Ala Ala Phe Gln Gly Gly Ile
 915 920 925
 Ser Gly Asn Ala Gly Leu Phe Ser Asn Ala Arg Glu Val Gly Arg Ile
 930 935 940
 Tyr Gln Met Leu Leu Asn Gly Gly Glu Leu Asp Gly Arg Arg Tyr Leu
 945 950 955 960
 Ser Lys Glu Thr Cys Ala Leu Phe Thr Thr Glu Lys Ser Lys Ile Ser
 965 970 975
 Arg Arg Gly Leu Gly Phe Asp Lys Pro Asp Val Val Asn Glu Ser Lys
 980 985 990
 Ser Pro Cys Ala Ala Ser Val Pro Val Thr Val Phe Gly His Thr Gly
 995 1000 1005
 Phe Thr Gly Thr Cys Ala Trp Val Asp Pro Asp Asn Gly Leu Ile Tyr
 1010 1015 1020
 Val Phe Leu Ser Asn Arg Thr Tyr Pro Asp Ala Trp Val Asn Lys Leu
 1025 1030 1035 1040
 Ser Lys Leu Glu Ile Arg Glu Lys Ile Gln Glu Thr Ile Tyr Glu Ala
 1045 1050 1055
 Met Lys Glu Lys
 1060

<210> 10155

<211> 242

<212> PRT

<213> B.fragilis

<400> 10155

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Ile Asp Glu Thr Val Ile His Leu Lys Asp Ile Asn Lys Thr Tyr Asn
1      5      10      15
Asn Gly Ala Pro Leu His Val Leu Lys Gly Ile Asn Leu Asp Ile Glu
      20      25      30
Arg Gly Glu Phe Val Ser Ile Met Gly Ala Ser Gly Ser Gly Lys Ser
      35      40      45
Thr Leu Leu Asn Ile Leu Gly Ile Leu Asp Asn Tyr Asp Asn Gly Glu
      50      55      60
Tyr Tyr Leu Asn Asn Val Leu Ile Lys Asp Leu Ser Glu Thr Lys Ser
      65      70      75      80
Ala Glu Tyr Arg Asn Arg Met Ile Gly Phe Ile Phe Gln Ser Phe Asn
      85      90      95
Leu Ile Ser Phe Lys Asn Ala Val Glu Asn Val Ala Leu Pro Leu Phe
      100     105     110
Tyr Gln Gly Val Ser Arg Lys Lys Arg Asn Ala Leu Ala Met Glu Tyr
      115     120     125
Leu Asp Lys Leu Gly Leu Lys Asp Trp Ala His His Met Pro Asn Glu
      130     135     140
Met Ser Gly Gly Gln Lys Gln Arg Val Ala Ile Ala Arg Ala Leu Ile
      145     150     155     160
Thr Gln Pro Gln Ile Ile Leu Ala Asp Glu Pro Thr Gly Ala Leu Asp
      165     170     175
Ser Lys Thr Ser Val Glu Val Met Gln Ile Leu Lys Asp Leu His Lys
      180     185     190
Thr Gly Met Thr Ile Val Val Val Thr His Glu Ser Gly Val Ala Asn
      195     200     205
Gln Thr Asp Lys Ile Ile His Ile Lys Asp Gly Ile Ile Glu Arg Ile
      210     215     220
Glu Glu Asn Leu Asn His Asp Ala Ser Pro Phe Gly Lys Asp Gly Tyr
      225     230     235     240
Met Lys

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<210> 10156

<211> 148

<212> PRT

<213> B.fragilis

<400> 10156

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Met Pro Glu Ala Met Phe Ser Met Met Asp Asn Leu Phe Thr Gly Ile
1      5      10      15
His Val Leu Ile Trp Met Val Gly Leu Gly Thr Leu Leu Ala Gly Ala
      20      25      30
Ile Gly Val Ser Asn Ile Met Met Val Thr Val Lys Glu Arg Thr Pro
      35      40      45
Glu Ile Gly Asn Pro Arg Ala Ile Gly Ala Arg Pro Lys Asp Ile Leu
      50      55      60
Gln Gln Ile Leu Ser Glu Ser Met Val Leu Thr Thr Ile Ala Gly Met
      65      70      75      80
Ala Gly Ile Ser Phe Gly Val Leu Ile Leu Gln Leu Met Glu Ile Gly
      85      90      95
Val Asn Ser Gly Lys Asp His Tyr Ser His Phe Gln Val Ser Phe Gly
      100     105     110
Met Ala Ile Gly Thr Cys Leu Leu Leu Val Thr Leu Gly Leu Leu Ala
      115     120     125
Gly Leu Ala Pro Ala Tyr Arg Ala Met Ala Ile Arg Pro Ile Glu Ala

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130
Ile Arg Asp Glu
145

135

140

<210> 10157
<211> 261
<212> PRT
<213> B.fragilis

<400> 10157
Ser Lys Ile Leu Arg Arg Lys Lys Met Phe Asp Asn Glu His Leu Thr
1 5 10 15
Tyr Ile Cys Gly His Tyr Lys Lys Gly Ala Ser Glu Thr Tyr Asp Ser
20 25 30
Arg Gln Tyr Pro Arg Glu Arg Ser Lys Thr Glu Ile Leu Thr Thr Ile
35 40 45
Asn Pro Leu Leu Leu Phe Phe Ser Tyr Leu Ala Ala Leu Leu Asp His
50 55 60
Thr Glu Lys Tyr Pro Gly Thr Gln Tyr Thr Arg Met Asp Asp Leu Asn
65 70 75 80
Ile Asn Ser Phe Asn Ala Leu Tyr Thr Leu Tyr Tyr Arg Lys Ser Phe
85 90 95
Leu Phe Ala Lys Ser Tyr Val His Asp Glu Gln Val Ala Glu Asp Ile
100 105 110
Ala Ala Glu Ala Leu Ile Lys Leu Trp Glu Lys Leu Lys Thr Asp Ile
115 120 125
Ile Asn Ser Pro Gln Ala Met Leu Leu Thr Ile Leu Lys Asn Lys Ser
130 135 140
Leu Asp Tyr Leu Arg Leu Glu Gln Asn Lys Leu Asn Ala Met Ser Glu
145 150 155 160
Leu Ser Glu Leu Tyr Val Arg Glu Leu Asp Ile Arg Val Ser Ser Leu
165 170 175
Glu Ala Cys Asp Pro Ser Glu Ile Phe Ser Glu Glu Val Asn Gln Ile
180 185 190
Ile Gln Ala Thr Leu Arg Thr Leu Pro Glu Gln Thr Arg Lys Val Phe
195 200 205
Lys Met Ser Arg Phe Glu Asn Lys Met Asn Lys Glu Ile Ala Glu Asn
210 215 220
Leu Gly Ile Thr Val Lys Gly Val Glu Tyr His Ile Ser Arg Ala Leu
225 230 235 240
Lys Glu Phe Arg Ile Ser Leu Lys Asp Tyr Leu Pro Leu Phe Tyr Phe
245 250 255
Phe Phe Tyr Phe His
260

<210> 10158
<211> 1007
<212> PRT
<213> B.fragilis

<400> 10158
Asn Thr Val Tyr Glu Ile Pro Pro Arg Gln Thr Met Leu Lys Gln Leu
1 5 10 15
Leu Thr Val Val Phe Leu Leu Ser Ala Gly Thr Leu Trp Ala Gln Gln
20 25 30
Ala Ala Gly Leu Leu Pro Val Gln Glu Asp Thr His Cys Lys Glu Trp
35 40 45
Val Glu Gln Thr Leu Ser Arg Met Lys Leu Lys Asp Lys Val Gly Gln
50 55 60

Leu	Phe	Val	Tyr	Thr	Leu	Ala	Pro	Arg	Ala	Asp	Lys	Asp	Thr	Glu	Lys
65					70					75					80
Leu	Val	Gly	Lys	Leu	Thr	Arg	Lys	Phe	Lys	Val	Gly	Ala	Phe	Leu	Tyr
				85					90					95	
Ser	Glu	Gly	Thr	Val	Glu	Asp	Gln	Ala	Asn	Leu	Thr	Asn	Tyr	Ala	Gln
			100					105					110		
Arg	Gln	Ser	Lys	Ile	Pro	Leu	Met	Ile	Thr	Phe	Asp	Gly	Glu	Trp	Gly
		115					120					125			
Leu	Ala	Met	Arg	Leu	Glu	Asn	Thr	Pro	Val	Phe	Pro	Arg	Asn	Ala	Ala
	130					135					140				
Leu	Gly	Cys	Ile	Ser	Asp	Asn	Thr	Leu	Ile	Glu	Ala	Tyr	Gly	Gln	Glu
145					150					155					160
Val	Ala	Arg	Glu	Leu	Arg	Glu	Ile	Gly	Ala	His	Val	Asn	Phe	Ala	Pro
			165						170					175	
Asp	Ala	Asp	Val	Asn	Thr	Asn	Pro	Glu	Asn	Pro	Val	Ile	His	Val	Arg
			180					185					190		
Ser	Phe	Gly	Glu	Asn	Pro	Lys	Thr	Val	Ala	Glu	Lys	Val	Ile	Ala	Tyr
		195				200						205			
Gly	Arg	Gly	Leu	Glu	Thr	Gly	Gly	Ile	Leu	Ser	Val	Ser	Lys	His	Phe
	210					215					220				
Pro	Gly	His	Gly	Asp	Thr	Asp	Val	Asp	Ser	His	Gln	Ala	Leu	Pro	Ala
225					230						235				240
Val	Tyr	Tyr	Asn	Arg	Ala	Arg	Leu	Asp	Ser	Val	Glu	Leu	Tyr	Pro	Phe
			245					250					255		
Lys	Glu	Ala	Ile	Gln	Ala	Gly	Leu	Gly	Gly	Val	Met	Val	Gly	His	Leu
		260						265					270		
Gln	Val	Pro	Ala	Leu	Glu	Pro	Asp	Arg	Ile	Thr	Pro	Ser	Ser	Leu	Ser
		275					280					285			
His	Ser	Ile	Val	Thr	Asp	Leu	Leu	Arg	Gly	Glu	Leu	Gly	Phe	Asn	Gly
	290				295						300				
Leu	Val	Phe	Thr	Asp	Ala	Leu	Ala	Met	Lys	Gly	Val	Ala	Ala	Glu	Ser
305					310					315					320
Asp	Val	Thr	Val	Lys	Ala	Leu	Lys	Ala	Gly	Asn	Asp	Met	Val	Leu	Val
			325						330					335	
Gln	Gln	Asn	Val	Glu	Lys	Ala	Gln	Glu	Ser	Val	Val	Gln	Ala	Ile	Lys
		340						345					350		
Asp	Gly	Arg	Leu	Thr	Met	Glu	Glu	Ile	Asp	Ala	Lys	Cys	Arg	Arg	Ile
	355					360						365			
Leu	Ala	Tyr	Lys	Tyr	Arg	Leu	Gly	Leu	Ser	Arg	Arg	Pro	Met	Ile	Pro
370					375						380				
Val	Asp	Gly	Leu	Ser	Asp	Arg	Ile	His	Thr	Pro	Glu	Ala	Gln	Ala	Leu
385					390						395				400
Val	Thr	Lys	Leu	Arg	Thr	Ser	Ala	Val	Thr	Val	Leu	Gly	Asn	Tyr	Phe
			405					410						415	
Gln	Ile	Leu	Pro	Leu	Thr	Ala	Thr	Lys	Gly	Glu	Ile	Ala	Val	Leu	Thr
		420						425					430		
Val	Gly	Asp	Glu	Gly	Ser	Asp	Ala	Ser	Phe	Ile	Glu	Gly	Leu	Arg	Ser
	435						440					445			
Glu	Leu	Pro	Leu	Lys	Thr	Phe	Arg	Met	Asp	Lys	Asn	Thr	Gly	Glu	Glu
	450					455					460				
Glu	Arg	Arg	Lys	Ile	Val	Lys	Glu	Leu	Gly	Asn	Tyr	Arg	Arg	Val	Val
465					470						475				480
Val	Cys	Ile	Thr	Val	Gln	Asp	Lys	Glu	Ala	Gly	Glu	Tyr	Arg	Ser	Phe
			485						490					495	
Phe	Ala	Gly	Phe	Arg	Pro	Gln	Ala	Pro	Val	Val	Tyr	Ala	Phe	Phe	Thr
		500						505					510		
Ser	Tyr	Arg	Ala	Leu	Ala	Ser	Leu	Glu	Glu	Ala	Ala	Ala	Arg	Ser	Ala
	515						520					525			
Ala	Val	Val	Leu	Ala	His	Ser	Gly	Glu	Glu	Asp	Leu	Gln	Arg	Tyr	Val

530	535	540
Ala Asp Val Val Leu Gly Lys Ala Ser Ala Thr Gly Arg Leu Ser Met		
545	550	555
Arg Ile Gly Asn Thr Phe Ala Ala Gly Ser Gly Val Asp Val Ile Ser		
	565	570
Gly Ser Pro Ala Gly Ile Ala Pro Glu Asp Tyr Gly Leu Lys Ser Tyr		
	580	585
Arg Leu His Arg Ile Asp Ser Val Val Ala Ala Gly Leu Ala Ala Lys		
	595	600
Ala Phe Pro Gly Cys Gln Val Leu Val Leu Arg His Gly Gln Pro Val		
	610	615
Tyr Asp Lys Cys Phe Gly Thr His Ser Val Thr Asp Thr Thr Pro Val		
	625	630
Arg Ala Thr Asp Leu Phe Asp Leu Ala Ser Leu Thr Lys Thr Ser Ala		
	645	650
Thr Leu Leu Ala Val Met Lys Leu Tyr Asp Gln Gly Arg Ile Glu Leu		
	660	665
Thr Asp Ala Val Ser Lys Tyr Val Pro Ala Leu Arg Ala Thr Asn Lys		
	675	680
Lys Asn Ile Thr Ile Arg Glu Leu Leu Leu His Glu Ser Gly Leu Val		
	690	695
Pro Tyr Ile Arg Phe Tyr Arg Asp Ala Ile Asp Glu Tyr Ser Val Thr		
	705	710
Gly Pro Phe Thr Gln Gly Phe Val Asp Glu Trp His His Thr Arg Met		
	725	730
Gly Glu Tyr Thr Tyr Ala Cys Ser Asp Phe Lys Phe Lys Lys Gly Leu		
	740	745
Val Ser Ala Thr Lys Thr Ser Gly His Thr Leu Gln Ile Ala Asp Gly		
	755	760
Leu Trp Leu Asp Lys Lys Phe Lys Ala Ala Met Met Lys Ser Ile Ala		
	770	775
Gln Ser Glu Leu Asp Arg Lys Arg Phe Val Tyr Ser Asp Ile Gly Phe		
	785	790
Ile Leu Leu Gln Gln Val Val Glu Ala Val Thr Gly Lys Thr Leu Asp		
	805	810
Ala Tyr Leu Val Ser Glu Phe Tyr Arg Pro Met Gly Leu Glu His Thr		
	820	825
Leu Phe His Pro Leu Asn Arg Tyr Lys Lys Ala Asp Ile Met Pro Thr		
	835	840
Ala Ala Asn Asp Tyr Leu Arg Arg Gln Asp Leu Cys Gly Tyr Val His		
	850	855
Asp Glu Ala Ala Ala Phe Met Gly Gly Val Ser Gly Asn Ala Gly Leu		
	865	870
Phe Ser Thr Ala Gln Glu Leu Gly Lys Ile Tyr Gln Met Ile Leu Asn		
	885	890
Glu Gly Glu Leu Asp Gly Lys Arg Tyr Leu Arg Pro Glu Thr Cys Arg		
	900	905
Ile Phe Thr Thr Glu Lys Ser Ala Val Ser His Arg Gly Leu Gly Tyr		
	915	920
Asp Lys Pro Asn Leu Lys Asp Pro Lys Ala Asn Ala Cys Ala Ser Ser		
	930	935
Ala Pro Ala Ser Val Tyr Gly His Thr Gly Phe Thr Gly Thr Cys Ala		
	945	950
Trp Val Asp Pro Glu Asn Asp Leu Val Tyr Ile Phe Leu Ser Asn Arg		
	965	970
Leu Cys Pro Asp Ala Trp Asn Gly Lys Leu Asn Ser Met Lys Ile Arg		
	980	985
Gln Ala Val Gln Glu Val Ile Tyr Gln Ser Leu Tyr Thr Pro Glu		
	995	1000
		1005

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 <212> PRT
 <213> B.fragilis

<400> 10159

Thr	Met	Asp	Leu	Ser	Ala	Ala	Lys	Leu	Tyr	Asn	Ser	Gln	Arg	Met	Asn
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Arg	Ala	Ile	Ser	Arg	Lys	Lys	Phe	Tyr	Phe	Trp	Lys	Ile	Ile	Leu	Glu
			20					25					30		
Gly	Pro	Gly	Lys	Lys	Trp	Glu	Pro	Asn	Arg	Arg	Thr	Leu	Lys	Asp	Leu
		35					40					45			
Gly	Met	Val	Glu	Glu	Pro	Tyr	Gly	Lys	Lys	Thr	Leu	Phe	Ser	Leu	Phe
	50					55					60				
Asp	Met	Thr	Glu	Ser	Asp	Gly	Gly	Lys	Arg	Gly	Leu	Glu	Lys	Trp	Leu
65					70					75					80
Val	His	Pro	Leu	Ser	Asp	Trp	Lys	Ala	Leu	His	Glu	Arg	Gln	Glu	Ala
				85					90					95	
Ile	Arg	Tyr	Pro	Asp	Phe	Pro	Glu	Ile	Arg	Ile	Cys	Arg	Glu	Glu	Leu
			100					105					110		
Asp	Phe	Ile	Glu	Phe	Tyr	Leu	Ser	Gln	Gly	Asp	Arg	Pro	Thr	Arg	Val
		115					120						125		
Ser	Tyr	Leu	Glu	Ser	Ala	Phe	Ser	Tyr	Ile	Phe	Arg	His	Phe	Arg	Ala
	130					135					140				
Thr	Pro	Glu	Arg	Tyr	Val	Ile	Arg	Arg	Gly	Thr	Lys	Leu	Leu	Glu	Asn
145					150						155				160
Val	Leu	Leu	Glu	Leu	Lys	Thr	Phe	Ala	Asp	His	Val	Thr	Ala	Leu	Ser
				165					170					175	
Pro	Arg	Leu	Ile	Arg	Asn	Ile	Ala	Ala	Thr	Ile	Ser	Glu	Ile	Tyr	Gln
			180					185					190		
Ala	Thr	Glu	Leu	Gly	Lys	Met	Val	Asp	Ser	Cys	Gly	Gln	Glu	Asp	Ser
		195					200					205			
Phe	Tyr	Arg	Thr	Asp	Arg	Leu	Asp	Tyr	Ile	Phe	Arg	Tyr	Arg	Arg	Asn
	210					215					220				
His	Thr	Ile	Ala	Ala	Leu	Leu	Ser	Ile	Val	Tyr	Gln	Leu	Asp	Ala	Ile
225					230					235					240
Arg	Thr	Val	His	Arg	Thr	Ala	Val	Thr	Lys	Gly	Trp	Cys	Phe	Pro	Ser
			245						250					255	
Phe	Thr	Asn	Asp	Ser	Lys	Phe	Met	Leu	Cys	Asn	Phe	Tyr	His	Pro	Gln
		260						265					270		
Val	Lys	Asp	Ala	Val	Ala	Asn	Asp	Trp	Glu	Met	Glu	Asn	Gly	Asn	Ile
		275					280					285			
Cys	Ile	Phe	Thr	Gly	Ser	Asn	Met	Ala	Gly	Lys	Ser	Thr	Thr	Leu	Lys
	290					295					300				
Ala	Ile	Ala	Ser	Ala	Val	Trp	Leu	Ala	His	Ala	Gly	Phe	Pro	Val	Pro
305					310					315					320
Ala	Ser	Ser	Met	Val	Cys	Pro	Met	Phe	Asp	Gly	Ile	Phe	Thr	Ser	Ile
			325						330					335	
Asn	Leu	Pro	Asp	Ser	Leu	Arg	Asp	Gly	Arg	Ser	Tyr	Phe	Tyr	Ala	Glu
		340						345					350		
Val	Leu	Arg	Val	Lys	Glu	Val	Leu	Glu	Gln	Ile	Asn	Lys	Gly	His	His
	355						360					365			
Cys	Phe	Val	Leu	Phe	Asp	Glu	Leu	Phe	Arg	Gly	Thr	Asn	Ala	Arg	Asp
	370					375					380				
Ala	Phe	Glu	Ala	Ser	Val	Ala	Val	Ala	Glu	Val	Leu	Lys	Ala	Lys	Ala
385					390					395					400
Tyr	Ser	Arg	Phe	Leu	Ile	Ser	Thr	His	Ile	Ile	Glu	Leu	Ala	Arg	Lys
				405					410					415	

Leu Asp Gly Asp Asp Ala Cys Cys Phe Tyr Tyr Leu Glu Ser Ala Ile
 420 425 430
 Val Asp Asp Glu Leu Ile Cys Asn His Lys Val Lys Pro Gly Ile Ser
 435 440 445
 Glu Ser Arg Val Gly Tyr Trp Ile Val Lys Lys Glu Leu Ala Gly Phe
 450 455 460
 Glu Lys
 465

<210> 10160
 <211> 310
 <212> PRT
 <213> B.fragilis

<400> 10160
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 1 5 10 15
 Ala Glu Glu Lys Gln Met Val Val Arg Trp Leu Asp Ala Asp Pro Gln
 20 25 30
 His Met Arg Glu Tyr Leu Ala Leu Arg Lys Leu His Asp Ile Thr Leu
 35 40 45
 Trp Gln Glu Lys Pro Ala Ala Thr Val Asp Lys Lys Lys Arg Leu Thr
 50 55 60
 Leu Pro Tyr Ile Arg Glu Phe Ile Lys Ile Ala Ala Ile Phe Leu Ile
 65 70 75 80
 Ala Val Thr Ser Val Tyr Phe Leu Ala Pro Glu Arg Gly Lys Asp Thr
 85 90 95
 Pro Asp Leu Lys Ala Ile His Val Pro Ser Gly Gln Arg Ala Glu Leu
 100 105 110
 Thr Leu Gly Asp Gly Thr Arg Val Cys Leu Asn Ser Asn Thr Thr Leu
 115 120 125
 Thr Phe Pro Asp His Phe Asp Arg Lys Glu Arg Arg Val Thr Leu Asp
 130 135 140
 Gly Glu Gly Tyr Phe Gln Val Ala Lys Asn Asp Lys Lys Pro Phe Ile
 145 150 155 160
 Val Gln Ala Lys Glu Tyr Glu Val Arg Val Leu Gly Thr Glu Phe Asn
 165 170 175
 Val Met Met Tyr Lys Asp Gln Asp Phe Phe Glu Thr Val Leu Leu Lys
 180 185 190
 Gly Ser Val Glu Val Asn Glu Thr Thr Gly Arg Lys Val Lys Leu
 195 200 205
 Gln Pro Asn Glu Arg Leu Phe Gly Lys Ala Gly Gln Leu Arg Lys Glu
 210 215 220
 Ser Ile Ser Glu Trp Asn Arg Ala Leu Trp Met Gln Gly Ile Leu Tyr
 225 230 235 240
 Phe Asp Asn Thr Arg Met Asp Glu Ile Ile Arg Gln Leu Gly Leu Tyr
 245 250 255
 Tyr Asp Val Lys Phe Ile Leu Glu Lys Glu Ser Leu Ala Asn Val Arg
 260 265 270
 Phe Thr Gly Lys Phe Arg Ile Arg Asp Gly Val Glu His Val Leu Lys
 275 280 285
 Val Leu Gln Leu Lys Cys Lys Phe Thr Tyr Gln Arg Asp Glu Asp Ser
 290 295 300
 Asn Thr Ile Thr Ile Asn
 305 310

<210> 10161
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 <212> PRT

<213> B.fragilis

<400> 10161

Val	Leu	Ile	Asn	Thr	Val	Tyr	Lys	Cys	Met	Lys	Asn	Thr	Leu	Ile	Lys
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Thr	Ser	Lys	Ile	Val	Asn	Lys	Ser	Ile	Ser	His	Thr	Met	Lys	Met	Ile
			20					25					30		
Val	Leu	Phe	Leu	Phe	Val	Phe	Ile	Ser	Gly	Val	Phe	Ala	Gly	Asn	Ala
		35					40					45			
Asn	Ser	Gln	Glu	Thr	Lys	Val	Ser	Ile	Ser	Lys	Asn	Asn	Lys	Pro	Ile
	50					55					60				
Arg	Glu	Ile	Leu	Gly	Glu	Ile	Glu	Arg	Gln	Thr	Asp	Tyr	Leu	Phe	Val
65					70					75					80
Tyr	Ser	Glu	Lys	Glu	Val	Asp	Val	Asn	Gln	Arg	Lys	Thr	Val	Asn	Val
				85					90					95	
Ser	Gln	Gln	Arg	Val	Ala	Asp	Val	Leu	Ser	Ser	Leu	Phe	Arg	Ser	Thr
			100					105					110		
Asn	Val	Gly	Tyr	Ala	Met	Glu	Gly	His	Asn	Ile	Met	Leu	Met	Ala	Lys
		115					120					125			
Thr	Thr	Gln	Thr	Asp	Ala	Ala	Gln	Gln	Lys	Arg	His	Ile	Thr	Gly	Val
	130					135					140				
Val	Lys	Asp	Ile	Lys	Gly	Glu	Thr	Ile	Ile	Gly	Ala	Asn	Ile	Met	Ile
145					150					155					160
Lys	Gly	Thr	Gly	Thr	Gly	Val	Ser	Thr	Asn	Ile	Asp	Gly	Glu	Phe	Ser
				165					170					175	
Ile	Glu	Ala	Ala	Ala	Gly	Asp	Glu	Leu	Ile	Val	Ser	Phe	Ile	Gly	Tyr
			180					185					190		
Leu	Thr	Gln	Thr	Ile	Lys	Ile	Asp	Ser	Gln	Lys	Thr	Leu	Asn	Ile	Lys
	195						200					205			
Leu	Leu	Glu	Asp	Thr	Lys	Thr	Leu	Glu	Glu	Val	Val	Val	Val	Gly	Tyr
	210					215				220					
Thr	Val	Gln	Thr	Lys	Ser	Ala	Val	Thr	Gly	Ser	Val	Ala	Val	Val	Lys
225				230						235					240
Ala	Asp	Lys	Leu	Lys	Asp	Val	Asn	Thr	Leu	Glu	Val	Gly	Ser	Met	Leu
				245					250					255	
Gln	Gly	Lys	Val	Ser	Gly	Val	Tyr	Val	Ser	Gly	Ser	Ser	Gly	Glu	Pro
			260					265					270		
Gly	His	Ala	Ser	Lys	Ile	Arg	Ile	Arg	Gly	Lys	Gly	Thr	Leu	Asn	Ser
	275					280						285			
Ser	Val	Ser	Pro	Leu	Trp	Val	Val	Asp	Gly	Val	Ile	Val	Gly	Glu	Asp
	290				295						300				
Pro	Gly	Leu	Asn	Pro	Asn	Glu	Ile	Asp	Asn	Ile	Ser	Val	Leu	Lys	Asp
305					310					315					320
Gly	Ser	Ala	Thr	Ala	Leu	Tyr	Gly	Ser	Arg	Ala	Ala	Asn	Gly	Val	Ile
				325					330					335	
Val	Val	Thr	Thr	Lys	Arg	Gly	Glu	Tyr	Asp	Ala	Asn	Lys	Tyr	Ser	Val
			340					345					350		
Ser	Ile	Asn	Ala	Gly	Val	Ser	Leu	Leu	Ser	Thr	Gly	Arg	Leu	Glu	Met
		355					360					365			
Met	Asn	Ser	Gln	Glu	Leu	Tyr	Asp	Tyr	Gln	Lys	Ser	Trp	Asn	Asn	Gln
	370					375					380				
Ser	Trp	Phe	Thr	Glu	Glu	Leu	Leu	Lys	His	Asn	Thr	Asp	Trp	Phe	Lys
385				390						395					400
Glu	Ala	Ser	Lys	Pro	Gly	Leu	Tyr	Thr	Asn	Ala	Asn	Ile	Thr	Tyr	Thr
				405					410					415	
Gly	Ser	Ser	Gly	Arg	Met	Arg	Ser	Phe	Val	Met	Ala	Asp	Tyr	Tyr	Arg
			420					425					430		
Glu	Glu	Gly	Ala	Ile	Lys	Asp	Phe	Thr	Leu	Asp	Arg	Phe	Thr	Phe	Arg
			435				440						445		

Ser	Asn	Asn	Asp	Val	Lys	Phe	Thr	Asp	Arg	Phe	Thr	Met	Ser	Thr	Lys
450						455					460				
Ile	Ser	Gly	Ser	Leu	Ser	Arg	Thr	Asp	Ser	Gln	Gln	Arg	Ser	Val	Tyr
465						470				475					480
Asn	Thr	Tyr	Leu	Tyr	Leu	Pro	Trp	Asp	Phe	Pro	Tyr	Asn	Glu	Asp	Gly
				485					490					495	
Ser	Ile	Arg	Ser	Gly	Gln	Glu	Gln	Asp	Trp	Arg	Gly	Arg	Asp	Gly	Ile
			500					505					510		
Asn	Asp	Met	Tyr	Asp	Leu	Gln	Trp	Asn	Trp	Ser	Arg	Ser	Lys	Lys	Leu
		515					520					525			
Thr	Val	Asp	Gly	Thr	Ile	Asn	Phe	Asn	Tyr	Gln	Ile	Thr	Asp	Trp	Leu
	530					535					540				
Arg	Phe	Glu	Ser	Asn	Asn	Tyr	Ile	Arg	Tyr	Ile	Ser	Asn	Arg	Ser	Glu
545					550					555					560
Ser	Tyr	Thr	Asp	Lys	Arg	Ser	Arg	Ser	Gly	Gln	Ser	Asp	Lys	Gly	Ser
				565					570					575	
Leu	Ser	Asn	Ser	Asn	Ser	Leu	Leu	Thr	Lys	Gln	Phe	Thr	Asn	Gln	Met
			580					585					590		
Ile	Arg	Phe	Glu	Lys	Ser	Phe	Gly	Lys	His	Lys	Val	Asn	Ala	Leu	Gly
		595					600					605			
Ala	Tyr	Glu	Tyr	Thr	Arg	His	Phe	Tyr	Glu	Ser	Thr	Ser	Ala	Glu	Gly
	610					615					620				
Arg	Gly	Ile	Gln	Pro	Gly	Arg	Glu	Ile	Leu	Asp	Val	Thr	Thr	Gly	Ile
625					630					635					640
Lys	Ser	Ile	Gly	Gly	Tyr	Lys	Asp	Ala	Ile	Ala	Thr	Gln	Ser	Ala	Leu
				645					650					655	
Phe	Asn	Ala	Asn	Tyr	Asp	Tyr	Asp	Asn	Arg	Tyr	Met	Gly	Gln	Val	Ser
			660					665					670		
Tyr	Arg	Met	Asp	Glu	Ser	Ser	Cys	Phe	Gly	Lys	Asn	Asn	Arg	Met	Gly
		675					680					685			
His	Phe	Phe	Thr	Val	Ser	Gly	Gly	Trp	Asn	Ile	Gln	Asn	Glu	Thr	Phe
	690					695					700				
Phe	Glu	Ser	Leu	Arg	Glu	Ser	Val	Asn	Gln	Leu	Lys	Val	Arg	Val	Ser
705					710					715					720
Tyr	Gly	Ser	Leu	Gly	Asn	Thr	Pro	Gly	Ala	Tyr	Tyr	Gly	His	Tyr	Pro
			725						730					735	
Leu	Tyr	Ser	Ser	Met	Met	Tyr	Asn	Asp	Glu	Val	Ala	Tyr	Phe	Pro	Ser
			740					745					750		
Gln	Met	Gly	Asn	Ala	Asp	Leu	Ser	Trp	Glu	Lys	Cys	Tyr	Thr	Thr	Asn
		755					760					765			
Ile	Gly	Ile	Asp	Ala	Arg	Phe	Phe	Asp	Arg	Phe	Gly	Val	Thr	Ile	Asp
	770					775					780				
Leu	Tyr	Asn	Lys	Asn	Thr	Ser	Asp	Leu	Leu	Tyr	Tyr	Ala	Pro	Leu	Pro
785					790					795					800
Asn	Ile	Ser	Gly	Tyr	Thr	Gly	Gln	Tyr	Lys	Asn	Val	Gly	Ala	Ile	Asn
				805					810					815	
Asn	Lys	Gly	Leu	Glu	Ile	Ser	Leu	Asn	Ala	Asp	Val	Ile	Arg	Thr	Ser
			820					825					830		
Lys	Phe	Gln	Trp	Thr	Ser	Asp	Phe	Asn	Ile	Gly	Phe	Asn	Arg	Asn	Arg
		835					840					845			
Val	Thr	Glu	Leu	Tyr	Gly	Arg	Lys	Pro	Glu	Leu	Lys	Gly	Leu	Lys	Arg
	850					855					860				
Leu	Glu	Glu	Arg	Arg	Asp	Met	Asp	Glu	Trp	Tyr	Leu	Lys	Glu	Trp	Ala
865					870					875					880
Gly	Val	Asp	Pro	Ala	Asn	Arg	Ser	Pro	Leu	Trp	Tyr	Thr	Pro	Arg	Trp
				885					890					895	
Glu	Trp	Pro	Lys	Ala	Gln	Leu	Pro	Asp	Ser	Tyr	Asn	Lys	Ala	Asp	Arg
			900					905					910		
Val	Tyr	Cys	Gly	Ser	Ala	Ala	Arg	Lys	Phe	Thr	Gly	Gly	Trp	Met	Asn

915	920	925
Ser Phe Ser Tyr Lys Gly Phe Thr Leu Thr Ala Asn Phe Asp Phe Val		
930	935	940
Tyr Gly Asn Leu Leu Tyr Asn Gln Ser Arg Glu Leu Leu Asp Ser Asp		
945	950	955
Gly Ala Tyr Ala Asp Tyr Asn Ser Met Lys Leu Lys Ser Gly Trp Lys		
965	970	975
Arg Trp Glu Lys Glu Gly Asp Ile Ala Thr His Pro Lys Ala Ile Asn		
980	985	990
Gly Gly Asn Lys Asn Ser Asn Lys Ser Ser Ser Arg Tyr Leu Glu Lys		
995	1000	1005
Gly Asn Tyr Phe Ser Leu Arg Asn Leu Ser Leu Gly Tyr Ser Ile Pro		
1010	1015	1020
Glu Lys Leu Cys Gly Lys Leu Gly Leu Gln Arg Val Asn Val Ser Cys		
1025	1030	1035
Ser Ala Asp Asn Leu Phe Thr Leu Thr Pro Phe Ser Gly Val Ser Pro		
1045	1050	1055
Gln Leu Ser Asp Ser Ser Thr Asp Gly Tyr Ala Gly Thr Ile Tyr Pro		
1060	1065	1070
Leu Ser Arg Arg Ile Val Leu Gly Leu Asn Val Ser Phe		
1075	1080	1085

<210> 10162

<211> 343

<212> PRT

<213> B.fragilis

<400> 10162

Phe Val Cys Asn Lys His Leu Ile Leu Thr Asn Pro Leu Asn Lys Ser		
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Ile Met Asn Ser Ser Met Glu Lys Pro Tyr Val Val Gly Ile Asp Ile		
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Gly Gly Thr Asn Thr Val Phe Gly Ile Val Asp Ala Arg Gly Thr Ile		
35	40	45
Ile Ala Ser Gly Ala Val Lys Thr Gln Val Tyr Pro Thr Val Glu Glu		
50	55	60
Tyr Ala Asp Glu Val Cys Lys Asn Leu Leu Pro Leu Ile Ile Ala Asn		
65	70	75
Gly Gly Val Asp Lys Ile Lys Gly Ile Gly Ile Gly Ala Pro Asn Gly		
85	90	95
Asn Tyr Tyr Thr Gly Thr Ile Glu Phe Ala Pro Asn Leu Pro Trp Lys		
100	105	110
Gly Val Leu Pro Leu Ala Ser Met Phe Glu Glu Arg Leu Gly Ile Pro		
115	120	125
Thr Ala Leu Thr Asn Asp Ala Asn Ala Ala Ala Val Gly Glu Met Thr		
130	135	140
Tyr Gly Ala Ala Arg Gly Met Lys Asp Phe Ile Met Ile Thr Leu Gly		
145	150	155
Thr Gly Val Gly Ser Gly Ile Val Ile Asn Gly Gln Val Val Tyr Gly		
165	170	175
His Asp Gly Phe Ala Gly Glu Leu Gly His Val Ile Val Arg Arg Asp		
180	185	190
Gly Arg Ile Cys Gly Cys Gly Arg Lys Gly Cys Leu Glu Thr Tyr Cys		
195	200	205
Ser Ala Thr Gly Val Ala Arg Thr Ala Arg Glu Phe Leu Ala Ala Arg		
210	215	220
Thr Asp Ala Ser Leu Leu Arg Asn Ile Pro Ala Glu Ser Ile Val Ser		
225	230	235
Lys Asp Val Tyr Asp Ala Ala Val Gln Gly Asp Lys Leu Ala Gln Glu		
		240

245 250 255
 Ile Phe Glu Phe Thr Gly Asn Ile Leu Gly Glu Ala Leu Ala Asp Ala
 260 265 270
 Ile Ala Phe Ser Ser Pro Glu Ala Ile Ile Leu Phe Gly Gly Leu Ala
 275 280 285
 Lys Ser Gly Asp Tyr Ile Met Lys Pro Ile Met Lys Ala Met Glu Asn
 290 295 300
 Asn Leu Leu Asn Ile Tyr Lys Gly Lys Ala Lys Leu Leu Val Ser Glu
 305 310 315 320
 Leu Lys Asp Ser Asp Ala Ala Val Leu Gly Ala Ser Ala Leu Ala Trp
 325 330 335
 Glu Leu Lys Asp Leu Arg Asp
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 <213> B.fragilis

<400> 10163
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 Lys Thr Thr Val Tyr Glu Thr Val Thr Pro Glu Ile Ala Asp Leu Glu
 35 40 45
 Lys Thr Thr Val Ala Thr Gly Lys Val Glu Pro Arg Asp Glu Val Leu
 50 55 60
 Ile Lys Pro Gln Ile Ser Gly Ile Ile Ser Glu Val Tyr Lys Glu Ala
 65 70 75 80
 Gly Gln Thr Ile Lys Gln Gly Glu Val Ile Ala Lys Val Lys Val Ile
 85 90 95
 Pro Glu Leu Gly Gln Leu Asn Ser Ala Glu Ser Arg Val Arg Val Ala
 100 105 110
 Glu Ile Ser Thr Ala Gln Ala Glu Thr Asp His Glu Arg Ile Lys Lys
 115 120 125
 Leu Tyr Asn Asp Lys Leu Ile Ser Arg Glu Asp Tyr Glu Lys Ser Glu
 130 135 140
 Val Glu Ile Lys Lys Ala Arg Glu Glu Leu Gln Thr Ala Lys Asp Ala
 145 150 155 160
 Leu Glu Ile Ile Lys Glu Gly Ile Thr Lys Asn Ser Ala Ser Phe Ser
 165 170 175
 Ser Thr Leu Ile Arg Ser Thr Ile Asp Gly Leu Ile Leu Asp Val Pro
 180 185 190
 Ile Lys Val Gly Asn Ser Val Ile Met Ser Asn Thr Phe Asn Asp Gly
 195 200 205
 Thr Thr Ile Ala Thr Val Ala Asn Met Asn Asp Leu Ile Phe Lys Gly
 210 215 220
 Lys Ile Asp Glu Thr Glu Val Gly Arg Ile His Glu Gly Met Pro Val
 225 230 235 240
 Lys Leu Thr Ile Gly Ala Leu Gln Asn Leu Thr Phe Asp Ala Glu Leu
 245 250 255
 Glu Tyr Ile Ser Pro Lys Gly Val Glu Asn Gly Ala Asn Gln Phe
 260 265 270
 Glu Ile Lys Ala Ala Val His Ala Pro Asp Ser Val Gln Ile Arg Ser
 275 280 285
 Gly Tyr Ser Ala Asn Ala Glu Ile Val Leu Gln Arg Ala Gln Lys Val
 290 295 300
 Leu Ala Val Pro Glu Gly Ile Ile Glu Phe Ser Gly Asp Ser Thr Phe

305		310		315		320									
Val	Trp	Val	Met	Thr	Asp	Ser	Ile	Pro	Glu	Gln	Lys	Phe	Glu	Arg	Arg
			325						330					335	
Gln	Ile	Lys	Thr	Gly	Met	Ser	Asp	Gly	Ile	Lys	Leu	Glu	Ile	Lys	Glu
			340					345					350		
Gly	Leu	Thr	Gly	Lys	Glu	Lys	Val	Arg	Ala	Ser	Glu	Lys	Lys	Asp	Lys
		355					360					365			

<210> 10164

<211> 450

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (83)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10164

Gly	Lys	Tyr	Glu	Ser	Pro	Thr	Met	His	Asn	Met	Arg	Asn	Lys	Ile	Leu
1				5					10					15	
Ile	Asn	Leu	Leu	Ile	Leu	Thr	Gly	Leu	Ser	Ala	Tyr	Thr	Ala	Gln	Ala
		20					25						30		
Gln	Glu	Gly	Trp	Thr	Leu	Arg	Arg	Cys	Ile	Asp	Tyr	Ala	Ile	Glu	His
		35				40					45				
Asn	Ile	Asn	Val	Gln	Gln	Thr	Ala	Asn	Ser	Ala	Glu	Gln	Ser	Lys	Val
	50					55					60				
Glu	Val	Asn	Thr	Ala	Lys	Trp	Ala	Arg	Leu	Pro	Asn	Leu	Ser	Gly	Ser
65					70					75				80	
Ala	Ser	Xaa	Asn	Trp	Ser	Trp	Gly	Arg	Thr	Ala	Ser	Pro	Val	Asp	Asn
			85					90						95	
Thr	Tyr	Asn	Asp	Ile	Asn	Ser	Gly	Ser	Ser	Ser	Phe	Ser	Leu	Gly	Thr
		100					105						110		
Asn	Ile	Pro	Leu	Phe	Thr	Gly	Leu	Glu	Leu	Pro	Asn	Gln	Tyr	Ala	Leu
		115				120						125			
Thr	Lys	Leu	Asn	Leu	Lys	Ala	Ala	Ile	Glu	Asp	Leu	Asn	Lys	Ala	Lys
	130					135					140				
Glu	Asp	Leu	Ala	Ile	Asn	Val	Thr	Ser	Ala	Tyr	Leu	Gln	Val	Leu	Phe
145					150					155				160	
Asn	Gln	Glu	Leu	Ser	Lys	Val	Ala	Gln	Ser	Gln	Val	Gly	Leu	Ser	Lys
			165					170					175		
Glu	Gln	Leu	Ser	Arg	Ile	Thr	Arg	Leu	His	Glu	Val	Gly	Lys	Ala	Ser
		180					185						190		
Pro	Ala	Glu	Val	Ala	Glu	Ala	Lys	Ala	Arg	Val	Ala	Gln	Asp	Glu	Met
		195					200					205			
Ser	Ala	Val	Gln	Ala	Asp	Asn	Asn	Tyr	Arg	Leu	Ala	Leu	Leu	Asp	Leu
	210					215					220				
Ser	Gln	Leu	Leu	Glu	Leu	Pro	Thr	Pro	Glu	Asn	Phe	Ser	Leu	Ala	Thr
225					230					235				240	
Pro	Asp	Thr	Glu	Leu	Glu	Phe	Ser	Pro	Leu	Thr	Ser	Pro	Asp	Glu	Ile
			245					250					255		
Tyr	Asn	Gln	Ala	Met	Leu	Tyr	Lys	Pro	Gly	Ile	Lys	Ala	Ala	Glu	Tyr
		260					265					270			
Arg	Leu	Glu	Gly	Ser	Glu	Lys	Asn	Val	Arg	Ile	Ala	Lys	Ser	Ser	Tyr
	275					280						285			
Tyr	Pro	Gln	Leu	Ser	Phe	Ser	Ala	Gly	Leu	Gly	Thr	Asn	Phe	Tyr	Thr
	290					295				300					
Val	Asn	Gly	Asn	Ala	Gly	Ser	Asn	Phe	Gly	Asn	Gln	Met	Lys	Asn	Asn
305					310					315				320	

Leu Asn Lys Tyr Ala Gly Phe Ser Leu Asn Ile Pro Leu Phe Asn Arg
 325 330 335
 Leu Ala Thr Arg Asn Arg Val Arg Thr Ala Arg Leu Gln Gln Thr Asn
 340 345 350
 Leu Ala Leu Gln Leu Asp Asn Thr Lys Lys Val Leu Tyr Lys Glu Ile
 355 360 365
 Gln Gln Ala Trp Tyr Asn Ala Ile Ala Ala Glu Ser Lys Phe Lys Ser
 370 375 380
 Ser Glu Ser Ala Val Glu Ala Ser Gln Glu Ser Phe Arg Leu Met Ser
 385 390 395 400
 Glu Lys Phe Asp Asn Gly Lys Ala Thr Ser Val Glu Tyr Asn Glu Ser
 405 410 415
 Lys Leu Asn Leu Thr Lys Ala Leu Ser Asp Arg Ile Gln Ala Lys Tyr
 420 425 430
 Asp Tyr Leu Phe Arg Thr Lys Ile Leu Asp Phe Tyr Lys Gly Gln Pro
 435 440 445
 Ile Glu
 450

<210> 10165
 <211> 119
 <212> PRT
 <213> B.fragilis

<400> 10165
 Thr Thr Met Asp Leu Ile Lys Ile Ala Glu Glu Ala Phe Ala Thr Gly
 1 5 10 15
 Lys Gln His Pro Ser Phe Lys Ala Gly Asp Thr Val Thr Val Ala Tyr
 20 25 30
 Arg Ile Ile Glu Gly Asn Lys Glu Arg Val Gln Leu Tyr Arg Gly Val
 35 40 45
 Val Ile Lys Ile Ala Gly His Gly Glu Lys Lys Arg Phe Thr Val Arg
 50 55 60
 Lys Met Ser Gly Thr Val Gly Val Glu Arg Ile Phe Pro Ile Glu Ser
 65 70 75 80
 Pro Ala Ile Asp Ser Ile Glu Val Asn Lys Val Gly Lys Val Arg Arg
 85 90 95
 Ala Lys Leu Tyr Tyr Leu Arg Ala Leu Thr Gly Lys Lys Ala Arg Ile
 100 105 110
 Lys Glu Lys Arg Val Asn Gly
 115

<210> 10166
 <211> 117
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (110), (111), (112), (117)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 10166
 Ile His Ser Leu His Ile Glu Met Gly Lys Tyr Arg Thr Lys Gly Ser
 1 5 10 15
 Ile Ala Leu Ile Ile Thr Gly Ser Val Leu Ile Leu Val Leu Ala Gly
 20 25 30
 Leu Tyr Leu Gly Arg Asn Gly Ile Leu Cys Arg Thr Ala Asp Lys Arg
 35 40 45

```

Ile Leu Tyr Ala Glu Gln Lys Tyr Gly Leu Ser Ile Cys Tyr Glu Asp
 50                      55                      60
Leu Arg Met Lys Gly Leu Asn Glu Ile Glu Leu Lys Asn Leu Ser Ile
65                      70                      75                      80
Val Pro Arg Asn Arg Asp Thr Leu Leu Thr Leu His Thr Leu Asn Met
                      85                      90                      95
His Leu Asn Phe Trp Lys Leu Ile Arg Gly Ser Leu His Xaa Xaa Xaa
                      100                      105                      110
Gln Gln Arg Ser Xaa
                      115

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<210> 10167
 <211> 266
 <212> PRT
 <213> B.fragilis

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<400> 10167
Val Leu Lys Asp Met Lys Gln Asn Tyr Ala Lys Ile Ile Ser Gly Phe
 1                      5                      10                      15
Ile Leu Ala Gly Leu Leu Thr Phe Ser Ser Cys Gln Ser Thr His Glu
20                      25                      30
Met Ala Lys Thr Asp Tyr Gln Ile Ala Lys Val Glu Gly Arg Met Ile
35                      40                      45
Asp Ile Asp Ala Lys Trp Asp Thr His Pro Asp Ala Asp Ala Val Ala
50                      55                      60
Ile Leu Lys Pro Tyr Lys Glu Lys Ile Asp Asn Met Met Tyr Glu Val
65                      70                      75                      80
Ile Gly Ser Ser Glu Gln Lys Met Asp Lys Gly His Pro Glu Ser Leu
85                      90                      95
Leu Ser Asn Leu Val Ala Glu Val Leu Arg Gln Ala Ala Thr Lys Val
100                      105                      110
Gln Asp Lys Pro Ala Asp Met Gly Leu Val Asn Met Gly Gly Leu Arg
115                      120                      125
Asn Ile Leu Pro Ala Gly Asp Ile Thr Val Gly Thr Val Tyr Glu Ile
130                      135                      140
Leu Pro Phe Glu Asn Ser Leu Cys Val Met Lys Met Lys Gly Thr His
145                      150                      155                      160
Leu Lys Ala Leu Leu Thr Ser Ile Ala Ser Leu Lys Gly Glu Gly Val
165                      170                      175
Ser Gly Ile Arg Met Glu Ile Thr Lys Asp Gly Lys Leu Leu Asn Ala
180                      185                      190
Thr Val Gly Gly Gln Pro Ile Asp Asp Asn Lys Leu Tyr Thr Val Ala
195                      200                      205
Thr Ile Asp Tyr Leu Ala Asp Gly Asn Gly Ser Met Glu Ala Phe Leu
210                      215                      220
Gln Ala Asp Asp Arg Val Cys Pro Glu Gly Ala Thr Leu Arg Gly Leu
225                      230                      235                      240
Phe Leu Asp Tyr Val Arg Gln Gln Thr Ala Ala Gly Lys Lys Ile Thr
245                      250                      255
Ser Ala Leu Asp Gly Arg Ile Thr Val Lys
260                      265

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<210> 10168
 <211> 724
 <212> PRT
 <213> B.fragilis

<400> 10168
 Ser Thr Met Leu Lys Arg Thr Phe Ile Leu Ile Gly Leu Val Leu Ser

1		5		10		15									
Phe	Cys	Ser	Leu	Pro	Ala	Gln	Glu	Leu	Ile	Gln	Ile	Thr	Thr	Arg	Asn
		20						25					30		
Thr	Ala	Leu	Val	Phe	Arg	Val	Ala	Asn	Gln	Ser	Leu	Arg	Gln	Val	Tyr
		35					40					45			
Tyr	Gly	Pro	Arg	Leu	Ala	Asp	Thr	Asp	Val	Leu	Gln	Lys	Gln	Gly	Asn
	50					55					60				
Asn	Phe	Pro	Ala	Tyr	Ser	Thr	Tyr	Gly	Met	Gly	Glu	Gln	Asn	Glu	Val
65				70					75					80	
Ala	Leu	His	Ala	Val	His	Ala	Asp	Gly	Asn	Thr	Ser	Thr	Leu	Leu	Asn
			85						90					95	
Phe	Glu	Asn	Val	Lys	Gln	Glu	Ser	Pro	Glu	Pro	Gly	Ile	Thr	Leu	Thr
		100						105					110		
Thr	Ile	Ser	Leu	Lys	Asp	Pro	Leu	Tyr	Pro	Phe	Gln	Val	Lys	Leu	Phe
	115					120						125			
Tyr	Lys	Ala	Tyr	Glu	Glu	Ser	Asp	Leu	Ile	Glu	Gln	Trp	Thr	Ile	Tyr
	130					135					140				
Gln	His	Thr	Glu	Lys	Lys	Pro	Val	Thr	Leu	Tyr	Gln	Phe	Ala	Ser	Ala
145				150					155					160	
Gln	Leu	Ser	Phe	Lys	Ser	Ser	Ser	Tyr	Arg	Leu	Thr	His	Phe	Ala	Gly
			165					170						175	
Asp	Trp	Ala	Gly	Glu	Cys	Asn	Met	Ser	Glu	Val	Glu	Leu	Thr	Glu	Gly
		180						185					190		
Ile	Lys	Val	Ile	Asp	Ser	Lys	Leu	Gly	Thr	Arg	Ala	Thr	Phe	Phe	Ala
	195					200						205			
His	Pro	Met	Cys	Leu	Leu	Ser	Leu	Asn	Gly	Arg	Met	Thr	Glu	Asp	Asn
	210					215					220				
Gly	Glu	Val	Ile	Gly	Met	Ala	Leu	Ala	Trp	Pro	Ala	Asn	Phe	Lys	Leu
225				230					235					240	
Glu	Phe	Glu	Lys	Asn	Asn	Asn	Gln	Glu	Leu	Arg	Val	Leu	Ala	Gly	Met
			245					250					255		
Asn	Pro	Tyr	Ala	Ser	His	Tyr	Lys	Leu	Lys	Lys	Gly	Asp	Val	Phe	Gln
		260						265				270			
Thr	Pro	Ser	Phe	Leu	Tyr	Thr	Tyr	Ser	Thr	Lys	Gly	Asn	Gly	Gln	Val
	275					280						285			
Ser	Arg	Asn	Phe	His	Arg	Trp	Ala	Arg	Lys	Tyr	Gly	Leu	Arg	His	Gly
	290					295				300					
Glu	Asn	Ser	Arg	Tyr	Thr	Leu	Met	Asn	Asn	Trp	Glu	Ala	Thr	Tyr	Phe
305				310					315					320	
Asn	Phe	Asn	Glu	Pro	Lys	Leu	Lys	Ser	Ile	Ile	Glu	Asp	Ala	Ala	Gly
			325					330					335		
Met	Gly	Phe	Glu	Leu	Phe	Leu	Leu	Asp	Asp	Gly	Trp	Phe	Gly	Gln	Lys
		340						345				350			
His	Pro	Arg	Asn	Asn	Asp	Asp	Ala	Gly	Leu	Gly	Asp	Trp	Val	Val	Asn
	355					360					365				
Lys	Glu	Lys	Leu	Pro	Asn	Gly	Leu	Gly	Trp	Leu	Val	Lys	Gln	Cys	Thr
	370					375					380				
Asp	Asn	Asp	Ile	Lys	Phe	Gly	Ile	Trp	Val	Glu	Pro	Glu	Met	Val	Asn
385				390					395					400	
Pro	Gln	Ser	Glu	Leu	Phe	Glu	Lys	His	Pro	Asp	Trp	Val	Ile	Gln	Gln
			405					410					415		
Pro	Gly	Arg	Glu	His	Ile	Leu	Phe	Arg	Gln	Leu	Val	Leu	Asp	Leu	
	420					425					430				
Ser	Asn	Pro	Glu	Val	Gln	Glu	Phe	Val	Tyr	Lys	Ser	Val	His	Asp	Ile
	435					440					445				
Leu	Lys	Asp	Asn	Pro	Gln	Ile	Ala	Phe	Val	Lys	Trp	Asp	Cys	Asn	Arg
	450				455				460						
Ala	Val	Thr	Asn	Pro	Gly	Ser	Thr	Tyr	Leu	Pro	Ala	Asp	Glu	Gln	Ser
465				470					475					480	

His Ile Trp Ile Glu Tyr Gly Arg Gly Leu Leu Asn Val Phe Lys Lys
 485 490 495
 Val Arg Asp Ser His Pro Asp Val His Phe Met Leu Cys Ser Gly Gly
 500 505 510
 Gly Gly Arg Leu Asp Tyr Gly Ser Leu Arg Tyr Phe Glu Glu Tyr Trp
 515 520 525
 Pro Ser Asp Asn Thr Asp Ala Leu Gln Arg Ile Leu Ile Gln Trp Gly
 530 535 540
 Asn Ser Gln Phe Phe Pro Ser Ile Ala Met Cys Cys His Val Ser Ala
 545 550 555 560
 Ser Pro Asn His Gln Thr Gly Arg Thr Thr Pro Leu Lys Phe Arg Phe
 565 570 575
 Asp Val Ala Met Gln Gly Ala Leu Gly Met Asp Leu Gln Pro Ser Thr
 580 585 590
 Met Asn Glu Lys Glu Val Ile Phe Ala Lys Glu Ala Ile Lys Thr Tyr
 595 600 605
 Glu Ser Ile Arg Asn Ile Val Phe Thr Gly Asp Leu Tyr Arg Ile Leu
 610 615 620
 Ser Pro Tyr Glu Gly Asn Arg Thr Ser Met Met Tyr Val Leu Pro Asp
 625 630 635 640
 Lys Ser Arg Ala Val Phe Tyr Ala Tyr Gln Leu Lys Ser His Ile Gly
 645 650 655
 Glu Val Ser Ala Pro Met Arg Phe Lys Gly Leu Ser Pro Asp Lys Lys
 660 665 670
 Tyr Asn Val Lys Glu Leu Asn Ile Tyr Pro Gly Ser Arg Ala Ala Thr
 675 680 685
 Gly Ser Ala Asn Gly Gln Ser Phe Ser Gly Asp Phe Leu Met Asn Gln
 690 695 700
 Gly Leu Pro Ile Gly Leu Ser Gly Asp Tyr Ser Ser Ala Val Ile Glu
 705 710 715 720
 Leu Glu Gln Gln

<210> 10169

<211> 1029

<212> PRT

<213> B.fragilis

<400> 10169

Val Leu Ile Gly Leu Gly Ile Ser Ala Gly Leu Leu Ser Pro Asn Tyr
 1 5 10 15
 Val Phe Ala Thr Ser Leu Glu Thr Tyr Glu Asn Gln Ser Val Ala Ala
 20 25 30
 Val Gln Gln Ala Arg Lys Ile Thr Gly Thr Leu Thr Asp Ala Val Gly
 35 40 45
 Glu Pro Ile Ile Gly Ala Thr Val Leu Glu Lys Gly Asn Pro Ser Asn
 50 55 60
 Gly Thr Ile Thr Asp Ile Asn Gly Lys Phe Ser Leu Ser Val His Pro
 65 70 75 80
 Asn Ala Val Ile Ser Ile Ser Tyr Ile Gly Tyr Ile Thr Gln Asn Ile
 85 90 95
 Lys Ile Thr Asn Gln Thr Ser Leu Lys Val Val Met Met Asp Asp Thr
 100 105 110
 Gln Ala Leu Glu Glu Val Val Val Gly Tyr Gly Ser Gln Lys Lys
 115 120 125
 Ala Asn Leu Thr Gly Ala Val Ser Ser Val Lys Met Asp Glu Val Leu
 130 135 140
 Gly Asp Arg Pro Ile Leu Asn Ala Ser Asp Ala Leu Gln Gly Ala Val
 145 150 155 160

Pro Gly Leu Phe Val Ser Asn Gly Gly Asn Ala Pro Gly Thr Ser Lys
 165 170 175
 Ser Phe Gln Ile Arg Gly Ala Tyr Ser Val Gly Val Lys Asn Ser Asp
 180 185 190
 Gly Ser Tyr Gly Asn Thr Ile Lys Pro Leu Val Leu Ile Asp Asn Val
 195 200 205
 Glu Gly Asp Leu Asp Met Val Asn Pro Glu Asp Ile Glu Ser Ile Ser
 210 215 220
 Val Leu Lys Asp Ala Ala Ser Ala Ala Ile Tyr Gly Ala Arg Ala Ala
 225 230 235 240
 Gly Gly Val Ile Val Val Thr Thr Lys Arg Pro Lys Gly Ala Ala Lys
 245 250 255
 Phe Ser Leu Asn Tyr Asn Asn Asn Phe Ala Phe Gly Thr Ala Val Asn
 260 265 270
 Leu Pro Lys Gln Ala Pro Leu Met Asp Tyr Leu Gln Ala Tyr Leu Asp
 275 280 285
 Cys Gly Tyr Ser Asp Ala Tyr Trp Ser Leu Gly Ser Pro Ser Val Ser
 290 295 300
 Lys Trp Met Glu Tyr Leu Ser Glu Tyr Gln Lys Asn Pro Ser Ala Phe
 305 310 315 320
 Asn Thr Val Gly Asp Gly Ile Tyr Met Asp Glu Ser Gly Val Pro Tyr
 325 330 335
 Tyr Leu Asn Glu Lys Asp Leu Tyr Lys Asn Phe Met Glu Thr Ser Phe
 340 345 350
 Gln Met Thr His Asn Ile Ser Ala Ser Gly Gly Thr Asp Lys Leu Arg
 355 360 365
 Tyr Arg Ile Ser Gly Gly Tyr Thr Ser Asn Asp Gly Val Leu Val Ser
 370 375 380
 Asp Arg Asp Lys Phe Glu Arg Met Asn Ile Asn Thr Phe Ile Ser Ala
 385 390 395 400
 Asp Val Thr Asn Trp Phe Thr Gln Glu Val Thr Met Ser Tyr Ala His
 405 410 415
 Ser Leu Gln Thr Ser Pro Gly Gly Met Gly Gly Val Tyr Asn Thr Arg
 420 425 430
 Leu Val Ser Tyr Tyr Pro Glu Gly Asp Leu Pro Ala Ser Val Asn Thr
 435 440 445
 Leu Ala Asn Glu Asp Leu Pro Leu Phe Thr Pro Arg Asn Gln Ile Leu
 450 455 460
 Leu Ser Asn Pro Val Asn Asn Asn Asp Asn Pro Arg Ile Phe Leu
 465 470 475 480
 Lys Ser Ile Leu Lys Pro Leu Lys Gly Leu Glu Ala Val Phe Glu Tyr
 485 490 495
 Thr Phe Asp Lys Asn Ile Tyr Asp Tyr His Trp Tyr Thr Gly Gln Tyr
 500 505 510
 Asp Tyr Thr Thr Ile Gln Gly Gly Ser Ser Lys Ser Phe Val Asp Asp
 515 520 525
 Tyr Leu Arg Lys Tyr Lys Gln His Thr Asn Tyr Asn Ala Ile Asn Val
 530 535 540
 Tyr Ala Thr Tyr Ser Lys Lys Phe Gly Asp His Asn Phe Lys Val Met
 545 550 555 560
 Ala Gly Phe Asn Gln Glu Ser Ser Tyr Gln Glu Thr Leu Asp Ala Tyr
 565 570 575
 Ser Tyr Asn Gln Ala Val Ile Asp Val Pro Ala Met Gly Ser Gly Thr
 580 585 590
 Gly Thr Ile Lys Ala Thr Asp Ser Tyr Ser Glu Tyr Ala Val Arg Gly
 595 600 605
 Gly Phe Phe Arg Val Asn Tyr Asn Tyr Gln Asp Lys Tyr Leu Leu Glu
 610 615 620
 Val Asn Gly Arg Tyr Asp Gly Ser Ser Lys Phe Pro Lys Ser Ser Arg

6015

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625          630          635          640
Phe Gly Phe Phe Pro Ser Val Ser Ala Gly Trp Gln Ile Ala Gln Glu
645          650          655
Lys Phe Met Glu Ser Thr Arg Asn Trp Leu Asp Gly Leu Lys Ile Arg
660          665          670
Ala Ser Tyr Gly Val Ile Gly Asn Gln Asn Val Asn Pro Tyr Thr Phe
675          680          685
Thr Pro Thr Met Ser Val Ser Asn Lys Ser Thr Ser Trp Ile Ile Asp
690          695          700
Asn Thr Tyr Val Thr Ser Ile Ser Ser Leu Pro Ala Leu Val Ser Gln
705          710          715          720
Asn Phe Thr Trp Glu Lys Val Gly Thr Val Asn Val Gly Leu Asp Ile
725          730          735
Asn Leu Phe Asn Asn Arg Leu Asn Gly Val Phe Glu Trp Tyr Gln Arg
740          745          750
Asn Thr Asn Gly Met Leu Ala Pro Gly Val Gln Leu Pro Ala Val Val
755          760          765
Gly Ala Ser Ala Pro Tyr Gln Asn Thr Ala Asp Met Arg Thr Arg Gly
770          775          780
Trp Glu Leu Ser Leu Asn Trp Arg Asp Gln Ile Gly Lys Val Gly Tyr
785          790          795          800
Arg Leu Gly Phe Asn Leu Ser Asp Tyr Lys Ser Lys Ile Thr Lys Tyr
805          810          815
Asp Asp Asn Ala Thr Thr Lys Leu Leu Ser Ser Phe Tyr Pro Gly Gln
820          825          830
Val Met Gly Glu Ile Trp Gly Tyr Ile Ala Asp Gly Tyr Tyr Ser Val
835          840          845
Asp Asp Phe Glu Asp Thr Ser Ser Trp Lys Leu Lys Glu Gly Ile Thr
850          855          860
Ser Ile Asn Gly Tyr Asn Val Arg Pro Gly Asp Val Lys Phe Lys Asn
865          870          875          880
Leu Arg Asp Asp Glu Ser Ser Thr Asn Val Ile Thr Ser Gly Asp Asn
885          890          895
Thr Phe Asp Asn Pro Gly Asp Arg Lys Val Ile Gly Asn Thr Thr Pro
900          905          910
Arg Tyr Gln Tyr Gly Ile Asn Leu Gly Ala Asn Tyr Ala Gly Phe Asp
915          920          925
Leu Asn Val Ile Leu Gln Gly Thr Gly Lys Arg Asp Tyr Trp Ile Ser
930          935          940
Asn Val Leu Thr Phe Pro Met Asn Gly Asp Asn Phe Ile Pro Leu Phe
945          950          955          960
Asp Gly Leu Ser Asp Tyr Trp Met Pro Lys Asp Pro Asp Asn Gly Asp
965          970          975
Trp Thr Ala Val Asn Pro Asn Ala Lys Tyr Pro Arg Leu Tyr Gly Asn
980          985          990
Arg Gly Asn Ser Gly Ser Asn Leu Arg Gln Ser Asp Lys Tyr Leu Ser
995          1000          1005
Asp Ala Ser Tyr Leu Arg Ile Lys Asn Ile Thr Leu Ser Tyr Asn Val
1010          1015          1020
Phe Thr Thr Gly Leu
1025

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<210> 10170

<211> 202

<212> PRT

<213> B.fragilis

<400> 10170

Ile Ile Asp Ile Phe Val Asp Tyr Phe Asn Leu Lys Thr Thr Thr Ser

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1           5           10           15
Met Arg Ile Lys Leu Leu Phe Leu Ile Ser Ile Leu Phe Cys Thr Gly
                20                25                30
Ser Tyr Ala Gln Glu Thr Val Thr Glu Pro Asp Phe Ile Gly Glu Val
                35                40                45
Leu Val Leu Asn Pro Asp Asn Ser Thr Thr Pro Leu Glu Lys Ala Thr
                50                55                60
Val Lys Ile Lys Thr Lys Ala Asn Ala Ser Ile Tyr Leu Val Gly Met
65                70                75                80
Gly Lys Val Lys Thr Lys Ile Asn Val Asp Gly Pro Ser Ala Gln Val
                85                90                95
Arg Leu His Gln Gly Asp Asp Phe Lys Leu Ile Val Arg Ala Val Asp
                100                105                110
Asn Asn Thr Asp Pro Met Ser Ile Ile Asn Ile Phe Gln Phe Glu Thr
                115                120                125
Gly Lys Lys Val Arg Lys Ala Glu Leu Ser Ser Leu Ser Thr Phe Gly
                130                135                140
Gly Ala Ser Ser Asn Asn Leu Glu Leu Leu Pro Tyr Thr Ala Lys Lys
145                150                155                160
Tyr Gly Glu Ser Ser Tyr Leu Ile Thr Leu Lys Glu Lys Pro Val Gly
                165                170                175
Glu Tyr Gly Ile Thr Val Arg Asn Pro Asn Ser Leu Asp Glu Lys Asn
                180                185                190
Ile Ile Val Ala Ser Phe Gly Ile Asp Gln
                195                200

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<210> 10171

<211> 538

<212> PRT

<213> B.fragilis

<400> 10171

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Asp Arg Phe Ile Ser Gly Ser Leu Gly Thr Glu Ser Ile Lys Gly Glu
1           5           10           15
Thr Ser Gly Gly Pro Leu Ser Glu Tyr Thr Arg Val Tyr Arg Ile Lys
                20                25                30
Arg Arg Tyr Arg Asp Asn Leu Asn Ser Ser Phe Asn Lys Asn Lys Asn
                35                40                45
Asp Met Arg Asn Ile Gln Arg Thr Ile Leu Trp Ile Ala Gly Leu Leu
50                55                60
Phe Cys Leu Pro Ser Ser Ser Ser Asn Pro Val Val Ile Gly Asn Ser
65                70                75                80
Arg Phe Thr Phe Ile Thr Asp His Leu Val Arg Met Glu Tyr Ala Gln
                85                90                95
Gln Gly Lys Phe Leu Asn Asp Ser Thr Leu Phe Ala Val Asp Arg Thr
                100                105                110
Pro Arg Cys Thr Glu Val Lys Val Glu Arg Lys Glu Gly Asn Arg Tyr
                115                120                125
Ile Met Thr Thr Pro Ala Met Arg Ile Glu Tyr Tyr Asn Asp Gly Phe
130                135                140
Pro Phe Gly Gln Thr Asn Leu Phe Val Tyr Phe Arg Asn Gly Asp Ser
145                150                155                160
Pro Lys Glu Lys Arg Trp Tyr Ile Ala Ser Arg Gln Ser Arg Asn Leu
                165                170                175
Leu Gly Ala Val Thr Thr Leu Asp Asp Val Glu Gly Pro Ile Asp Arg
                180                185                190
Gln Glu Gly Leu Leu Ser Arg Asp Gly Trp Tyr Leu Ile Asn Asp Thr
195                200                205
Gly Lys Glu Val Leu Lys Asn Gly Trp Val Ala Thr Arg Asp Arg Asn

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210	215	220
His Val Gln Asp Leu Tyr Leu Phe Val Tyr Gly Asn Asp Tyr Lys Ala		
225	230	235
Ala Leu Lys Ser Leu Gln Ala Val Ser Gly Pro Ser Pro Met Thr Arg		240
	245	250
Lys Tyr Val His Gly Ser Trp Tyr Cys Arg Trp Trp Asn Tyr Thr Asp		255
	260	265
Glu Asp Tyr Arg Gln Leu Val Arg Glu Tyr Arg Glu His Asp Phe Pro		270
	275	280
Leu Asp Ile Met Val Phe Asp Met Gly Trp His Thr Gln Asn Ala Lys		285
	290	295
Val Gly Thr Gly His Ala Gly Thr Arg Gly Trp Thr Gly Tyr Ser Trp		300
305	310	315
Asn Arg Lys Leu Ile Pro Glu Pro Glu Lys Leu Ile Lys Asp Phe Lys		320
	325	330
Asp Asp His Ile Tyr Val Val Leu Asn Glu His Pro His Asp Gly Ile		335
	340	345
Arg Pro His Glu Asp Ser Tyr Gln Ala Phe Val Arg Asp Leu Gly Val		350
	355	360
Asp Thr Gln Gln Thr Gly Val Pro Leu Phe Asp Ala Gly Asn Arg Asp		365
	370	375
Tyr Met Asn Ala Phe Met Lys His Ala His Gln Glu Ser Asp Ser Met		380
385	390	395
Gly Val Ala Phe Trp Trp Leu Asp Trp Gln Gln Asp Tyr Leu Tyr Pro		400
	405	410
Leu Val Arg Gly Thr Asn Met Lys His Leu Pro Trp Met Asn Arg Ile		415
	420	425
Tyr Tyr Asn Tyr Ser Ser Gly Asn His Leu Arg Gly Ala Gly Phe Ser		430
	435	440
Arg Trp Ala Gly Trp Gly Asp His Arg His Pro Ile Gln Phe Ser Gly		445
	450	455
Asp Ala Val Gly Asn Trp Asp Leu Leu Arg Phe Glu Val Asp Leu Thr		460
465	470	475
Thr Thr Ser Gly Asn Ala Gly Cys Phe Phe Trp Ala His Asp Leu Gly		480
	485	490
Gly Phe Tyr Asp Gly Thr Asp Pro Glu Leu Tyr Thr Arg Trp Thr Gln		495
	500	505
Phe Gly Leu Leu Asn Ser Ser Leu Arg Ile His Ser Val Tyr Asp Glu		510
	515	520
Asn Ser Thr Ala Val Pro Gly Ser Gly Ala		525
530	535	

<210> 10172

<211> 436

<212> PRT

<213> B.fragilis

<400> 10172

Cys Leu Thr Ile Arg Gln Gly Trp Ile His Glu Ile Lys Thr Asp Ile	
1	5
Asn Met Ile Asp Ile Trp Gln Glu Ile Tyr Gly Thr Ile Lys Arg Asn	10
	20
Lys Leu Arg Thr Leu Leu Thr Gly Phe Ala Val Ala Trp Gly Ile Phe	25
	30
Met Leu Ile Val Leu Leu Gly Ala Gly Asn Gly Leu Ile His Ala Phe	35
	40
Glu Lys Ser Ser Ser Ala Arg Ala Leu Asn Ser Ile Lys Ile Tyr Pro	45
	50
Gly Trp Thr Gly Lys Pro Tyr Asp Gly Leu Lys Glu Gly Arg Arg Ile	55
	60
	65
	70
	75
	80

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<210> 10173
<211> 280
<212> PRT
<213> B.fragilis
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<400> 10173															
Ser	Arg	Leu	Ile	Met	Arg	Val	Asp	Met	Asp	Thr	Cys	Glu	Glu	Ile	Leu
1				5					10					15	
Val	Thr	Ile	Thr	Arg	Asn	Lys	Thr	Arg	Ser	Leu	Leu	Thr	Ala	Phe	Gly
			20					25					30		
Val	Phe	Trp	Gly	Ile	Phe	Met	Leu	Val	Ala	Leu	Met	Gly	Gly	Gly	Gln
		35					40					45			
Gly	Met	Gln	Glu	Met	Met	Gln	Ala	Glu	Phe	Glu	Gly	Phe	Ala	Thr	Asn

180

<210> 10175

<211> 116

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (92)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10175

```

Pro Trp Arg Ile Leu Arg Arg Asn Arg Pro Gly Thr Leu His Ser Leu
1           5           10           15
Asp Thr Val Arg Ile Ala Glu Phe Phe Thr Pro His Pro Leu Gly Val
          20           25           30
Arg Arg Lys Leu Asp Arg Arg Pro Trp Leu Trp Gly Val Glu Ala Glu
          35           40           45
Lys Ala Met His Arg Ile Tyr His Leu Arg Ser Gln Leu Met Pro Tyr
          50           55           60
Ile Tyr Ser Ser Val Arg Gln Cys His Thr Asp Met Leu Pro Leu Asn
65           70           75           80
Arg Gly Met Tyr Ile Glu Tyr Pro Asp Glu Glu Xaa Ala Tyr Gln Tyr
          85           90           95
Pro Gly Gln Phe Leu Phe Gly Asp Leu Leu Leu Gly Ala Pro Ile Thr
          100          105          110
Ala Lys Gly Glu
          115

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<210> 10176

<211> 291

<212> PRT

<213> B.fragilis

<400> 10176

```

Ile Met Ile Phe Pro Ile Asn Lys Lys His Thr Phe Phe Ser Lys Glu
1           5           10           15
Lys Thr Leu Leu Thr Phe Phe Phe Ile Leu Phe Ile Ser Phe Ser Ala
          20           25           30
Phe Gly Gln Gln Asp Lys Lys Leu Ile Leu Leu Gln Thr Ser Asp Val
          35           40           45
His Ser Arg Leu Glu Pro Ile Asn Gln Glu Gly Asp Arg Asn Tyr Asp
          50           55           60
Lys Gly Gly Phe Val Arg Arg Ala Thr Phe Val Lys Glu Phe Arg Lys
65           70           75           80
Glu His Pro Asp Met Leu Leu Phe Asp Cys Gly Asp Ile Ser Gln Gly
          85           90           95
Thr Pro Tyr Tyr Asn Met Phe Gln Gly Glu Val Glu Val Lys Met Met
          100          105          110
Asn Glu Met Lys Tyr Asp Ala Met Thr Ile Gly Asn His Glu Phe Asp
          115          120          125
Phe Asp Leu Asp Asn Met Ala Arg Leu Phe Arg Met Ala Asp Phe Pro
          130          135          140
Val Val Cys Ala Asn Tyr Asp Val Ser Ala Thr Val Leu Lys Asp Leu
145          150          155          160
Val Lys Pro Tyr Val Val Phe Glu Arg Asp Gly Val Lys Ile Gly Val
          165          170          175
Leu Gly Leu Gly Cys Gln Leu Glu Gly Met Val Gln Ala Asn Lys Cys

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      180              185              190
Val Gly Val Val Tyr Asn Asp Pro Val Thr Val Ala Asn Glu Val Ala
      195              200              205
Ala Leu Leu Lys Glu Lys Glu Gly Cys Asp Val Val Val Cys Leu Ser
      210              215              220
His Leu Gly Val Gln Tyr Asp Glu Asn Gln Leu Ile Pro Lys Thr Arg
      225              230              235              240
Asn Ile Asp Val Val Leu Gly Gly His Ser His Thr Phe Met Lys Gly
      245              250              255
Pro Lys Thr Leu Leu Asn Met Asp Gly Lys Asn Val Ser Leu Met His
      260              265              270
Thr Gly Lys Ser Gly Ile Tyr Val Gly Gln Met Asp Leu Thr Leu Glu
      275              280              285
Lys Lys Lys
      290

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<210> 10177

<211> 114

<212> PRT

<213> B.fragilis

<400> 10177

```

Met Asn Asn Ser Lys Ile Ile Asn Val Arg Leu Met Lys Lys Val Leu
1      5      10      15
Val Leu Val Leu Ser Phe Leu Ser Val Thr Ala Phe Ala Gln Asn Ile
      20      25      30
Thr Val Lys Gly Ile Val Lys Asp Gly Thr Gly Glu Pro Ile Ile Gly
      35      40      45
Gly Ser Val Leu Val Lys Gly Ser Ser Ile Gly Thr Val Thr Asp Val
      50      55      60
Asp Gly Asn Tyr Thr Leu Ser Asn Val Pro Ala Asp Gly Val Leu Glu
      65      70      75      80
Phe Ser Tyr Ile Gly Met Lys Lys Gln Asp Val Lys Val Ser Gly Lys
      85      90      95
Thr Val Ile Asn Val Val Leu Gln Glu Asp Thr Gln Ile Leu Asp Glu
      100      105      110
Val Gly

```

<210> 10178

<211> 118

<212> PRT

<213> B.fragilis

<400> 10178

```

Ala Gly Glu Pro Ala Phe Cys Asp Glu Asn Pro Ile Asp Cys His Phe
1      5      10      15
Asp Val Lys Ser Tyr Pro Ala Gly Thr Thr Val His Asn Asn Asp Thr
      20      25      30
Asn Ile Ile Tyr Leu Ile Phe Cys Met Lys Gly His Ala Arg Ile Thr
      35      40      45
Ser Thr Phe Phe His Asp Glu Ile Leu Cys Ala Gly Glu Val Met Phe
      50      55      60
Val Pro Arg Gly Ser Glu Tyr Ser Gly Val Ala Leu Ser Asp Val Thr
      65      70      75      80
Leu Leu Val His Lys Phe Asn Asn Thr Val Cys Gln Thr Glu Asn Cys
      85      90      95
Ile Leu Ser Tyr Leu Tyr Ser His Lys Asn Ile Asp Ser Lys Ile Tyr
      100      105      110

```

Cys Cys Gln Arg Arg Thr
115

<210> 10179

<211> 301

<212> PRT

<213> B.fragilis

<400> 10179

Arg	Arg	Gln	Ala	Met	Met	Asn	Lys	Phe	Leu	Asn	Thr	Lys	Val	Leu	Tyr
1				5					10					15	
Ile	Phe	Ile	Ser	Val	Ile	Ile	Phe	Ile	Met	Val	Phe	Leu	Leu	Val	Met
			20					25					30		
Arg	Ala	Cys	Ser	Gln	Lys	Gln	Pro	Ile	Gln	Ala	Val	Val	Thr	Pro	Ser
		35					40					45			
Asp	Pro	Val	Val	Gly	Glu	Glu	Ile	Phe	Phe	Ser	Asp	Ser	Thr	Ser	Gly
	50					55					60				
Ala	Arg	Ile	Trp	Tyr	Trp	Glu	Phe	Gly	Asn	Asn	Glu	Thr	Ser	Thr	Gln
65					70				75						80
Arg	Ser	Gly	His	His	Arg	Phe	Lys	Gln	Lys	Gly	Val	Tyr	Lys	Ile	Arg
			85					90						95	
Leu	Thr	Val	Asn	Gly	Asn	Leu	Glu	Arg	Tyr	Phe	Asp	Val	Arg	Val	Lys
			100					105					110		
Glu	Lys	Thr	Asn	Thr	Glu	Asp	Leu	His	Leu	Val	His	Ile	Ile	Ala	Pro
		115					120					125			
Lys	Glu	Ala	Ile	Gln	Gly	Glu	Asn	Ile	Ile	Phe	Arg	Gly	Glu	Gly	His
	130						135				140				
Asp	Glu	Gln	Trp	Arg	Trp	Glu	Phe	Gly	Glu	Thr	Gly	Met	Ile	Asp	Ser
145					150					155				160	
Arg	Glu	Lys	Thr	Ala	Leu	Tyr	Ala	Tyr	Thr	Glu	Pro	Gly	Glu	Tyr	Glu
				165				170						175	
Val	Leu	Leu	Asn	Thr	Glu	Asn	Thr	Arg	Tyr	Pro	Ile	Arg	His	Arg	Ile
			180					185					190		
Asn	Ile	Leu	Pro	Tyr	Tyr	Ser	Glu	Asn	Asp	Ser	Thr	Asp	Val	Met	Val
		195					200					205			
Leu	Ile	Gly	Leu	Asp	Ile	Lys	Glu	Lys	Leu	Gln	Asn	Ile	Ala	Asp	Gly
	210					215					220				
Lys	Pro	Phe	Asn	Val	Asn	Tyr	Asn	Tyr	Val	Val	Asp	Lys	Tyr	Phe	Asn
225					230					235					240
Asn	Asn	Pro	Asn	Thr	Leu	Val	Val	Ile	Asn	Asn	Asn	Lys	Tyr	Asn	Asp
				245				250						255	
Phe	Tyr	Ser	Tyr	Cys	Gln	Gly	Leu	His	His	Ile	Gly	Arg	Lys	Glu	Thr
			260					265					270		
Ile	Ile	Gln	Asn	Val	Ile	Val	Glu	Thr	Glu	Asp	Glu	Glu	Ser	Gly	Tyr
		275					280					285			
Ile	Thr	Gln	Leu	Thr	Val	Met	Gln	Ile	Glu	Lys	Lys	Lys			
	290					295					300				

<210> 10180

<211> 311

<212> PRT

<213> B.fragilis

<400> 10180

Thr	Gly	Asn	Lys	Pro	Met	Ile	Lys	Thr	Val	Ile	Thr	Gln	Leu	Tyr	Ile
1				5					10					15	
Ala	Phe	Cys	Leu	Ile	Cys	Phe	Phe	Ala	Cys	Glu	Lys	Gln	Lys	Glu	Glu
			20					25					30		
Phe	Pro	Asp	Ile	Arg	Ile	Gly	Lys	Glu	Gly	Val	Val	Asp	Glu	Leu	Ser

35 40 45
 Leu Asn Lys Gln Thr Glu Lys Arg Leu Leu Leu Ser Gly Gly Asn Gly
 50 55 60
 Lys Tyr Ile Val Asn Val Glu Asn Ala Gln Ile Ala Thr Ala Asp Ile
 65 70 75 80
 Ser Met Asp Thr Leu Lys Val Lys Gly Trp Leu Glu Gly Glu Thr Phe
 85 90 95
 Ala Thr Ile Ile Ser His Asp Lys Arg Ile Arg Leu Lys Ile Asn Val
 100 105 110
 Val Phe Pro Glu Leu Gly Ile Ser His Ser Val Val Gln Leu Leu Pro
 115 120 125
 Arg Phe Arg Ser Lys Phe Ile Ser Ile Ser Gly Gly Gly Glu Leu Thr
 130 135 140
 Lys Leu Glu Glu Asp Asp Pro Ala Asp Ile Met Asp Met Lys Trp Asp
 145 150 155 160
 Gly Ser Thr Gly Met Leu Glu Ile Tyr Pro Lys Tyr Glu Gly Glu Ala
 165 170 175
 Arg Val Ile Ala Ile Ser Glu Asp Ala Lys Glu Lys Lys Val Ile His
 180 185 190
 Ile Lys Val Arg Pro Glu Gly Lys Leu Glu Ile Pro Gly Trp Tyr Ser
 195 200 205
 Thr Asn Ser Ser Ser Tyr Tyr Leu Ile Gln Asn Asn Asn Met Val Val
 210 215 220
 Lys Arg Lys Gly Val Gly Thr Trp Ile Val Asn Ser Ala Arg Pro Tyr
 225 230 235 240
 Gly Gly Gly Val Met Tyr Asn Ser Ser Tyr Ile Lys Ile Ala Pro Ile
 245 250 255
 Met Asn Pro Val Gln Gly Asp Ser Ile Asp Leu Asn Ile Leu Arg His
 260 265 270
 Gly Ser Leu Lys Pro Gln Ile Thr Glu Gly Ile His Arg Leu Tyr Val
 275 280 285
 Glu Glu Val Arg Glu Ser Glu Val Met Leu Arg Gly Arg Gly Phe Lys
 290 295 300
 Phe Leu Leu Pro Tyr Glu Lys
 305 310

<210> 10181

<211> 281

<212> PRT

<213> B.fragilis

<400> 10181

Arg Leu Cys Lys Ser Lys Lys Arg Asn Glu Met Arg Lys Leu Phe Val
 1 5 10 15
 Leu Leu Ile Ser Ile Val Val Leu Ser Ala Cys Ala Pro Val His Arg
 20 25 30
 Phe Thr Gln Leu Arg Lys Leu Pro Arg Glu Tyr Ser Asp Asn Tyr Ser
 35 40 45
 Ile Glu Gly Ile Lys Ala Pro Arg Ser Ala Ala His Arg Lys Pro Trp
 50 55 60
 Ile Val Tyr Ser Asp Arg Val Glu Asn Ala Ala Tyr Val Asn Pro Gly
 65 70 75 80
 Gly Arg Val Lys Ser Ala Glu Val Gly Leu Leu Asp Thr Phe Leu Val
 85 90 95
 Ile Lys Thr Lys Gly Asp Tyr Leu Arg Leu Ile Lys Tyr Asn Pro Thr
 100 105 110
 Asn Ile Lys His Asn Arg Met Thr Gln Arg Lys Lys Ala Glu Tyr Val
 115 120 125
 Gly Trp Met His Arg Ser Arg Leu Ile Leu Ser Pro Ser Ser Ile Thr

130 135 140
 Asp Val Gln Ser Gly Leu His Asp Lys Leu Leu Thr Ala Ile Thr Asp
 145 150 155 160
 Thr Thr Ala Ile Met Gln Ser Ala Thr Tyr Phe Thr Thr Ala Asp Ser
 165 170 175
 Leu Lys Val Phe Gly Asp Pro Glu Leu Gln Asn Gln Thr Gly Val Val
 180 185 190
 Gly Ile His Ala Ile Ile Tyr Ala Leu Lys His Ser Val Asp Lys Arg
 195 200 205
 Ser Val Leu Val Ser Lys Thr Pro Ser Leu Ser Ala Asp Lys Ile Gly
 210 215 220
 Glu Gln Val Ile Gly Trp Val Pro Ala Val Met Leu Gln Glu Ile Gly
 225 230 235 240
 His Gln Val Phe Thr Gly Thr Ala Phe Ser Arg Val Pro Thr Leu Gln
 245 250 255
 Lys Thr Leu Lys Tyr Ala Pro Met Ile Tyr Pro Tyr His Thr Asp Ser
 260 265 270
 Thr Cys Ser Phe Val Ser Gly Thr Leu
 275 280

<210> 10182

<211> 518

<212> PRT

<213> B.fragilis

<400> 10182

Pro Val Ile Asp Lys Lys Asp Asn His Val Phe Asn Ile Asn Gly Lys
 1 5 10 15
 Arg Ile Ser Tyr Thr Arg Gly Asn Gln Ile Lys Gln Glu Leu Lys Arg
 20 25 30
 Ile Asn Ile Leu Phe Ala Met Glu Gln Ser Ser Arg Leu Pro Glu Gln
 35 40 45
 Tyr Pro Met Leu Leu Asn Ala Ile Gln Asn Leu Gly Pro Phe Phe Ala
 50 55 60
 Gly Ser Gly Glu Ser Phe Ser Tyr Gln Phe Gly Ala Ala Val Ala Thr
 65 70 75 80
 Pro Arg Gly Met Glu Thr Ile Pro Leu Thr Ala Asp Tyr Glu Ile Leu
 85 90 95
 Ile Asp Arg Leu Val Lys Met Ala Ser Tyr Val Ala Asp Thr Glu Asn
 100 105 110
 Thr Pro Leu Pro Ala Trp Lys Ala Met Arg Ser Ala Leu Glu Leu Ile
 115 120 125
 Gly Asn Thr Pro Glu Ala Val Asn Leu Ile Ile Ser Val Gly Glu Thr
 130 135 140
 Gly Glu Gln Gln Glu Asn Ala Pro Ser Ser Ile Val Lys Thr Leu Asn
 145 150 155 160
 Glu Lys Asn Cys Arg Leu Leu Gly Trp Gln Leu Tyr Ala Ser Asn Asp
 165 170 175
 Asp Lys Tyr Asn Asn Tyr Val Leu Gln Leu Ser Asn Met Ile Glu His
 180 185 190
 Tyr Ala Glu Tyr Arg Thr Lys Asn Lys Arg Asn Met Ile Leu Tyr Ala
 195 200 205
 Asp Gln Phe Cys Arg Ser Asn Leu Leu Arg Glu Ala Gly Pro Asn Phe
 210 215 220
 Leu Met Leu Asp Tyr Pro Tyr Ala Ser Met Thr Gln Gly Gly Phe Leu
 225 230 235 240
 Phe Pro Glu Lys Gly Glu Thr Leu Pro Met Glu Leu Phe Ala Gly Ala
 245 250 255
 Val Asp Ser Ile Val Thr Gln Ile Lys Ala Asp His Gln Leu Leu Ser

260 265 270
 Glu Ser Ile Asp Arg Ala Phe Ala Thr Val Gly Asn Gly Lys Asp Arg
 275 280 285
 Leu Asp Ser Leu Leu Ile Ala Thr Tyr His Leu Pro Gln Gly Val Lys
 290 295 300
 Pro Asn Lys Glu Phe Lys Lys Ile Phe Gly Asp Val Ala Pro Ile Trp
 305 310 315 320
 Tyr Arg Lys Thr Glu Arg Ile Thr Val Pro Asp Ser Leu Met Arg Tyr
 325 330 335
 Tyr Leu Leu Leu Ser Asp Pro Glu Leu Lys Gln Thr Ile Glu Arg Leu
 340 345 350
 Glu Thr Leu Cys Ala Ile Glu Val Asp Val Lys Asp Met Asn Lys Pro
 355 360 365
 Lys Lys Gly Lys Val Lys Gln Leu Cys Arg Tyr Leu Arg Glu Arg Val
 370 375 380
 Arg Pro Asp Lys Val Glu Thr Leu Gly Ala Ser Pro Ala Asn Pro Glu
 385 390 395 400
 Ser Lys Ala Asp Thr Val Tyr Val Ser Thr Gly Lys Ile Arg Arg His
 405 410 415
 Leu Tyr Arg Phe Tyr Met Ser Glu Leu Arg Asn Cys Arg Ile Cys Lys
 420 425 430
 Asn Lys Arg Lys Glu Ile Arg Arg Tyr Ser Leu Ser Tyr Ala His Ser
 435 440 445
 Gln Ile Phe Gly Val Pro Ala Asn Ser Pro Val Leu Asp Asp Ile Thr
 450 455 460
 Val Lys Glu Leu Lys Lys Lys Lys Gln Leu Thr Asp Lys Glu Leu Asp
 465 470 475 480
 Gly Leu Ile Gln Tyr Phe Lys Glu Arg Lys Glu Asn Met Ala Lys Lys
 485 490 495
 Tyr Gly Glu Glu Lys Ile Thr Met Glu Gly Gln Ser Tyr Tyr Tyr Ile
 500 505 510
 Ala Ser Glu Leu Leu Pro
 515

<210> 10183

<211> 179

<212> PRT

<213> B.fragilis

<400> 10183

Asn Arg Lys Asp Met Ser Ile Thr Pro Lys Asn Lys Ser Ser Lys Thr
 1 5 10 15
 Val Ser Glu Arg Glu Arg Phe Ile Gly Phe Val Tyr Val Leu Thr Leu
 20 25 30
 Leu Ile Val Ile Thr Gly Ala Cys Gly Phe Ile Leu Phe Lys Tyr Ala
 35 40 45
 Gly Thr Arg His Ile Phe Ser Asn Lys Ile Met Val Ile Lys Lys Met
 50 55 60
 Glu Arg Gln Lys Glu Phe Gln Asn Ile Gln Ser Val Gln Ile Val Ser
 65 70 75 80
 Ala Asp Thr Leu Phe Ser Arg Ile Glu Gln Phe Glu Pro Gly Val Asn
 85 90 95
 Ala Ser Tyr Glu Glu Asn Asp Ile Lys Phe Leu Ile Asn Asp Leu Ala
 100 105 110
 Lys Gln Trp Glu Lys Asn Ser Phe Asp Lys Arg Asn Lys Met Phe Trp
 115 120 125
 His Leu Ala Ser Val Tyr Glu Met Trp Phe Ala Asp Lys Lys Glu Leu
 130 135 140
 Trp Ser Lys Gln Asp Asn Ile Ile Lys Phe Lys Lys Asn Leu Glu Glu

145 150 155 160
 Cys Glu Val Gly Leu Gln Lys Lys Glu Gly Glu Leu Lys Asn Lys Gly
 165 170 175
 Gly Lys Pro

<210> 10184
 <211> 106
 <212> PRT
 <213> B.fragilis

<400> 10184
 Tyr Gly Asp Cys Ala Asp Pro Ser Ser Pro Val Val Glu Asp Met Gly
 1 5 10 15
 Ser Asn Asp Arg Leu Asn Gln Val Val Leu Gln Lys Val Ile Ser Thr
 20 25 30
 Arg Lys Met Glu Leu Ile Glu Glu Leu Gln Ile Met Asp Ser Lys Asp
 35 40 45
 Val Leu Leu Tyr Lys Lys Leu Ala Ser Gln Ile Asn Val Phe Leu Asp
 50 55 60
 Thr Lys Glu Ala Ile Arg Lys Ala Val Ile Glu Glu Ser Leu Val Arg
 65 70 75 80
 Lys Asp Leu Met Arg Cys Ile Gln Asp Asn Lys Gln Ala Thr Arg Lys
 85 90 95
 Leu Thr Leu Gly Asn Ile Ile Val Glu Lys
 100 105

<210> 10185
 <211> 318
 <212> PRT
 <213> B.fragilis

<400> 10185
 Arg Asn Arg Leu Ala Leu Pro Pro Arg Val Lys Thr Glu Arg Arg Pro
 1 5 10 15
 Glu Ser Thr Gly Val Tyr Ala Leu Lys Ile Trp Leu Asn Gly Gly Ser
 20 25 30
 Val Phe Leu Ala Gln Pro Val Ser Val Lys Ala Gly Lys Gln Tyr Thr
 35 40 45
 Leu Ser Phe Trp Asn Lys Gly Ser Val Gly Asn Arg Glu Ile Val Val
 50 55 60
 Thr Leu Phe Trp Tyr Asp Asn Gly Ser Ile Lys Ser Arg Glu Lys Ile
 65 70 75 80
 Leu Ser Ile Arg Thr Gly Lys Asp Glu Trp Arg Arg Val Glu Ser Thr
 85 90 95
 Val Thr Ile Pro Glu Asn Ile His Ser Met Gly Met Gly Ile Arg Thr
 100 105 110
 Gln Ser Tyr Gln Gly Tyr Met Leu Ile Asp Asp Met Ser Leu Val Leu
 115 120 125
 Lys Glu Ser Gly Pro Asp Ile Ser Ala Val Pro Glu Ala Pro Asp Asn
 130 135 140
 Leu Arg Met Lys Ala Tyr Gln Asn Glu Met Glu Ile Cys Trp Asn Lys
 145 150 155 160
 Val Ser Asp Glu Thr Ile Lys Trp Glu Val Val Phe Asp Asp His Val
 165 170 175
 Glu Thr Ile Thr Phe Gly Asn Ser Tyr Val Lys Thr Lys Leu Ile Pro
 180 185 190
 Gly Ser Thr His His Ile Lys Val Arg Ala Gly Lys Gly Lys Glu Phe
 195 200 205

Ser Pro Tyr Ala Glu Arg Arg Gly Ala Thr Glu Arg Met Arg Glu Ala
 210 215 220
 Glu Asn Ser Glu Asp Arg Ile Pro Tyr Leu Arg Thr Ile Leu Pro Asp
 225 230 235 240
 Gly Ser Cys Glu Gly Arg Phe Leu Lys Leu Tyr Tyr Asn Glu Leu Ala
 245 250 255
 Asn Pro Asn Ala Lys Val Ser Tyr Lys Leu Asp Gly Val Thr Ile Glu
 260 265 270
 Pro Lys Asp Asn Thr Leu Glu Phe Pro Glu Phe Glu Gly Phe Tyr Lys
 275 280 285
 Arg Phe Arg Leu Glu Val Tyr Ile Asp Glu Gly Glu Gly Arg Glu Trp
 290 295 300
 Glu Ile Leu Tyr Pro His Leu Gly Val Lys Arg Asn Glu Lys
 305 310 315

<210> 10186

<211> 64

<212> PRT

<213> B.fragilis

<400> 10186

Val Met Leu Arg Cys Trp Phe Ile Asn Ser Ile Thr Gln Ser Ala Arg
 1 5 10 15
 Gln Lys Thr Val Ser Phe Pro Ile Phe Ile Arg Thr Arg Ile Leu Ile
 20 25 30
 Pro Lys Phe Ile Val Ala Lys Glu Glu Arg Lys Lys His Val Tyr Ser
 35 40 45
 Leu Val Leu Val Thr Ile Leu Ile Lys Phe Tyr Cys Lys Tyr Lys Thr
 50 55 60

<210> 10187

<211> 624

<212> PRT

<213> B.fragilis

<400> 10187

Gly Pro Ile Phe Leu Ser Gly Met Asn Ile Gln Asp Ala Glu Arg Ser
 1 5 10 15
 Leu Arg Arg Glu Phe Ser Lys Ile Tyr Ala Ala Ile Pro Gln Lys Thr
 20 25 30
 Val His Ile Glu Leu Ser Leu Gly Arg Ile Arg Thr Ile Met Ile Asn
 35 40 45
 Val Met Gly Glu Val Lys Val Pro Gly Ile Tyr Arg Leu Ser Ala Phe
 50 55 60
 Ala Ser Val Phe His Ala Leu Tyr Arg Ala Gly Gly Ile Ser Asp Ile
 65 70 75 80
 Gly Ser Leu Arg Asp Ile Arg Val Val Arg Asp Gly Lys Glu Ile Val
 85 90 95
 Arg Val Asp Val Tyr Asp Tyr Ile Met Lys Gly Lys Leu Thr Asp Asn
 100 105 110
 Ile Arg Leu Ser Glu Gly Asp Val Ile Leu Val Pro Pro Tyr Gln Asn
 115 120 125
 Leu Val Ser Ile Ser Gly Lys Val Lys Arg Pro Met Lys Tyr Glu Met
 130 135 140
 Lys Ser Gly Glu Thr Val Ala Thr Leu Leu Ser Tyr Ala Gly Gly Phe
 145 150 155 160
 Thr Gly Asp Ala Tyr Arg Ser Ala Ile Arg Leu Phe Arg Met Gly Gly
 165 170 175
 Lys Ala Lys Gln Val Tyr Asn Val Ala Gln Asp Asp Tyr Gln Ser Tyr

180					185					190					
Leu	Leu	Ala	Asp	Gly	Asp	Lys	Leu	Ser	Val	Glu	Ala	Val	Leu	Glu	Arg
195					200					205					
Phe	Ser	Asn	Lys	Val	Glu	Ile	Arg	Gly	Ala	Val	Tyr	Arg	Ala	Gly	Ile
210					215					220					
Tyr	Gln	Leu	Asp	Asp	Ser	Val	Thr	Gly	Thr	Val	Arg	Gln	Leu	Ile	Ser
225					230					235					
Lys	Ala	Glu	Gly	Leu	Arg	Gly	Asp	Ala	Phe	Leu	Asn	Arg	Ala	Leu	Leu
245					250					255					
Arg	Arg	Gln	Gln	Glu	Asp	Leu	Thr	His	Glu	Met	Ile	Pro	Val	Asp	Leu
260					265					270					
Lys	Lys	Met	Met	Asp	Asp	Thr	Ser	Ala	Asp	Leu	Cys	Leu	Gln	Lys	Asn
275					280					285					
Asp	Val	Leu	Tyr	Ile	Pro	Ser	Val	Lys	Asp	Ile	Glu	Lys	Glu	Gly	Thr
290					295					300					
Leu	Ser	Ile	Tyr	Gly	Asp	Val	Arg	Val	Pro	Gly	Glu	Phe	Pro	Tyr	Val
305					310					315					
Lys	Asn	Thr	Thr	Ile	Gln	Asp	Leu	Ile	Val	Lys	Ala	Gly	Gly	Leu	Pro
325					330					335					
Glu	Ser	Ala	Ser	Met	Val	Arg	Ile	Asp	Val	Ser	Arg	Arg	Ile	Lys	Asp
340					345					350					
Pro	Gly	Ser	Ile	Leu	Ser	Ser	Asn	Val	Ile	Gly	Lys	Ser	Phe	Thr	Val
355					360					365					
Glu	Leu	Ala	Asn	Gly	Leu	Leu	Ile	Gly	Glu	Asp	Lys	Gly	Phe	Glu	Leu
370					375					380					
Glu	Pro	Tyr	Asp	Ile	Val	Phe	Val	Arg	Arg	Ser	Pro	Gly	Tyr	Arg	Lys
385					390					395					
Gln	Ala	Asn	Val	Thr	Val	Glu	Gly	Glu	Val	Val	Phe	Thr	Gly	Asn	Tyr
405					410					415					
Ala	Leu	Thr	Lys	Ser	Asn	Glu	Arg	Leu	Ser	Ser	Leu	Ile	Ala	Arg	Ala
420					425					430					
Gly	Gly	Leu	Ser	Lys	Glu	Ala	Tyr	Val	Arg	Gly	Ala	Arg	Leu	Ile	Arg
435					440					445					
Arg	Met	Thr	Ala	Asp	Glu	Ile	Arg	Arg	Lys	Gln	Asp	Val	Val	Arg	Leu
450					455					460					
Leu	Val	Lys	Gly	Ser	Glu	Glu	Asn	Ser	Ile	Ser	Pro	Val	Ala	Leu	Glu
465					470					475					
Thr	Gly	Ser	Thr	Tyr	Pro	Val	Gly	Ile	Glu	Leu	Glu	Lys	Ala	Leu	Ile
485					490					495					
Asn	Pro	Gly	Ser	Asp	Glu	Asp	Met	Val	Leu	Arg	Glu	Gly	Asp	Val	Leu
500					505					510					
Phe	Ile	Pro	Lys	Tyr	Val	Ser	Thr	Val	Thr	Ile	Ser	Gly	Ala	Val	Met
515					520					525					
Tyr	Pro	Asn	Thr	Ile	Leu	Tyr	Gln	Lys	Gly	Ser	Asn	Leu	Asp	Tyr	Tyr
530					535					540					
Ile	Glu	Gln	Ala	Gly	Gly	Phe	Gly	Asn	Arg	Ala	Leu	Lys	Arg	His	Ile
545					550					555					
Tyr	Val	Val	Tyr	Met	Asn	Gly	Met	Val	Ser	Arg	Leu	Arg	Lys	Ser	Ala
565					570					575					
Val	Cys	Ala	Ile	Glu	Pro	Gly	Cys	Glu	Ile	Ile	Val	Pro	Ser	Lys	Glu
580					585					590					
Asn	Arg	Lys	Lys	Thr	Val	Pro	Arg	Asp	Val	Ala	Gly	Met	Asn	Thr	Ser
595					600					605					
Ile	Ala	Ser	Ile	Ala	Ala	Met	Val	Ala	Ala	Met	Val	Gly	Met	Ile	Lys
610					615					620					

<210> 10188

<211> 132

<212> PRT

<213> B.fragilis

<400> 10188

Lys Lys Cys Val Ser Arg Lys Ser Cys Tyr Gly Glu Glu Val Ser Asn
 1 5 10 15
 Phe Cys Ser Leu Met Lys Ser Glu Ile Phe Val Arg Phe Val Ser Cys
 20 25 30
 Ile Ala Lys Lys Val Ser Cys Leu Lys Asp Met Ile Leu Lys Lys Thr
 35 40 45
 Asn Asp Lys Gly Ala Leu Leu Phe Ala Leu Phe Ile Leu Leu Ala Gly
 50 55 60
 Gly Ser Arg Ala Arg Gln His Met Lys Asp Asp His Val Ile Arg Gly
 65 70 75 80
 Lys Gln Val Ala Val Phe Gly Arg Asn Ile Phe Thr Ala Arg Asn Leu
 85 90 95
 Ser Phe Glu Pro Ser Leu Asp Ile Pro Thr Pro Glu Lys Tyr Val Ile
 100 105 110
 Arg Ser Gly Asp Glu Leu Ile Ile Asp Val Trp Gly Ala Ser Glu Ile
 115 120 125
 Gln Ser Gly Lys
 130

<210> 10189

<211> 316

<212> PRT

<213> B.fragilis

<400> 10189

Tyr Thr Glu Pro Arg Cys Glu Asp Ala Val Ser Ala Phe Leu Tyr Tyr
 1 5 10 15
 Arg Lys Gly Tyr Asp Met Gly Ala Asp Phe Tyr Gln Val Val Ile Trp
 20 25 30
 Ser Phe Ile Val Leu Ala Ala Ser Glu Ala Ile Tyr Gly Leu Arg Gln
 35 40 45
 Leu Tyr Gly Phe Thr Ser Ser His His Ser Leu Tyr Ser Leu Thr Gly
 50 55 60
 Ser Phe Phe Asn Pro Gly Pro Tyr Ser Gly Tyr Leu Ala Met Ile Phe
 65 70 75 80
 Pro Leu Cys Leu Asp Gln Trp Leu Arg Leu Arg Lys Arg Glu Asn Lys
 85 90 95
 Asn Trp Met Glu Trp Thr Gly Tyr Tyr Gly Ala Val Ala Val Leu Phe
 100 105 110
 Leu Ile Leu Cys Val Leu Pro Ala Gly Met Ser Arg Ser Ala Trp Val
 115 120 125
 Ala Ala Leu Ile Ser Gly Ile Trp Val Tyr Gly Ala His Lys Ser Trp
 130 135 140
 Pro Val Arg Leu Lys Arg Val Trp Met Arg Lys Lys Thr Lys Val Leu
 145 150 155 160
 Ala Val Thr Ser Val Leu Cys Ile Val Val Leu Val Gly Gly Val Cys
 165 170 175
 Leu Phe Asn Leu Lys Lys Asp Ser Ala Ser Gly Arg Leu Phe Met Trp
 180 185 190
 Lys Ile Ser Ser Arg Ala Ile Ala Glu Lys Pro Phe Thr Gly Tyr Gly
 195 200 205
 Gln Gly Asn Phe Ala Leu Ala Tyr Gly Thr Ser Gln Glu Ala Tyr Phe
 210 215 220
 Ala Glu Arg Ser Tyr Ser Pro Gln Glu Glu Leu Val Ala Gly Ser Pro
 225 230 235 240
 Glu Tyr Ala Phe Asn Glu Tyr Leu Gln Ile Ala Leu Glu Trp Gly Ile

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<210> 10190
<211> 508
<212> PRT
<213> B.fragilis
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<400> 10190																
Asp 1	Pro	Val	Leu	Leu 5	Cys	Gly	Glu	Pro	Lys 10	Thr	Ile	Thr	Met	Lys 15	Lys	
Ile	Tyr	Ser	Ile	Leu 20	Leu	Ala	Ser	Ala 25	Leu	Thr	Leu	Ser	Ser 30	Cys	Ala	
Asp	Phe	Leu	Asp	Val	Asp	Ser	Gln	Gly 40	Lys	Leu	Thr	Glu 45	Asp	Val	Phe	
Phe	Ser	Glu	Glu	Glu	Gly	Ala	Leu	Met	Ser	Ile	Asn	Ala 60	Ile	Tyr	Thr	
Gln 65	Leu	Arg	Ala	Trp	Asp 70	Ile	Ile	Gly	Phe	Ser	Trp	Phe	Ala	Ile	Thr 80	
Glu	Leu	Pro	Gly	Asp 85	Asn	Ser	Asp	Thr	Gly 90	Ser	Glu	Leu	Ala	Asp 95	Gly	
Ser	Val	Ala	Arg	Leu	Asn	Gln	Phe	Asn	Asp 105	Phe	Thr	Tyr	Asp 110	Ala	Ser	
Thr	Ser	Glu	Ile	Asn	Gly	Trp	Trp	Glu	Gly 120	Asn	Tyr	Lys 125	Ala	Ile	Ala	
Ser	Cys	Asn	Val	Ala	Leu	Asp	Asn	Leu	Gly 135	Ala	Val	Lys 140	Asn	Glu	Glu	
Leu 145	Arg	Val	Lys	Cys	Val	Ala	Gln	Ala	Arg	Phe	Phe	Arg	Gly	Phe	Phe 160	
Tyr	Phe	Asn	Leu	Val	Arg	Ala	Phe	Gly	Gly 170	Val	Pro	Leu	Val	Thr	Lys	
Val	Leu	Gln	Pro	Gly	Glu	Tyr	Asn	Gln	Pro 185	Arg	Ala	Thr	Glu	Glu	Ala	
Val	Tyr	Gln	Ile	Ile	Glu	Asp	Leu	Thr	Tyr	Ala	Ala	Glu	His	Leu		
Pro	Thr	Arg	Gln	Glu	Trp	Gly	Ala	Lys	Glu	Ser	Gly	Arg	Ala	Thr	Lys	
Gly 225	Thr	Ala	Glu	Gly	Leu	Leu	Ala	Lys	Val	Tyr	Leu	Phe	Arg	Gln	Asp 240	
Tyr	Ala	Asn	Val	Lys	Lys	Tyr	Thr	Gly	Gln	Val	Ile	Ala	Arg	Gly	Glu	
Tyr	Ser	Leu	His	Arg	Asp	Tyr	Arg	Asp	Leu	Phe	Asn	Pro	Asn	Ser	Tyr	
Tyr	Ser	Asp	Glu	Val	Met	Leu	Ala	Asp	Gln	Tyr	Leu	Trp	Gly	Glu	Ser	
Thr	Glu	Arg	Asn	Leu	Glu	Ser	Glu	Tyr	Val	Lys	Trp	Gln	Gly	Ile	Arg	
Gly 305	Glu	Met	Gly	Trp	Gly	Met	Phe	Ser	Pro	Ser	Glu	Ala	Leu	Asp	Gln	
Ala	Tyr	Glu	Ala	Gly	Asp	Pro	Arg	Arg	Thr	Ala	Thr	Ile	Phe	Tyr	Asp	
Gly	Glu	Thr	Leu	Glu	Gly	Lys	Gly	Glu	Ile	His	Phe	Lys	Lys	Glu	Val	


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                245                250                255
Leu Glu Glu Ala Val Glu Ile Ala Asn Phe Phe Leu Pro Arg Gly Lys
                260                265                270
Val Ile Val Thr Thr Lys Gly Lys Thr Lys Gln Ala Ser Asn Thr Tyr
                275                280                285
Lys Thr Leu Arg Glu Pro Leu Asp Leu Asp Ile Pro Ile Thr Val Leu
                290                295                300
Val Asn Gly Ala Thr Ala Ser Ala Ser Glu Ile Leu Ser Gly Ala Phe
305                310                315                320
Gln Asp Phe Asp Arg Ala Val Ile Val Gly Ser Arg Thr Phe Gly Lys
                325                330                335
Gly Leu Val Gln Thr Thr Arg Pro Leu Pro Tyr Gly Gly Val Met Lys
                340                345                350
Leu Thr Thr Ser Lys Tyr Tyr Ile Pro Ser Gly Arg Cys Val Gln Ala
                355                360                365
Ile Asp Tyr Lys His Arg Asn Glu Asp Gly Ser Val Gly Thr Ile Pro
                370                375                380
Asp Ser Leu Thr Thr Val Phe His Thr Ala Ala Gly Arg Glu Val Arg
385                390                395                400
Asp Gly Gly Gly Val Met Pro Asp Ile Glu Val Lys Gln Glu Lys Leu
                405                410                415
Pro Asn Ile Leu Phe Tyr Leu Val Arg Asp Asn Leu Ile Phe Asp Tyr
                420                425                430
Ala Thr Gln Tyr Cys Leu Lys His Pro Ser Ile Pro Ser Pro Gln Glu
                435                440                445
Phe Lys Val Thr Asp Ala Asp Tyr Asn Asp Phe Lys Ala Met Val Lys
                450                455                460
Lys Ala Asp Phe Lys Tyr Asp Gln Gln Ser Glu Lys Ile Met Lys Thr
465                470                475                480
Leu Lys Glu Ala Ala Lys Phe Glu Gly Tyr Leu Asp Glu Ala Ser Glu
                485                490                495
Glu Ile Lys Ala Leu Glu Lys Lys Leu Thr His Asn Leu Asp Arg Asp
                500                505                510
Leu Asp Tyr Phe Ser Lys Asp Ile Arg Ser Met Ile Ala Asp Glu Ile
                515                520                525
Ile Lys Arg Tyr Tyr Tyr Thr Arg Gly Gly Ile Ile Gln Gln Leu Lys
                530                535                540
Asp Asp Asp Gly Leu Gln Ala Ala Leu Lys Ile Leu Ala Asp Pro Val
545                550                555                560
Lys Tyr Lys Glu Thr Leu Ser Ala Pro Val Lys Lys
                565                570

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<210> 10192

<211> 71

<212> PRT

<213> B.fragilis

<400> 10192

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Tyr Arg Ile Thr Met Lys Gln Phe Val Leu Phe Phe Ile Ser Leu Phe
1                5                10                15
Leu Leu Gly Val Gly Ala Arg Ser Gln Glu Met Tyr Gln Lys Lys Val
                20                25                30
Phe Ile Ser Ser Arg Gly Asp Ser Leu Asn Tyr Arg Leu Leu Arg Pro
                35                40                45
Glu Val Glu Lys Thr Gly Leu Arg Leu His His Gly Ala Gly Arg Ile
                50                55                60
Gln Arg Trp Met Arg Phe Gln
65                70

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<210> 10193
 <211> 149
 <212> PRT
 <213> B.fragilis

<400> 10193

```

Leu Val Gln Thr Gly Ala Val Gly Ser Asn Ala Gly Lys Arg Val Val
1          5          10          15
Gln Ala Glu Val Gly Ala Val Val Pro Pro Val Val Tyr Tyr Pro Cys
          20          25          30
Gln Ser Phe Asp Gly Lys Val Ala Glu His Gly Glu Arg Tyr Ser Pro
          35          40          45
Leu Asn Phe Lys Val Ala Tyr Gly Thr Ser His Gln Ile Gly Phe Ala
          50          55          60
Val Thr Glu Lys Pro Val Glu Ile Ser Leu His Asp Val Asp Gly Met
65          70          75          80
Asn Ala Pro Glu Arg Cys Gln Leu Phe Val His Arg Phe Val Gly Asp
          85          90          95
Asp Gly Ile Arg His Val Ile Val Ser Val Glu Val Pro Pro Ile Arg
          100          105          110
Glu Ser Asp Thr Pro Val His Leu Glu Gln Ile Ala Val Ser Thr Leu
          115          120          125
Ile Ala Gly Gln Gly Ile Ile Leu Phe Gln Val Arg His Leu Leu Gln
          130          135          140
Leu Phe Ile Glu Thr
145

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<210> 10194
 <211> 772
 <212> PRT
 <213> B.fragilis

<400> 10194

```

Ile Asp Thr Lys Thr Val Lys Thr Met Lys His Phe Val Arg Arg Met
1          5          10          15
Gln Ala Leu Ala Ala Ser Leu Val Val Val Ala Ala Gly Leu Gln Ala
          20          25          30
Gln Lys Ala Pro Arg Asp Met Asp Arg Phe Ile Asp Gln Leu Met Lys
          35          40          45
Lys Met Thr Leu Glu Glu Lys Ile Gly Gln Leu Asn Leu Pro Val Thr
          50          55          60
Gly Glu Ile Thr Thr Gly Gln Ala Lys Ser Ser Asp Val Ala Lys Arg
65          70          75          80
Ile Arg Asn Gly Glu Val Gly Gly Leu Phe Asn Leu Lys Gly Val Glu
          85          90          95
Arg Ile Arg Glu Val Gln Arg Gln Ala Val Glu Glu Ser Arg Leu Gly
          100          105          110
Ile Pro Leu Leu Phe Gly Met Asp Val Ile His Gly Tyr Glu Thr Ile
          115          120          125
Phe Pro Ile Pro Leu Gly Leu Ser Cys Thr Trp Asp Met Lys Ala Ile
          130          135          140
Glu Glu Ser Ala Arg Ile Ala Ala Val Glu Ala Ser Ala Asp Gly Ile
145          150          155          160
Ser Trp Thr Phe Ser Pro Met Val Asp Val Ser Arg Asp Pro Arg Trp
          165          170          175
Gly Arg Val Ser Glu Gly Asn Gly Glu Asp Pro Phe Leu Gly Ala Ala
          180          185          190
Ile Ala Arg Ala Met Ile Arg Gly Tyr Gln Gly Lys Asp Met Ser Arg
          195          200          205

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Asn	Asp	Glu	Ile	Met	Ala	Cys	Val	Lys	His	Phe	Ala	Leu	Tyr	Gly	Ala
210						215					220				
Ser	Glu	Ala	Gly	Arg	Asp	Tyr	Asn	Thr	Val	Asp	Met	Ser	Arg	Gln	Arg
225					230					235					240
Met	Phe	Asn	Glu	Tyr	Met	Leu	Pro	Tyr	Gln	Ala	Ala	Val	Glu	Ala	Gly
				245					250					255	
Val	Gly	Ser	Val	Met	Ala	Ser	Phe	Asn	Glu	Val	Asp	Gly	Val	Pro	Ala
			260					265					270		
Thr	Gly	Ser	Lys	Trp	Leu	Met	Thr	Asp	Val	Leu	Arg	Lys	Gln	Trp	Gly
		275					280					285			
Phe	Asp	Gly	Phe	Val	Val	Thr	Asp	Tyr	Thr	Gly	Ile	Asn	Glu	Met	Ile
	290					295					300				
Asp	His	Gly	Met	Gly	Asp	Gln	Gln	Thr	Val	Ala	Ala	Leu	Ala	Leu	Asn
305					310					315					320
Ala	Gly	Val	Asp	Met	Asp	Met	Val	Ser	Asp	Ala	Phe	Ser	Gly	Thr	Leu
				325					330					335	
Lys	Lys	Ser	Val	Glu	Glu	Gly	Lys	Val	Ser	Ala	Ala	Ala	Ile	Asp	Ala
			340					345					350		
Ala	Cys	Arg	Arg	Ile	Leu	Glu	Ala	Lys	Tyr	Lys	Leu	Gly	Leu	Phe	Asp
		355					360					365			
Asn	Pro	Tyr	Lys	Tyr	Cys	Asp	Val	Asn	Arg	Pro	Lys	Lys	Gln	Ile	Phe
	370					375					380				
Thr	Lys	Glu	His	Arg	Ala	Ile	Ala	Arg	Lys	Thr	Ala	Ser	Glu	Ser	Phe
385					390					395					400
Val	Leu	Leu	Lys	Asn	Glu	Gly	Val	Leu	Pro	Leu	Ser	Lys	Lys	Gly	Thr
				405					410					415	
Ile	Ala	Val	Val	Gly	Pro	Leu	Ala	Asn	Thr	Arg	Ser	Asn	Met	Pro	Gly
			420					425					430		
Thr	Trp	Ser	Val	Ala	Ala	Val	Leu	Asp	Asn	Ala	Pro	Ser	Leu	Val	Glu
		435					440					445			
Gly	Leu	Arg	Glu	Val	Val	Gly	Asp	Arg	Ala	Lys	Val	Val	Thr	Ala	Lys
	450					455					460				
Gly	Ser	Asn	Leu	Ile	Gly	Asp	Ala	Asp	Tyr	Glu	Lys	Arg	Ala	Thr	Met
465					470					475					480
Phe	Gly	Arg	Glu	Leu	His	Arg	Asp	Asn	Arg	Thr	Asp	Arg	Glu	Leu	Leu
				485					490					495	
Asp	Glu	Ala	Leu	Lys	Val	Ala	Ala	Gly	Ala	Asp	Val	Ile	Val	Ala	Ala
		500						505					510		
Leu	Gly	Glu	Ser	Ser	Glu	Met	Ser	Gly	Glu	Ser	Ser	Ser	Arg	Thr	Asn
		515					520					525			
Leu	Glu	Met	Pro	Asp	Val	Gln	Arg	Ala	Leu	Leu	Gln	Glu	Leu	Leu	Lys
	530					535					540				
Thr	Gly	Lys	Pro	Val	Val	Leu	Val	Leu	Phe	Thr	Gly	Arg	Pro	Leu	Val
545					550					555					560
Leu	Thr	Trp	Glu	Glu	Glu	His	Val	Pro	Ala	Ile	Leu	Asn	Val	Trp	Phe
				565					570					575	
Gly	Gly	Ser	Glu	Ala	Ala	Tyr	Ala	Ile	Ser	Asp	Val	Leu	Phe	Gly	Asp
			580					585					590		
Val	Asn	Pro	Ser	Gly	Lys	Leu	Thr	Ala	Thr	Phe	Pro	Gln	Asn	Val	Gly
		595					600					605			
Gln	Ile	Pro	Leu	Phe	Tyr	Asn	His	Lys	Asn	Thr	Gly	Arg	Pro	Leu	Gln
	610					615					620				
Glu	Gly	Arg	Trp	Phe	Glu	Lys	Phe	Arg	Ser	Asn	Tyr	Leu	Asp	Val	Ser
625					630					635					640
Asn	Glu	Pro	Leu	Tyr	Pro	Phe	Gly	Tyr	Gly	Leu	Ser	Tyr	Thr	Thr	Phe
				645					650					655	
Ala	Tyr	Ser	Asp	Ile	His	Leu	Ser	Ser	Thr	Glu	Met	Ser	Ala	Asp	Gly
			660					665					670		
Lys	Leu	Thr	Ala	Thr	Val	Thr	Val	Thr	Asn	Thr	Gly	Ser	Arg	Asp	Gly

675 680 685
 Ala Glu Val Val Gln Leu Tyr Ile Arg Asp Leu Val Gly Ser Val Thr
 690 695 700
 Arg Pro Val Lys Glu Leu Lys Gly Phe Glu Lys Ile Phe Leu Lys Ala
 705 710 715 720
 Gly Glu Ser Arg Lys Val Ser Phe Ser Ile Thr Pro Glu Leu Leu Lys
 725 730 735
 Phe Tyr Asn Tyr Asp Leu Gln Phe Val Cys Glu Pro Gly Asp Phe Asp
 740 745 750
 Val Met Ile Gly Gly Asn Ser Arg Asp Val Lys Lys Ala Arg Phe Leu
 755 760 765
 Leu Lys Gly Glu
 770

<210> 10195

<211> 948

<212> PRT

<213> B.fragilis

<400> 10195

Leu Met Lys Asn Leu Leu Phe Leu Val Phe Ala Cys Thr Phe Ser
 1 5 10 15
 Phe Ser Cys Leu Gly Ser Pro Val Pro Phe Ser Pro Ile Val Arg Asn
 20 25 30
 Tyr Ser Val Leu Asp Tyr Asn Ala Gly Asn Glu Asn Trp Ala Val Ala
 35 40 45
 Gln Asp Glu Arg Gly Val Met Tyr Phe Gly Asn Asn Ser Gly Leu Leu
 50 55 60
 Arg Tyr Asp Gly Ser Arg Trp Lys Leu Phe Pro Leu Pro Thr Ser Gly
 65 70 75 80
 Ile Val Arg Ala Val Tyr Val Ala Ser Asp Arg Arg Ile Tyr Val Gly
 85 90 95
 Ser Phe Glu Glu Phe Gly Tyr Phe Glu Gln Asn Asp Leu Asn Leu Leu
 100 105 110
 Glu Tyr His Ser Leu Lys Glu Gln Val Lys Gly Phe Asp Phe His Asn
 115 120 125
 Asp Glu Ile Trp Thr Ile Val Glu Gln Gly Gly Asn Ile Ile Phe Gln
 130 135 140
 Ser Phe Gly Ser Tyr Phe Ile Tyr Asp Gly Lys Gly Thr Lys Gly Val
 145 150 155 160
 Arg Cys Pro Glu Leu Pro Leu Asn Leu Phe Arg Ile Gly Asp Thr Leu
 165 170 175
 Tyr Ser Gln Leu Ile Asn Gly Gly Val Cys Thr Phe Ala Gly Asp Lys
 180 185 190
 Phe Ile Pro Leu Ile Ser Arg Gln Glu Leu Gly Asp Ser Asp Val Leu
 195 200 205
 Ala Gly Leu Pro Tyr Pro Gly Gly Met Leu Leu Leu Thr Arg Asn Ser
 210 215 220
 Gly Gly Tyr Ile His Thr Ser Ser Gly Ile Arg Ser Trp His Thr Asp
 225 230 235 240
 Ser Asp Glu Glu Leu Lys Arg His Thr Val Asn Arg Ala Val Met Thr
 245 250 255
 Lys Asp Ser Cys Tyr Val Ile Gly Thr Ile Ser Asn Gly Leu Tyr Ala
 260 265 270
 Phe Ser Lys Glu Gly His Leu Leu Trp Lys Glu Asn Ala Asp Asn Gln
 275 280 285
 Leu Glu Asn Asn Thr Val Leu Gly Leu Tyr Cys Asp Met Asp Asn Asn
 290 295 300
 Ile Trp Thr Ala Leu Asp Asn Gly Ile Ala Tyr Val Arg Asn Asn Ser

305					310					315				320
Leu	Ile	Tyr	His	Phe	Glu	Pro	Val	Arg	Arg	Lys	Val	Gly	Met	Val
				325					330					335
Asp	Val	Leu	Val	Arg	Asp	Lys	Asp	Ala	Tyr	Ile	Ala	Ser	Asn	Gln
			340					345					350	
Leu	Tyr	Arg	Leu	Glu	Asp	Thr	Arg	Leu	Glu	Leu	Val	Pro	Gly	Leu
		355					360					365		
Glu	Gln	Ala	Trp	Thr	Ile	Gly	Glu	Trp	Gly	Gly	Gln	Val	Leu	Cys
	370					375					380			
His	Asn	Lys	Gly	Thr	Phe	Gln	Ile	Lys	Gly	Met	Gln	Ala	Arg	Leu
385					390					395				400
Ser	Asp	Val	Arg	Gly	Ala	Met	Cys	Met	Arg	Gln	Ala	Gln	Ile	Asn
				405					410					415
Glu	Gln	Leu	Leu	Ile	Gln	Gly	Thr	Tyr	Thr	Phe	Leu	Asn	Ile	Tyr
		420						425					430	
Lys	Ser	Ala	Ala	Gly	Glu	Trp	Tyr	Phe	Ala	Asn	Ser	Val	Gly	Asn
		435					440					445		
Ser	His	Met	Ala	Lys	Asn	Ile	Glu	Val	Asp	Ala	His	Gly	Asn	Ile
	450				455						460			
Val	Gln	His	Met	Arg	Lys	Gly	Leu	Tyr	Arg	Leu	Arg	Leu	Asp	Glu
465					470					475				480
Leu	Lys	Gln	Val	Thr	Asp	Leu	Lys	Gln	Tyr	Asp	Ser	Leu	Ser	Gly
				485					490					495
Gln	Gly	Gly	Asn	Cys	Tyr	Leu	Phe	Lys	Val	Asn	Gly	Arg	Val	Ala
			500					505					510	
Ser	Asp	Gly	Arg	Asn	Phe	Tyr	Thr	Tyr	Asp	Asp	Met	Ala	Asp	Ser
		515					520					525		
Ile	Pro	Tyr	Lys	Ala	Met	Asn	Glu	Gln	Leu	Ala	Thr	Leu	Arg	Gly
	530					535					540			
His	Thr	Val	Asp	Val	Met	Lys	Gly	Asp	Leu	Tyr	Trp	Phe	Leu	Ser
545					550					555				560
Arg	Glu	Ala	Tyr	Leu	Val	Arg	Cys	Thr	Val	Ser	Asp	Phe	Lys	Val
				565					570					575
Arg	Arg	Ile	Pro	Phe	Ser	Met	Phe	Gly	Asn	Leu	Pro	Ile	Glu	Gly
			580					585					590	
Ala	Arg	Ile	Val	Tyr	Asp	Arg	Arg	Asn	Asp	Cys	Ser	Tyr	Leu	Cys
	595						600					605		
Asn	Asn	Ser	Phe	Ala	Arg	Ile	Ala	Ala	Asp	Ser	Thr	Gly	Leu	Tyr
	610					615					620			
Ser	Arg	Gln	Lys	Pro	Ser	Leu	Trp	Val	Ser	Gly	Phe	Ser	Ala	Ser
625					630					635				640
Glu	Gln	Thr	Gly	Glu	Arg	Ile	Gln	Leu	Pro	Val	Ser	Gly	Thr	Asp
			645					650					655	
Ile	Ala	Ser	Ala	Phe	Asn	Asn	Ile	Ser	Ile	Ser	Leu	Ala	Tyr	Pro
		660						665					670	
Tyr	Asn	Asp	Phe	Ala	Leu	Asn	Val	Arg	Tyr	Arg	Leu	Glu	Gly	Leu
		675					680					685		
Ala	Ser	Gly	Lys	Trp	Thr	Glu	Gly	Leu	Pro	Asp	Leu	Gln	Lys	Glu
	690					695					700			
Thr	Arg	Leu	Pro	Phe	Gly	Ser	Tyr	Cys	Phe	Arg	Ala	Glu	Val	Tyr
705					710					715				720
Glu	Asn	Gly	Val	Ile	Ser	Ser	Val	Asp	Leu	Pro	Phe	Arg	Ile	Leu
			725						730					735
Pro	Trp	Tyr	Leu	Ser	Tyr	Pro	Ala	Val	Ala	Val	Tyr	Ala	Leu	Ser
			740					745					750	
Ile	Ala	Leu	Leu	Gly	Leu	Leu	Tyr	Gly	Val	Tyr	Val	Tyr	Thr	Lys
		755				760					765			
Lys	Lys	Lys	Asp	Val	Val	Ile	Glu	Arg	Gln	Arg	Ala	Arg	His	Glu
	770					775								780

Glu Ile Glu Gln Gln Glu Lys Lys Ile Met Glu Leu Glu Lys Glu Gln
 785 790 795 800
 Leu Glu Ala Asp Leu Arg Phe Lys Ser Lys Glu Leu Ser Gly Val Val
 805 810 815
 Met Thr Asn Ile Ala His Gln Glu Phe Leu Asn Ser Leu Lys Glu Glu
 820 825 830
 Leu Gln Gln Gln Lys Leu Ser Gly Gln Tyr Thr Arg Lys Asn Leu Asp
 835 840 845
 Lys Leu Leu Ser Met Ile Asn Gln Asn Met Val Ser Asp Glu Glu Asn
 850 855 860
 Trp Asn Met Phe Gln Ser Asn Phe Asp Arg Ile His Glu Asn Phe Phe
 865 870 875 880
 Arg Asn Leu Lys Glu Lys Phe Pro Asp Leu Thr Ser Gly Asp Leu Arg
 885 890 895
 Leu Cys Ala Leu Leu Arg Leu Asn Leu Pro Thr Lys Glu Ile Ala Lys
 900 905 910
 Leu Met Asn Ile Ser Val Arg Gly Val Asp Ala Ala Arg Tyr Arg Leu
 915 920 925
 Arg Lys Lys Leu Gly Leu Pro Pro Glu Ser Ser Leu Thr Asp Phe Met
 930 935 940
 Ile Ala Phe Lys
 945

<210> 10196
 <211> 360
 <212> PRT
 <213> B.fragilis

<400> 10196
 Ala Lys Glu Glu Cys Phe Val Phe Leu Asn Cys Asp Ala Lys Val Ile
 1 5 10 15
 Gly Tyr Phe Glu Ile Cys Asn Ile Phe Ala Lys Lys Ile Ser Glu Met
 20 25 30
 Asp Lys Ile Ile Gly Leu Gly Asn Ala Leu Val Asp Val Leu Ala Thr
 35 40 45
 Leu Lys Asp Asp Thr Leu Leu Asp Glu Met Gly Leu Pro Lys Gly Ser
 50 55 60
 Met Gln Leu Ile Asp Asp Ala Lys Leu Gln Gln Ile Asn Glu Arg Phe
 65 70 75 80
 Ser Gln Met Lys Thr His Leu Ala Thr Gly Gly Ala Ala Ala Asn Thr
 85 90 95
 Ile Leu Gly Leu Ala Cys Leu Gly Ala Gly Thr Gly Phe Ile Gly Lys
 100 105 110
 Ile Gly Asn Asp Ala Tyr Gly Asn Phe Phe Arg Ala Asn Leu Gln Arg
 115 120 125
 Asn Gly Ile Glu Asp Lys Leu Leu Val Ser Asp Leu Pro Ser Gly Val
 130 135 140
 Ala Ser Thr Phe Ile Ser Pro Asp Gly Glu Arg Thr Phe Gly Thr Tyr
 145 150 155 160
 Leu Gly Ala Ala Ser Thr Leu Lys Ala Glu Asp Leu Thr Leu Asp Met
 165 170 175
 Phe Lys Gly Tyr Ala Tyr Leu Leu Ile Glu Gly Tyr Leu Val Gln Asp
 180 185 190
 His Asp Met Ile Leu His Ala Ile Glu Leu Ala Lys Glu Ala Gly Leu
 195 200 205
 Gln Val Cys Leu Asp Met Ala Ser Tyr Asn Ile Val Ala Gly Asp Leu
 210 215 220
 Glu Phe Phe Thr Leu Leu Ile Asn Lys Tyr Val Asp Ile Val Phe Ala
 225 230 235 240

Asn Glu Glu Glu Ala Lys Ala Phe Thr Gly Lys Glu Asp Pro Lys Glu
 245 250 255
 Ala Leu Glu Leu Ile Ser Lys Lys Cys Ser Ile Ala Ile Val Lys Val
 260 265 270
 Gly Gly Asn Gly Ser Tyr Ile Arg Lys Gly Thr Glu Glu Ile Lys Val
 275 280 285
 Glu Ala Ile Pro Val Lys Lys Val Ile Asp Thr Thr Gly Ala Gly Asp
 290 295 300
 Tyr Phe Ala Ser Gly Phe Leu Tyr Gly Leu Thr Cys Gly Tyr Ser Leu
 305 310 315 320
 Glu Lys Cys Ala Lys Ile Gly Ser Ile Leu Ser Gly Asn Val Ile Gln
 325 330 335
 Ile Val Gly Thr Thr Ile Pro Gly Glu Arg Trp Asp Glu Ile Lys Leu
 340 345 350
 Asn Ile Asn Glu Val Leu Ser Glu
 355 360

<210> 10197

<211> 824

<212> PRT

<213> B.fragilis

<400> 10197

Lys Gln Ile Arg Met Lys Asn Val Leu Thr Gly Leu Phe Leu Leu Ile
 1 5 10 15
 Leu Ala Thr Ala Cys Ser Glu Glu Glu Pro Gln Thr Ile Thr Pro Val
 20 25 30
 Pro Phe Asn Gln Val Thr Leu Thr Asp Gly Phe Trp Lys Asn Arg Met
 35 40 45
 Gln Thr Glu Ile Asn Val Thr Val Pro Phe Ser Val Glu Gln Ser Ala
 50 55 60
 Pro Ala Val Glu Arg Phe Arg Arg Cys Ala Ala Phe Leu Ala Gly Asp
 65 70 75 80
 Ser Thr Ala Leu Pro Glu Thr His Arg Phe Ile Ser Ser Asp Leu Tyr
 85 90 95
 Lys Val Met Glu Gly Val Ser Tyr Ser Leu Met Ile Gln Pro Asn Lys
 100 105 110
 Glu Leu Glu Glu Phe Met Asp Arg Val Ala Asp Leu Ile Thr Ala Ser
 115 120 125
 Gln Lys Asp Asp Gly Tyr Leu Tyr Ile Ser His Ile Cys Gly Asn Pro
 130 135 140
 Asp Pro Arg Glu Met Gly Glu Lys Pro Tyr Ser Trp Val Val His Ser
 145 150 155 160
 His Glu Leu Tyr Asn Val Gly His Leu Tyr Glu Ala Ala Val Ala Tyr
 165 170 175
 Tyr Gln Ala Thr Gly Lys Asp Lys Leu Leu Asn Val Ala Ile Lys Ser
 180 185 190
 Ala Lys His Val Asn Lys Val Phe Phe Glu Gly Gly Asp Pro Asn Tyr
 195 200 205
 Asn Gly Gly Lys Pro Ile Asn Gln Ala Pro Gly His Glu Glu Ile Glu
 210 215 220
 Leu Ala Leu Cys Lys Leu Tyr Arg Val Thr Asn Asp Pro Leu Tyr Leu
 225 230 235 240
 Asp Met Ala Lys Lys Phe Leu Glu Ile Arg Gly Val Thr Tyr Arg Pro
 245 250 255
 Glu Gly Glu Gly Val Met Ala Pro Thr Tyr Ala Gln Gln His Ala Pro
 260 265 270
 Val Lys Glu Gln Thr Glu Ala Val Gly His Ala Val Arg Ala Ala Tyr
 275 280 285

10197
 824
 PRT
 B.fragilis
 10197

Leu Tyr Thr Ala Met Ala Gln Val Asp Ala Leu Thr Gly Leu Asn Asp
 290 295 300
 Tyr Thr Lys Ala Leu Asn Ser Ile Trp Thr Asn Leu Val Thr Thr Arg
 305 310 315 320
 Met His Ile Thr Gly Leu Gly Ala Val Glu Gly Met Glu Gly Phe
 325 330 335
 Gly Ala Pro Tyr Glu Leu Pro Asn Leu Thr Ala Tyr Asn Glu Thr Cys
 340 345 350
 Ala Ala Val Ala Asn Val Phe Phe Asn Tyr Gly Met Tyr Leu Asp Ser
 355 360 365
 Gly Asp Ala Lys Phe Leu Asp Ile Ala Glu Leu Ser Leu Phe Asn Asn
 370 375 380
 Ser Leu Ala Gly Ile Asn Leu His Gly Asp Arg Phe Phe Tyr Val Asn
 385 390 395 400
 Pro Leu Glu Ala Asp Gly Val Arg Arg Phe Asn His Gly Asn Gly Gly
 405 410 415
 Arg Ala Lys Trp Phe Gly Cys Ala Cys Cys Pro Pro Asn Ile Ser Arg
 420 425 430
 Leu Ile Leu Gln Val Pro Gly Tyr Met Tyr Ala Tyr Ser Lys Asp Arg
 435 440 445
 Val Tyr Leu Thr Leu Tyr Gly Ser Gln Thr Thr Ile Pro Leu Glu
 450 455 460
 Gly Thr Arg Val Lys Leu Glu Gln Thr Ser Ala Tyr Pro Phe Asp Gly
 465 470 475 480
 Lys Val Arg Leu Thr Val Gln Pro Glu Lys Gly Ser Lys Phe Ser Val
 485 490 495
 Cys Met Arg Ile Pro Thr Trp Ala Arg Ser Asp Glu Phe Val Pro Gly
 500 505 510
 Gly Leu Tyr Pro Tyr Lys Gln Pro Lys Gln Ala Glu Val Glu Leu Ser
 515 520 525
 Val Asn Gly Gln Lys Thr Asp Phe Lys Met Glu Lys Gly Phe Ala Val
 530 535 540
 Ile Lys Arg Asp Trp Lys Pro Gly Asp Val Val Glu Leu Asn Ile Pro
 545 550 555 560
 Met Pro Val Arg Phe Val Asp Cys Ile Pro Glu Val Ser Glu Asn Ile
 565 570 575
 Gly Lys Thr Ala Val Thr Arg Gly Pro Leu Val Tyr Cys Ala Glu Glu
 580 585 590
 Val Asp Asn Ala Gly Pro Val Gln Arg Leu Tyr Leu Gly Asp Thr Asn
 595 600 605
 Glu Ala Gln Ala Lys Val Ala Asn Ile Ser Ser Gly Val Leu Gln Gly
 610 615 620
 Leu Glu Arg Ile Thr Leu Pro Gly Met Glu Lys Lys Val Gly Gly Ile
 625 630 635 640
 Thr Ser Arg Glu Ile Thr Met Ile Pro Tyr Tyr Ala Trp Cys Asn Arg
 645 650 655
 Gly Asp Asn Arg Thr Met Leu Val Trp Leu Asn Glu Glu Ala Ser Thr
 660 665 670
 Ala Ser Ile Gly Gln Gln Thr Met Ala Tyr Leu Arg Asn Val Lys Gly
 675 680 685
 Val Asn Ala Ser Ser Val Ala Gly Gly Lys Asn Ile Ser Val Arg Ala
 690 695 700
 Leu Cys Asp Gly Lys Val Ser Glu Ser Ser Ala Asp Lys Leu Thr Glu
 705 710 715 720
 Gln Trp Val Ser Glu Gly Ser Gly Lys Gln Trp Val Gln Val Asp Phe
 725 730 735
 Arg Glu Pro Phe Leu Leu Asn Ser Leu Ser Val Tyr Trp Leu Asp Asp
 740 745 750
 Gln Asp Lys Ile Thr Val Pro Ser Gly Trp Ser Val Glu Tyr Lys Ser

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      755              760              765
Asp Ala Gly Trp Thr Pro Leu Glu Leu Tyr Val Thr Asp Ser Tyr Gln
770              775              780
Met Gly Thr Asp Arg Phe Asn Val Val His Pro Ser Gly Ser Leu Glu
785              790              795              800
Val Glu Ser Val Arg Ile Leu Ile Glu Pro Gln Lys Gly Lys Ser Ile
      805              810              815
Gly Val Ser Glu Ile Arg Phe Glu
      820

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<210> 10198

<211> 1009

<212> PRT

<213> B.fragilis

<400> 10198

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Val Cys Ser Arg Ile Leu Asn Gln Tyr Gln Thr Met Lys Lys Asn Leu
1              5              10              15
Phe Thr Leu Cys Met Met Leu Leu Leu Ser Met Leu Ser Phe Ala Gln
      20              25              30
Gly Ser Leu Thr Ile Ser Gly Val Val Thr Glu Lys Lys Thr Gly Glu
      35              40              45
Pro Ile Ile Gly Ala Ser Ile Leu Leu Lys Gly Gln Ser Ser Gly Thr
      50              55              60
Ile Thr Asp Phe Asn Gly Asn Tyr Ser Ile Pro Asn Val Pro Ser Gly
65              70              75              80
Ala Thr Leu Val Phe Ser Tyr Ile Gly Met Lys Thr Gln Glu Val Lys
      85              90              95
Val Thr Ala Ser Ser Lys Leu Asp Ile Ser Leu Glu Glu Asp Asn Gln
      100              105              110
Leu Ile Asp Glu Val Val Val Ile Gly Tyr Gly Ile Gln Arg Lys Ser
      115              120              125
Asp Leu Thr Gly Ser Val Gly Ala Val Lys Ser Lys Asp Leu Thr Lys
      130              135              140
Val Ala Thr Pro Asn Val Ala Asn Ala Leu Gln Gly Arg Val Ser Gly
145              150              155              160
Val Tyr Ile Ser Ala Asn Gly Ala Pro Gly Ser Ser Pro Glu Val Arg
      165              170              175
Ile Arg Gly Ile Gly Thr Thr Asn Asn Ser Asn Pro Leu Tyr Val Val
      180              185              190
Asp Gly Met Phe Met Asp Asp Ile Ser Phe Leu Ser Thr His Asp Ile
      195              200              205
Glu Ser Met Glu Val Leu Lys Asp Ala Ser Ala Thr Ala Met Tyr Gly
      210              215              220
Ser Arg Gly Ala Asn Gly Val Ile Ile Val Thr Thr Lys Gln Gly Thr
225              230              235              240
Glu Gly Lys Ala Val Val Asn Phe Thr Ala Ser Glu Gly Phe Gln Phe
      245              250              255
Asn Asn Ser Ser Phe Glu Met Ala Asn Ala Thr Glu Tyr Ala Thr Leu
      260              265              270
Leu Asn Glu Ala Leu Val Asn Thr Gly Gly Lys Pro Lys Phe Asp Asp
      275              280              285
Pro Ala Ser Leu Gly Lys Gly Thr Asn Trp Phe Asp Glu Ile Phe Arg
290              295              300
Val Ala Ser Val Arg Asp Tyr Gln Leu Ser Val Ser Gly Gly Ser Glu
305              310              315              320
Lys Val Arg Tyr Asn Leu Ser Ala Gly Tyr Tyr Gln Gln Asp Gly Ile
      325              330              335
Ile Thr Gly Asn Thr Tyr Asn Arg Phe Thr Leu Arg Ala Asn Asn Ser

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Gly Asn Ser Gly Gln Gln Tyr Gln Asn Asn Val Gly Pro Gly Asp Leu
 820 825 830
 Ile Tyr Glu Asp Val Asp Gly Asp Gly Tyr Ile Thr Ala Asn Asp Arg
 835 840 845
 Lys Asp Leu Gly Ser Pro Thr Pro Lys Phe Ile Gly Gly Leu Gly Ile
 850 855 860
 Ser Ala Ser Trp Lys Gly Phe Asp Leu Ser Ile Asp Phe Gln Gly Asn
 865 870 875 880
 Phe Gly Asn Lys Ile Phe Asn Ala Lys Gln Val Glu Arg Phe Ser Gly
 885 890 895
 Ser Asp Asn Trp Asp Arg Ser Phe Leu Asp Arg Trp Thr Pro Glu Asn
 900 905 910
 Pro Asn Thr Met Thr Pro Arg Met Thr Leu Glu Gly Asn Asn Tyr Gln
 915 920 925
 Val Ser Ser Arg Tyr Val Glu Ser Gly Ser Tyr Val Lys Leu Gln Thr
 930 935 940
 Val Glu Leu Gly Tyr Thr Phe Pro Lys Ser Trp Met Gln Lys Val Ser
 945 950 955 960
 Val Gln Asn Leu Arg Val Tyr Phe Ser Gly Asn Asn Leu Ala Tyr Phe
 965 970 975
 Thr Gly Tyr Asn Gly Phe Thr Pro Glu Val Leu Gly Gly Ile Asp Arg
 980 985 990
 Gln Ile Tyr Pro Val Thr Ala Thr Cys Arg Phe Gly Leu Asn Val Thr
 995 1000 1005
 Phe

<210> 10199

<211> 576

<212> PRT

<213> B.fragilis

<400> 10199

Ile Thr Thr Met Lys Gln Leu Phe Leu Leu Leu Leu Ala Leu Gly Ala
 1 5 10 15
 Pro Ala Leu Ala Leu Ala Gln Asp Met Arg Gln Asp Thr Tyr Cys Asn
 20 25 30
 Pro Leu Asn Ile Asp Tyr Thr Tyr Met Ile Tyr Asn Ser Asp Lys Asp
 35 40 45
 Ile Ser Tyr Arg Ser Gly Ala Asp Pro Ala Val Val Arg Phe Arg Gly
 50 55 60
 Glu Tyr Tyr Met Phe Val Thr Arg Ser Asn Gly Tyr Trp His Ser Lys
 65 70 75 80
 Asp Leu Leu Asp Trp Asp Phe Ile Ala Pro Lys Asp Trp Tyr Pro Gln
 85 90 95
 Gly Ser Asn Ala Pro Ala Ala His Asn Tyr Lys Asp Ser Val Leu Tyr
 100 105 110
 Val Thr Gly Asp Pro Ser Gly Ser Met Ser Ile Leu Tyr Ser Asp Asn
 115 120 125
 Pro Lys Ser Gly Glu Trp Lys Ala Thr Pro Ala Ile Leu His Asn Leu
 130 135 140
 Gln Asp Pro Asp Leu Phe Ile Asp Asp Asp Gly Lys Ala Tyr Met Phe
 145 150 155 160
 Trp Gly Ser Ser Asn Val Tyr Pro Ile Arg Gly Met Glu Leu Asp Lys
 165 170 175
 Asn His Arg Phe Leu Pro Lys Gly Glu Val Lys Glu Leu Phe Asn Leu
 180 185 190
 Asp Met Pro Arg His Gly Trp Glu Arg Phe Gly Glu Asn His Ser Asp
 195 200 205

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Thr Val Leu Gly Gly Tyr Ile Glu Gly Pro Trp Leu Thr Lys Tyr Asn
210                215                220
Gly Lys Tyr Tyr Met Gln Tyr Gly Ala Pro Gly Thr Glu Phe Asn Val
225                230                235                240
Tyr Ala Asp Gly Val Tyr Val Ala Asp His Pro Met Gly Pro Tyr Thr
                245                250                255
Tyr Gln Lys His Asn Pro Val Ser Tyr Lys Pro Gly Gly Tyr Met Asn
                260                265                270
Gly Ala Gly His Gly Ser Thr Val Gln Gly Pro Gly Gly Glu Tyr Trp
                275                280                285
His Phe Ala Ser Met Ala Leu Ser Ile Asn Val Asn Trp Glu Arg Arg
290                295                300
Leu Cys Met Phe Pro Ala Gly Phe Asp Lys Asp Gly Ile Met Tyr Val
305                310                315                320
Asp Thr Arg Phe Gly Asp Tyr Pro Arg Tyr Ala Pro Ala Val Pro Gly
                325                330                335
Lys Lys Gly Gln Phe Arg Gly Trp Met Leu Leu Ser Tyr Arg Lys Pro
                340                345                350
Val Thr Ala Ser Thr Ala Lys Gly Glu Phe Gly Pro Asp Ala Leu Thr
                355                360                365
Asp Glu Arg Thr Lys Ser Phe Trp Leu Ala Glu Ala Asn Asp Glu Arg
370                375                380
Gln Trp Val Leu Ile Asp Leu Glu Lys Pro Ala Arg Val Cys Ala Val
385                390                395                400
Gln Val Asn Tyr His Asp Tyr Arg Ser Asn Leu Tyr Gly Arg Ile Pro
                405                410                415
Gly Leu Arg His Arg Tyr Val Ile Glu Gly Ser Ser Asp Gly Glu Thr
                420                425                430
Trp Asn Ile Leu Val Asp Arg Arg Ser Ser Tyr Lys Asp Thr Pro Asn
                435                440                445
Asp Tyr Val Glu Leu Glu Val Pro Thr Thr Ala Arg Tyr Ile Arg Tyr
450                455                460
Lys Asn Ile Asp Val Pro Thr Pro Asn Leu Ala Ile Ser Glu Leu Arg
465                470                475                480
Val Phe Gly Leu Gly Phe Gly Lys Ala Pro Arg Ser Pro Gln Lys Leu
                485                490                495
Ala Leu Asp Arg His Thr Asp Arg Cys Asp Val Thr Val Arg Trp Glu
500                505                510
Pro Val Lys Gly Ala Gln Gly Tyr Asn Val Leu Trp Gly Ile Ala Pro
515                520                525
Asp Lys Leu Tyr Ser Ser Trp Met Val Tyr Gly Gly Asn Glu Leu Glu
530                535                540
Met Lys Ser Leu Thr Ile Asp Gln Asp Tyr Tyr Phe Ala Val Glu Ala
545                550                555                560
Phe Asn Glu Asn Gly Val Ser Leu Pro Ser Glu Thr Lys Tyr Val Glu
                565                570                575

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<210> 10200
 <211> 514
 <212> PRT
 <213> B.fragilis

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<400> 10200
Val Arg Arg Met Ser Phe Ile Pro Asn Lys Glu Glu Ile Ala Ser Leu
1                5                10                15
Glu Tyr Tyr Glu Glu Asn Tyr Val Trp Gly Gln Leu Gln Arg Thr Asp
                20                25                30
Glu Glu Tyr Pro Tyr Pro Tyr Gly Ile Tyr Gly Ser Glu Asn Trp Tyr
35                40                45

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Gln Asn Arg Ser Gly Lys Tyr Gly Gly Tyr Glu Asp Gly Gly Ser Gly
 50 55 60
 Lys Gly Arg Met Trp Arg Thr Phe Asp Tyr Thr His Phe Ala Ile
 65 70 75 80
 Tyr Tyr Asn Leu Tyr Arg Ile Ala Glu Asp Asn Pro Glu Met Val Ser
 85 90 95
 Tyr Leu Asp Ala Asp Gly Tyr Leu Glu Arg Ala Tyr Arg Thr Ala Ile
 100 105 110
 Ala Tyr Phe Glu Val Pro Tyr Asn Ile Leu Met Gly Lys Gln Trp Ala
 115 120 125
 Phe His Gly Trp Thr Asp Trp Ala Tyr Lys Gln Gly Asn Phe His Glu
 130 135 140
 Arg Tyr Leu Leu Asp Ile Ile Asn Ala Leu Gln Gln Lys Gly Arg Leu
 145 150 155 160
 Lys Asp Ala Ala Lys Leu Arg Arg Glu Trp Glu Lys Lys Val Thr Tyr
 165 170 175
 Met Val Tyr Glu Asp Pro Trp Pro Phe Gly Ser Glu Met Phe Val Asp
 180 185 190
 Arg Thr Ala Phe Glu Ser Ser Tyr Tyr Val Ala Glu Tyr Ala Lys Leu
 195 200 205
 Asn Pro Ile Lys Pro Glu Glu Gln Phe Trp Tyr Asp Lys Asn Arg Lys
 210 215 220
 Lys Trp Tyr Ser Tyr Thr Ser Phe Asp Thr Ser Met Ile Asp Arg Phe
 225 230 235 240
 Met Gln Asn Gln Leu Asp Gly Asn Leu Ala Leu Arg Gly Leu Phe Glu
 245 250 255
 Pro Gly Tyr Ala Asn Leu Gly Thr Ala Trp Ser Gly Gln Tyr Val Asn
 260 265 270
 Leu Asp Tyr Met Thr Gln Met Gly Gly Val Ala Leu Leu Asp Tyr Ala
 275 280 285
 Tyr Arg Phe Ser Asp Arg Pro Asp Arg Tyr Ile Asn Tyr Gly Tyr Asn
 290 295 300
 Ser Leu Leu Ala Ser Trp Ala Leu Met Asn Thr Gly Thr Lys Lys Thr
 305 310 315 320
 Asp Phe Gly Tyr Trp Tyr Arg Gly Glu Gln Asn Asp Gly Ala Val Gly
 325 330 335
 Trp Ala Phe Ser Pro Tyr Gln Asn Ser Arg Thr Tyr Met Asn Tyr Ile
 340 345 350
 Lys Val Gly Arg Ala Pro Trp Arg Phe Asp Gly Glu Ile Asp His Gly
 355 360 365
 Leu Thr Gly Gly Ile His Gly Ser Gly Val Tyr Leu Leu Asp Asp Pro
 370 375 380
 Asp Phe Gly Leu Ile Gly Tyr Gly Gly Asn Val Arg Met Asp Lys Asp
 385 390 395 400
 Gly Thr Val Ser Ile Ile Pro Phe Asp Gly Val Arg Arg Gln Val Arg
 405 410 415
 Ile Met Thr Pro Val Arg Phe Ser Val Glu Leu Met Gln Asp Gly Phe
 420 425 430
 Arg Lys Asp Tyr Pro Ile Thr Leu Arg Gly Thr Glu Glu Leu Ser Phe
 435 440 445
 Cys Ile Glu Asn Arg Ser Asp Lys Pro His Asn Thr Thr Ile Arg Ala
 450 455 460
 Glu Gly Met Pro Glu Gly Lys Tyr Thr Val Met Thr Asp His Lys Met
 465 470 475 480
 Ile Thr Thr Phe Asn Ile Glu Ala Gly Asn Ala His His Pro Tyr Tyr
 485 490 495
 Ile Glu Val Pro Val Thr Asp Lys His Thr Gln Val Lys Leu Leu Lys
 500 505 510
 Thr Asn

<210> 10201
 <211> 437
 <212> PRT
 <213> B.fragilis

<400> 10201

Asn	Leu	Glu	Leu	Thr	Thr	Thr	Met	Lys	His	Thr	Leu	Leu	Phe	Leu	Leu
1				5					10					15	
Met	Ile	Cys	Ala	Cys	Thr	Leu	Gln	Ala	Thr	Ala	Thr	Gly	Lys	Gln	Pro
			20					25					30		
Arg	Leu	Thr	Asp	Asp	Glu	Leu	Met	Thr	Leu	Val	Gln	Lys	Gln	Thr	Phe
		35					40					45			
Arg	Tyr	Phe	Trp	Asp	Phe	Ala	His	Pro	Glu	Ser	Gly	Leu	Ala	Arg	Glu
	50					55					60				
Arg	Ser	Asn	Asp	Arg	Leu	Glu	Ile	Ala	Thr	Ile	Gly	Gly	Ser	Gly	Phe
65					70					75					80
Gly	Val	Met	Ala	Ile	Ile	Val	Gly	Val	Glu	Arg	Gly	Phe	Ile	Thr	Arg
				85					90					95	
Glu	Gln	Gly	Ala	Glu	Arg	Leu	Leu	Lys	Ile	Val	Glu	Phe	Leu	Asn	Lys
			100					105					110		
Ala	Asp	Ser	Tyr	His	Gly	Ile	Trp	Ala	His	Trp	Met	Asp	Gly	Thr	Thr
			115				120					125			
Gly	Lys	Thr	Ile	Pro	Phe	Ser	Arg	Lys	Asp	Asp	Gly	Ala	Asp	Leu	Val
	130					135					140				
Glu	Ser	Ala	Phe	Met	Phe	Glu	Gly	Leu	Leu	Ala	Ala	His	Gln	Tyr	Phe
145					150					155					160
Thr	His	Asp	Asn	Pro	Thr	Glu	Asn	Arg	Ile	Arg	Gly	Leu	Ile	Asn	Thr
				165					170					175	
Leu	Trp	His	Gln	Ala	Glu	Trp	Asp	Trp	Phe	Thr	Arg	Gly	Gly	Glu	Asp
			180					185					190		
Val	Leu	Tyr	Trp	His	Trp	Ser	Pro	Asn	Asn	Gly	Trp	Ala	Met	Asn	His
		195				200						205			
Gln	Leu	Lys	Gly	Gln	Asn	Glu	Cys	His	Ile	Thr	Tyr	Ile	Leu	Ala	Ala
	210					215					220				
Ser	Ser	Pro	Thr	Tyr	Pro	Ile	Arg	Glu	Ser	Val	Tyr	His	Lys	Gly	Trp
225					230					235					240
Ala	Asn	Ser	Ile	Thr	Phe	Lys	Asn	Gly	Lys	Glu	Tyr	Tyr	Gly	Ile	Arg
				245					250					255	
Leu	Pro	Leu	Gly	Thr	Asp	Phe	Gly	Gly	Pro	Leu	Phe	Phe	Thr	His	Tyr
			260				265						270		
Ser	Tyr	Leu	Gly	Leu	Asp	Pro	Arg	Gly	Leu	Lys	Asp	Ser	Tyr	Ala	Asp
	275					280						285			
Tyr	Gly	Glu	Gln	Met	Lys	Ala	His	Thr	Leu	Ile	Asn	Arg	Ala	Tyr	Cys
	290					295					300				
Ile	Asp	Asn	Pro	Lys	Lys	Tyr	Lys	Gly	Tyr	Gly	Arg	Lys	Cys	Trp	Gly
305					310					315					320
Leu	Thr	Ala	Ser	Asp	Asn	His	Gln	Gly	Tyr	Ser	Ala	His	Cys	Pro	Gln
				325					330					335	
Asn	Asp	Leu	Gly	Val	Ile	Thr	Pro	Thr	Ala	Ala	Ile	Ser	Ser	Ile	Pro
		340						345						350	
Tyr	Thr	Pro	Glu	His	Ser	Leu	Glu	Ala	Met	Arg	Tyr	Phe	Tyr	Glu	Glu
	355						360					365			
Leu	Gly	Asp	Arg	Leu	Trp	Gly	Glu	Tyr	Gly	Phe	Lys	Asp	Ala	Phe	Asn
	370					375					380				
Leu	Thr	Glu	Asn	Trp	Phe	Ala	Ser	Ser	Tyr	Leu	Ala	Ile	Asp	Gln	Gly
385					390					395					400
Pro	Ile	Ile	Val	Met	Ile	Glu	Asn	Tyr	Arg	Ser	Gly	Leu	Ile	Trp	Lys

10201
 437
 PRT
 B.fragilis
 10201
 437
 PRT
 B.fragilis

405 410 415
 Leu Phe Met Ser His Pro Asp Val Gln Arg Gly Leu Lys Arg Leu Gly
 420 425 430
 Phe Gly Ser Glu Glu
 435

<210> 10202
 <211> 113
 <212> PRT
 <213> B.fragilis

<400> 10202
 Ser Leu His Ala Pro Gln Leu Pro Phe His Tyr Gly Tyr Pro Cys Arg
 1 5 10 15
 Glu Lys Tyr Val His His Thr Tyr His Pro Thr Ala Met Ser His Thr
 20 25 30
 Gly Tyr Asn Tyr Gly His Tyr Gln Pro Phe Arg Leu His Gly Pro Thr
 35 40 45
 His Ser Asp Arg Leu Ser Ser Ser Val Asn Asn Tyr Lys Tyr Ile
 50 55 60
 Gly Tyr Asn Tyr Ser Glu Tyr Thr Asp Pro Arg Ser Ser Ser Gly Glu
 65 70 75 80
 Gly Val Asp Gly Arg Met Arg Glu Tyr Gln Thr Thr Thr Val Arg Arg
 85 90 95
 Tyr Ser Asn His Met Ile Arg Phe Asn Lys Met Phe Gly Lys His Ser
 100 105 110
 Ile

<210> 10203
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 10203
 Arg Met Lys Asn Ser Ala Cys His Cys Val Leu Val Arg Val Ala Glu
 1 5 10 15
 Lys Ala Asp Asn Ala Arg Asn Tyr Ser Gln Cys Asp Ser Leu Leu Leu
 20 25 30
 Gly Asp Lys Cys Gly Ala His Thr Phe Pro Tyr Met Asp Ile His Asn
 35 40 45
 Glu Thr Ala Val Val Glu His Glu Ala Thr Thr Ser Lys Ile Ser Glu
 50 55 60
 Asp Gln Ile Phe Tyr Cys Asn Gln Gly Gly Thr Asn Gly Phe Pro Arg
 65 70 75 80
 Gly Leu Gln Arg Ala Ala Leu Phe Ile
 85

<210> 10204
 <211> 77
 <212> PRT
 <213> B.fragilis

<400> 10204
 Arg Leu Ile Asp Thr Ala Ser Val Tyr Gly Asn Glu Arg Ala Val Gly
 1 5 10 15
 Met Ala Ile Arg Lys Ser Gly Ile Pro Arg Glu Glu Leu Phe Ile Thr
 20 25 30
 Thr Lys Ala Trp Ile Ser Glu Met Gly Tyr Glu Arg Thr Leu Arg Ala

35	40	45
Leu Asp Thr Ser Leu Ala Arg Leu Gly Leu Asp Tyr Leu Asp Val Tyr		
50	55	60
Ile Glu Cys Leu Pro Asn Ile Leu Leu Lys Arg Ile Ile		
65	70	75

<210> 10205
 <211> 187
 <212> PRT
 <213> B.fragilis

<400> 10205

Gly Ala Ala Pro Ser Ser Pro Val Val Lys Thr Phe Ala Asp Gly Phe		
1	5	10
Glu Glu Ile Glu Ala Leu Thr Thr Ile Asp Thr Leu Arg Arg Ala Gly		
20	25	30
Leu Asp Val Glu Ile Val Ser Val Thr Pro Asp Glu Ile Val Val Gly		
35	40	45
Ala His Asp Val Ser Val Leu Cys Asp Lys Asn Phe Glu Asn Cys Asp		
50	55	60
Phe Phe Asp Ala Glu Leu Phe Leu Pro Gly Gly Met Pro Gly Ala		
65	70	75
Ala Thr Leu Asp Lys His Glu Gly Leu Arg Lys Leu Ile Leu Ser Phe		
85	90	95
Ala Glu Lys Asn Lys Pro Ile Ala Ala Ile Cys Ala Ala Pro Met Val		
100	105	110
Leu Gly Lys Leu Gly Leu Leu Lys Gly Arg Arg Val Thr Cys Tyr Pro		
115	120	125
Ser Phe Glu Gln Tyr Leu Asp Gly Ala Asp Cys Thr Asn Glu Pro Val		
130	135	140
Val Arg Asp Gly Asn Ile Ile Thr Gly Met Gly Pro Gly Ala Ala Met		
145	150	155
Glu Phe Ala Leu Thr Ile Val Asp Thr Leu Leu Gly Lys Glu Lys Val		
165	170	175
Asn Glu Leu Val Glu Ala Met Cys Val Arg Arg		
180	185	

<210> 10206
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 10206

Asp Cys Thr His Phe Gln Val Phe Ile Phe Met Glu Phe Arg Arg Asp		
1	5	10
Asn Phe Pro Phe Leu Leu Thr Lys Asn Gln Phe Met Lys Lys Val Leu		
20	25	30
Phe Ile Leu Leu Gly Cys Leu Leu Ser Phe Asn Val Met Ala Gln Val		
35	40	45
Lys Ala Ile Ser Gly Leu Val Thr Asp Val Thr Gly Glu Pro Val Ile		
50	55	60
Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp		
65	70	75
Leu Asn Gly Lys Phe Ser Leu Lys Val Ala Pro Asn Ser Gln Phe Leu		
85	90	95
Val Ser Tyr Ile Gly Tyr Lys Gln Gln Thr Ile Lys Val Gly Ser Glu		
100	105	110
Ser Thr Tyr Asn Ile Val Phe Thr Thr Gly Leu Glu Gly Ser Ala Leu		
115	120	125

Ala Ile Arg Ser Glu Asn
130

<210> 10207
<211> 70
<212> PRT
<213> B.fragilis

<400> 10207
Ser Pro Leu Ser Val Ser Val Arg Phe Pro Ser Ala Leu Ser Ala Gly
1 5 10 15
Asn Gly Asp Val Arg Gly Leu Trp Leu Gly Ala Gly Leu Val Ser Leu
20 25 30
Gly Ala Ala Phe Leu Leu Asp Lys Lys Tyr Glu Met Thr Ser Asp Leu
35 40 45
Tyr Pro Val Asn Val Cys Tyr Asn Val Met Leu Ala Val Glu Pro Glu
50 55 60
Cys Pro Asp Ser Arg Leu
65 70

<210> 10208
<211> 374
<212> PRT
<213> B.fragilis

<400> 10208
Glu Asp Ile Thr His Ile Pro Val Ile Glu Asp Ser Ala Ser Val Ser
1 5 10 15
Val Thr Ala Asp Ser Val Ala Val Lys Arg Ser Phe Phe Lys Lys Phe
20 25 30
Leu Asp Tyr Phe Asn Asp Ala Asn Lys Glu Lys Lys Asn Lys Lys Phe
35 40 45
Asp Phe Ser Val Ile Gly Gly Pro His Tyr Ser Ser Asp Thr Lys Leu
50 55 60
Gly Leu Gly Leu Val Ala Gly Leu Tyr Arg Thr Asp Arg Ala Asp
65 70 75 80
Thr Leu Leu Pro Leu Ser Thr Val Ser Leu Tyr Gly Asp Val Ser Thr
85 90 95
Val Gly Phe Tyr Leu Leu Gly Val Arg Gly Ser His Ile Phe Pro Lys
100 105 110
Asp Lys Tyr Arg Leu Asn Tyr Asn Leu Tyr Phe Tyr Ser Phe Pro Ser
115 120 125
Leu Tyr Trp Gly Val Gly Tyr Arg Asn Ala Val Asn Asp Glu Asn Glu
130 135 140
Ser Ser Tyr Lys Arg Phe Gln Ala Gln Val Lys Val Asp Phe Met Phe
145 150 155 160
Arg Met Ala Lys Asn Phe Tyr Leu Gly Pro Met Ala Ser Phe Asp Tyr
165 170 175
Ile Asp Gly Arg Asn Phe Glu Lys Pro Glu Leu Trp Gln Gly Met Asp
180 185 190
Ala Arg Thr Ser Asn Val Ser Ala Gly Leu Ser Leu Val Tyr Asp Ser
195 200 205
Arg Asp Phe Leu Thr Asn Ala Tyr Lys Gly Tyr Tyr Leu Arg Ile Asp
210 215 220
Gln Arg Phe Ser Pro Ala Phe Leu Gly Asn Asp Tyr Ala Phe Ser Ser
225 230 235 240
Thr Glu Leu Thr Thr Ser Tyr Tyr Arg Arg Val Trp Lys Gly Gly Ile
245 250 255
Leu Ala Gly Gln Phe His Thr Leu Leu Thr Tyr Gly Asn Pro Pro Trp

		260						265					270				
Gly	Leu	Met	Ala	Thr	Leu	Gly	Ser	Ser	Tyr	Ser	Met	Arg	Gly	Tyr	Tyr		
		275					280					285					
Asp	Gly	Arg	Tyr	Arg	Asp	Lys	Asn	Val	Val	Asp	Met	Gln	Val	Glu	Leu		
		290				295					300						
Arg	Gln	His	Val	Trp	Lys	Arg	Asn	Gly	Val	Ala	Val	Trp	Val	Gly	Ala		
305					310					315					320		
Gly	Asn	Val	Phe	Pro	Asp	Phe	Ser	Ser	Phe	Lys	Val	Lys	His	Ile	Leu		
			325						330					335			
Pro	Asn	Tyr	Gly	Phe	Gly	Tyr	Arg	Trp	Glu	Phe	Lys	Lys	Arg	Val	Asn		
		340						345					350				
Val	Arg	Leu	Asp	Leu	Gly	Phe	Gly	Lys	Gly	Gln	Thr	Gly	Phe	Ile	Phe		
		355					360					365					
Asn	Ile	Asn	Glu	Ala	Phe												
		370															

<210> 10209

<211> 69

<212> PRT

<213> B.fragilis

<400> 10209

Leu	Lys	Arg	Ala	Pro	Gly	Asn	Pro	Pro	Asn	Gly	Gly	Lys	Gln	Leu	Pro		
1				5					10					15			
Gln	Leu	Phe	Leu	Gln	Lys	Lys	Phe	Phe	Ser	Pro	Val	Ser	Gln	Arg	Lys		
			20					25					30				
Lys	Gly	Lys	Tyr	Arg	Ala	Arg	Asn	Thr	Leu	Phe	Asn	Glu	Lys	Arg	Pro		
		35					40					45					
Tyr	Ile	Thr	Leu	Glu	Lys	Lys	Phe	Val	Gly	Tyr	Lys	Glu	Met	Glu	Trp		
	50					55					60						
Ser	Lys	Ala	Ile	Asn													
65																	

<210> 10210

<211> 187

<212> PRT

<213> B.fragilis

<400> 10210

Gly	Leu	Glu	Lys	Ala	Arg	Pro	Asp	Leu	Tyr	Leu	Ile	Ser	Met	Lys	Leu		
1				5					10					15			
Phe	Asn	Ser	Ile	Lys	Lys	Trp	Phe	Gly	Asn	Gln	Glu	Asn	Leu	Phe	Tyr		
			20					25					30				
Leu	Phe	Leu	Phe	Val	Leu	Ile	Val	Pro	Asn	Val	Val	Leu	Cys	Phe	Thr		
		35					40					45					
Glu	Pro	Leu	Pro	Leu	Val	Ala	Lys	Ile	Ala	Asn	Val	Leu	Leu	Pro	Leu		
		50				55					60						
Gly	Cys	Tyr	Tyr	Leu	Ile	Met	Thr	Leu	Ser	Arg	Asn	Cys	Gly	Lys	Met		
65					70					75					80		
Leu	Trp	Ile	Leu	Phe	Leu	Phe	Val	Phe	Phe	Gly	Ala	Phe	Gln	Ile	Val		
				85					90					95			
Leu	Leu	Tyr	Leu	Phe	Gly	Gln	Ser	Ile	Ile	Ala	Val	Asp	Met	Phe	Leu		
		100						105					110				
Asn	Leu	Ala	Thr	Thr	Asn	Ser	Ser	Glu	Ala	Met	Glu	Leu	Leu	Asp	Asn		
		115					120					125					
Leu	Leu	Pro	Ala	Leu	Ile	Thr	Ile	Val	Ile	Leu	Tyr	Ile	Pro	Ala	Leu		
		130				135					140						
Ile	Leu	Gly	Met	Ile	Ser	Ile	Val	Arg	Lys	Arg	Thr	Leu	Ser	Val	Gly		
145					150					155					160		

Phe Ile Arg Arg Glu Arg Arg Arg Ala Trp Val Val Ala Gly Cys Arg
 165 170 175
 Ser Gly Ile Val Gly Ser Gly Leu Pro Val Gly
 180 185

<210> 10211
 <211> 68
 <212> PRT
 <213> B.fragilis

<400> 10211
 Arg Asp Phe Glu Gly Phe His Phe His Cys Arg Arg Thr His Pro Ala
 1 5 10 15
 Glu Asp Arg Glu Ile Tyr Val Leu Val Val Gly Glu Thr Ser Arg Ala
 20 25 30
 Leu Asn Trp Ser Leu Tyr Gly Tyr Asp Arg Glu Thr Asn Pro Lys Leu
 35 40 45
 Ser Glu Val Ser Gly Leu Thr Ala Phe Thr Asn Val Pro Asp Pro Ile
 50 55 60
 Glu Tyr Asn Ser
 65

<210> 10212
 <211> 133
 <212> PRT
 <213> B.fragilis

<400> 10212
 Arg Leu Leu Arg Met Cys Leu Thr Gln Ser Asn Thr Thr His Lys Met
 1 5 10 15
 Val Pro Met Leu Met Ser Ala Val Ser Ala Glu Asn Phe Asp Ser Ile
 20 25 30
 Tyr His Gln Lys Gly Ile Ile Thr Ala Phe Lys Asp Ala Gly Phe Arg
 35 40 45
 Thr Ala Phe Phe Ser Asn Gln Gly Tyr Asn Thr Ser Phe Ile Asp Cys
 50 55 60
 Phe Gly His Glu Ala Asp His Cys Asp Phe Ile Lys Glu Asp Pro Leu
 65 70 75 80
 Thr Ala Gly Gln Asn Leu Ser Asp Asp Tyr Leu Asp Asp Leu Val Gln
 85 90 95
 Glu Val Leu Ala Thr Gly Thr Arg Lys Arg Phe Ser Arg Leu Tyr Pro
 100 105 110
 Ser Gly Ile His Leu Asn Asn Arg Asn Arg Met Leu Val Gln Thr Ser
 115 120 125
 Leu Ile Leu Ala Glu
 130

<210> 10213
 <211> 107
 <212> PRT
 <213> B.fragilis

<220>
 <221> UNSURE
 <222> (44), (54), (70), (83)
 <223> Identity of amino acid sequences at the above locations are unknown.

<400> 10213
 Pro Ser Ser Ser Gln Lys Arg Thr Phe Ser Cys Thr Leu Ser Gly Leu

6051

1		5		10		15									
Tyr	Ser	Lys	Arg	Leu	Leu	Pro	Gly	Ile	Leu	Leu	Val	Ser	Leu	Arg	Gly
		20					25						30		
Gly	Lys	Leu	Lys	Ser	Glu	Phe	Phe	Ser	Pro	Ala	Xaa	Arg	Ile	Ile	Glu
		35					40					45			
Thr	Ser	Ser	Pro	Arg	Xaa	Ile	Ile	Glu	Thr	Pro	Pro	Ile	Ala	Tyr	Phe
		50				55					60				
Asn	Leu	Phe	Ile	His	Xaa	Glu	Lys	Ser	Met	Ser	Gly	Gly	Val	Leu	Val
65					70					75					80
Thr	Val	Xaa	Ile	Glu	Ile	Leu	Ser	Ser	Ser	Asn	Asn	Phe	Asn	Asp	Ser
				85					90					95	
Ser	Asn	Leu	Phe	Gly	Gln	Ser	Leu	Glu	Val	Thr					
			100					105							

<210> 10214
 <211> 288
 <212> PRT
 <213> B.fragilis

<400> 10214
Ser Pro Ile Lys Phe Leu Phe Ser Tyr Lys Pro Lys Arg Ile Phe Leu
1 5 10 15
Ile Asp Leu Met Ala Leu Ser Asp Tyr Val Thr Ser Lys Asp Cys Pro
20 25 30
Asn Lys Phe Glu Glu Ser Leu Lys Leu Phe Asp Glu Asp Arg Ile Ser
35 40 45
Ile Phe Thr Val Thr Asn Thr Pro Pro Asp Ile Asp Phe Ser Ile Trp
50 55 60
Ile Asn Lys Leu Lys Tyr Ala Ile Gly Gly Val Ser Met Ile Lys Arg
65 70 75 80
Gly Asp Glu Val Ser Met Ile Leu Leu Ala Gly Glu Lys Asn Ser Asp
85 90 95
Leu Ser Leu Pro Pro Leu Lys Glu Thr Lys Arg Ile Pro Gly Lys Ser
100 105 110
Arg Leu Glu Tyr Ser Pro Asp Arg Val Gln Glu Lys Val Arg Phe Trp
115 120 125
Asp Asp Glu Gly Tyr Trp Lys Thr Ile Ile Leu Leu Arg Phe Asp Val
130 135 140
Leu Thr Met Glu Leu Asp Ala Lys Phe Ile Asn Lys Asp Met Gly Asn
145 150 155 160
Ser Phe Ser Val Leu Thr Asp Tyr Ile Glu Ser Phe Leu Ser Glu Lys
165 170 175
Gly Glu Phe Leu Phe Pro Glu Ala Glu Asn Tyr Leu Asn Glu Gln Lys
180 185 190
Val Lys Ile Gln Asn Tyr Tyr Pro Leu Phe Glu Ile Ala Arg Thr Cys
195 200 205
Leu His Leu Leu Ser Tyr Val Glu Lys Tyr Thr Asp Ser Leu Ser Ser
210 215 220
Glu Glu His Ile Thr Val Leu Gly His Glu Pro Ile Lys Pro Arg Phe
225 230 235 240
Phe Lys Lys Asp Lys Met Val Pro Pro Lys Tyr Glu Leu Arg Lys Arg
245 250 255
Asp Val Trp Asn Leu Lys Arg Gln Arg Asp Asn Tyr Ser Ser Ser Ile
260 265 270
Ile Thr Phe Lys Ser Ser Pro Arg Gly Trp Lys Tyr Gln Arg Cys Ser
275 280 285

<210> 10215
 <211> 210

<212> PRT

<213> B.fragilis

<400> 10215

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Asn Ala Tyr Asn Met Lys Glu His Ser Ile Lys Ala Val Arg Leu Thr
1          5          10          15
Pro Thr Val Lys Ala Arg Leu Asp Thr Phe Lys Gly Ser Asp Thr Val
          20          25          30
Ser Val Cys Ile Asp Arg Met Ile Thr Phe Phe Glu Ile Thr Gly Phe
          35          40          45
Asn Pro Arg Tyr Ala Ser Arg Asn Pro Thr Ala Leu Val Glu Lys Arg
          50          55          60
Ile Glu Asp Val Val Arg Ile Ile Lys Ser Gln Glu Arg Asp Ile Leu
65          70          75          80
Lys Pro Val Leu Glu Lys Leu Ser Ala Ile Asn Asn Thr Pro Gln Glu
          85          90          95
Ser Pro Asp Tyr Ala Arg Leu Met Asn Glu Phe Arg Asp Leu Lys Asp
          100          105          110
Glu Asn Arg Lys Leu Lys Glu Arg Leu Gln Ala Asp Asp Leu His Thr
          115          120          125
Gln Asp Ala Ala Val Tyr His Asp Lys Leu Lys Arg Leu Gly Asp Leu
          130          135          140
Leu Lys Tyr Gln Leu Asp Pro Glu Lys Phe Ser Thr Ile Lys Tyr Ser
145          150          155          160
Asp Asp Val Arg Val Pro Val Asn Thr Leu Gln Leu Leu Ile Lys Lys
          165          170          175
Ile Asn Glu Glu Tyr Val Leu Val Asn Arg Ile Gly Arg Tyr Thr Leu
          180          185          190
Arg Thr Tyr Arg Ile Thr Lys Ile Asn Ala Pro Gly Leu Val Asp Tyr
          195          200          205
Ser Glu
          210

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<210> 10216

<211> 104

<212> PRT

<213> B.fragilis

<400> 10216

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Tyr Pro Ile Pro Thr Cys Met Met Ser Ala Leu Ser Phe Ile Leu Tyr
1          5          10          15
Pro Glu Arg Ser Lys Phe Ala Leu Lys Asn Lys Arg Met Lys Gly Leu
          20          25          30
Thr Glu Leu Ile Val Ala Gly Cys Ile Leu Phe Gly Leu Leu Leu Thr
          35          40          45
Pro Leu Val Phe Ser Ile Leu Asp Phe Ile Ser Gly Val Arg Lys Ala
          50          55          60
Arg Gln Arg Gly Glu Arg Ile Thr Ser Asp Arg Tyr Arg Arg Ser Val
65          70          75          80
Lys Lys Gly Pro Val Ile Lys Pro Ala Ala Val Ser Pro Gly Val Glu
          85          90          95
Asp Ser Gly Val Arg Lys Val Ser
          100

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<210> 10217

<211> 276

<212> PRT

<213> B.fragilis

<400> 10217

Lys Ser Arg Tyr Met Asn Asn Tyr Val Lys Thr Ser Val Pro Arg Pro
 1 5 10 15
 Val Gly Asn Pro Gly Asn Gly Ile Asn Pro Lys Asp Val Leu Thr Leu
 20 25 30
 Ile Asp Ile Asp Asp Leu Val Tyr Phe Pro Pro Arg Asp Gly Ala Gly
 35 40 45
 Val Val Leu Glu Gly Asp Ile Val Val Lys Pro Ser Ala Tyr Ser Thr
 50 55 60
 Asp Leu Tyr Leu Thr Pro Gly Thr Val Glu Leu Ser Ser Asn Gly Glu
 65 70 75 80
 Gly Glu Thr Asp Ala Lys Gly Phe Thr Pro Ser Val Lys Gly Lys His
 85 90 95
 Pro Gly Asn Lys Gln Glu Val Arg Glu Phe Lys Thr Asn Trp Leu Gly
 100 105 110
 Arg His Cys Ile Ala Ile Leu Gln Tyr Cys Asn Gly Gln Asp Pro Asp
 115 120 125
 Ile Leu Gly Ser Pro Cys Asn Pro Leu Glu Met Ser Val Asn Tyr Thr
 130 135 140
 Gly Asn Lys Asp Gly Asn Ala Ser Glu Phe Thr Phe Thr Gln Ile Ser
 145 150 155 160
 Lys Gly Asp Asp Ile Gly Ile Tyr Lys Gly Thr Ile Pro His Glu Glu
 165 170 175
 Pro Val Ala Thr Val Pro Ala Ser Ala Thr Glu Ile Pro Phe Lys Gly
 180 185 190
 Arg Gly Gln Tyr Gln Leu Ser Ala Gly Ala Ala Lys Ile Ala Thr Ile
 195 200 205
 Lys Gly Ala Lys His Gly Asp Leu Phe Thr Leu Leu Gly Val Val Ser
 210 215 220
 Gly Val Ala Pro Thr Ile Glu Lys Ala Gly Gln Thr Ala Phe Met Leu
 225 230 235 240
 Lys Asn Gly Lys Thr Phe Thr Ala Ser Pro Gly Ser Gln Ile Thr Phe
 245 250 255
 Lys Ala Phe Asp Thr Gly Gly Gly Ala Ile Gln Cys Val Glu Gln Ser
 260 265 270
 Arg Phe Glu Val
 275

<210> 10218

<211> 61

<212> PRT

<213> B.fragilis

<400> 10218

Asn Gly Ile Gln Lys Lys Lys Leu Ile Phe His Arg Arg Arg Leu Glu
 1 5 10 15
 Ile Lys Arg Ala Ser Trp Leu Lys Met Gly Thr Arg Tyr Leu His Pro
 20 25 30
 Cys Asp Arg Ser Glu Ala Gly Met Gln Ala Arg Lys Leu Asp Asn Glu
 35 40 45
 Ile Leu Ser Cys Asn Asn Arg Leu Met Asn Leu Tyr Glu
 50 55 60

<210> 10219

<211> 495

<212> PRT

<213> B.fragilis

<400> 10219

Leu Phe Leu His Val Gln Thr Leu Val Lys Asn Ser Phe Arg Arg Pro
 1 5 10 15
 Arg Arg Ser Glu Ala Glu Arg Gln Leu Pro Glu Gly Gln Met Val Lys
 20 25 30
 Tyr Asp Tyr Ile Lys Gly Arg Gln Ala Glu Gly Leu Gly Thr Lys Asn
 35 40 45
 Arg Phe Arg Tyr Phe Arg Lys Arg Ser Gly Lys Thr Arg Gln Leu Pro
 50 55 60
 Phe Leu Ser Pro Arg Gln Val Ile Glu Ser Gly His Val Gly Thr Gly
 65 70 75 80
 Pro Ala Ala Ala Gly Leu Ala Pro Asp Gly Thr Pro Pro Gly Pro Pro
 85 90 95
 His His Gln Val Leu Glu Gly Val Gly Glu Val Arg Gly Glu His Gly
 100 105 110
 Gln Phe Leu Gly Leu Gln Leu Leu Gly Leu Leu Asp Leu Val Asp Asp
 115 120 125
 Leu Leu Leu Ser Leu Val Thr Asp Thr Arg Arg Arg Leu Leu Asp Thr
 130 135 140
 Gly Asp Gly Leu Ala Thr Val His Arg Val Asn Lys Gln Ser Gly Glu
 145 150 155 160
 Gly Val Val Val Ala Cys His Gln Leu Leu His Glu Ile Val Leu Phe
 165 170 175
 Ile Leu Ala Asp Ile Gly Leu Phe Ala Ala His Gln Val Asp Asn Pro
 180 185 190
 Ser Arg Ala Val Thr Val Thr Val Tyr Leu Asp Gly Leu Leu Glu Leu
 195 200 205
 Ala Gly Val Ile Leu Phe Leu Leu Leu Glu Val Ile Ala Arg Pro Val
 210 215 220
 Val Ile Gln Val Gln Phe Leu Leu Leu Met Val Lys Glu Glu Cys Gln
 225 230 235 240
 Glu Leu Val Gly Gln Leu Pro Glu Pro Ser Gly Arg Lys Leu Val Lys
 245 250 255
 Val Leu Val Lys Ala Val Gln Arg Ser Val Leu Leu Ser Tyr Tyr Gln
 260 265 270
 Gly Gln Leu Val Thr Glu Val His Ala Ala Val Asp Gly Leu Ala Ala
 275 280 285
 Pro Glu Glu Thr Gln Val Gln Ala Ala Leu Cys Arg Phe Ser Val Pro
 290 295 300
 Cys Pro Val Gly Ile Leu Val Pro Phe Pro Glu Ser Asp Ile Glu Ala
 305 310 315 320
 Arg Val Thr Ala Lys Pro Arg Thr His Pro His Tyr Arg Leu Lys Glu
 325 330 335
 Val Val Glu Phe Glu Arg Pro Val Glu Lys Ala Thr Asp Val Leu Arg
 340 345 350
 Arg Lys Asp Val Asp Val Gly Lys Thr Arg Gly Val Asp Glu Val Gly
 355 360 365
 Leu Pro Leu Ala His Leu Gln Gln Pro Arg Leu Val Pro Gly Asp Phe
 370 375 380
 Leu Leu Lys Ser Pro Ala Val Arg Pro Cys Pro Ser Arg Phe Tyr Gln
 385 390 395 400
 Ala Asp Ala Gln Ala Val Gln Leu Arg Ser Arg Leu Gly Asp Thr Gln
 405 410 415
 Asp Ala Leu Arg Ile Asp Gln Thr Asp Val Thr Glu Val Pro Val Ile
 420 425 430
 Leu Thr Leu Gln His Val Gly His Val Gly Gly Asn Gly His Pro Gln
 435 440 445
 Lys Ile Val Ala Ala Ser Val Thr Tyr Gly Ile Pro Ala Gln Tyr Gly
 450 455 460
 His Gly Pro Val Asp Phe Ile Val Gly Gly Val Phe Gly Phe Val Glu

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<210> 10220
<211> 115
<212> PRT
<213> B.fragilis
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<210> 10221
<211> 555
<212> PRT
<213> B.fragilis
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<400>	10221														
Pro	Thr	Asp	Asp	Val	Glu	Val	Arg	Tyr	Ser	His	Ile	Ile	Lys	Val	His
1				5					10					15	
His	Arg	Leu	Asp	Arg	His	His	Gln	Pro	Gly	Cys	Arg	Arg	Gly	Pro	Ala
			20					25					30		
Ala	Lys	Ser	Thr	Val	Ile	Gln	Ala	Arg	Arg	Ser	Ala	Asp	Cys	Val	Tyr
		35					40					45			
Asp	Met	Pro	Gly	Ala	Pro	Leu	Ala	Phe	Val	Gly	Asn	Thr	Tyr	Thr	Asn
	50					55					60				
Leu	Arg	Asp	Asn	Ile	Met	Pro	Ala	Val	Lys	Thr	Gly	Trp	Glu	Leu	Met
65					70					75					80
Gly	Leu	Tyr	Glu	Gly	Val	His	Tyr	Val	Ser	Ser	Cys	Arg	Pro	Pro	Glu
				85					90					95	
Ser	Trp	Arg	Arg	Arg	Cys	Ser	Val	Ile	Val	Asp	Asp	Tyr	Lys	Asn	Thr
			100					105					110		
Val	Ser	Phe	Phe	Asn	Gly	Cys	Ile	Ile	Phe	Leu	Gly	Ser	Leu	Asp	His
		115					120					125			
Pro	Ser	Leu	Leu	Ala	Gly	Lys	Ser	Val	Val	His	Leu	Phe	Phe	Asp	Glu
		130				135					140				
Ser	Lys	Tyr	Ala	Pro	Asp	Asn	Lys	Val	Asn	Arg	Ala	Met	Pro	Val	Leu
145					150					155					160
Arg	Gly	Asp	Ala	Ile	Arg	Tyr	Gly	Cys	Ser	His	Tyr	Phe	Leu	Gly	Val
				165					170					175	
Thr	Ile	Thr	Thr	Asp	Met	Pro	Asp	Val	Leu	Glu	Gly	Glu	Tyr	Asp	Trp
			180					185					190		
Tyr	Phe	Arg	Tyr	Val	Cys	Leu	Val	Asp	Pro	Gln	Arg	Ile	Leu	Arg	Ile
		195					200					205			

Ala Gln Ala Ala Ala Glu Leu Asn Ser Leu Arg Val Arg Leu Val Lys
 210 215 220
 Ala Gly Arg Thr Arg Thr Asp Cys Gly Ala Leu Lys Lys Lys Ile Ala
 225 230 235 240
 Trp Tyr Glu Ala Gly Leu Leu Lys Met Arg Lys Gly Gln Thr Tyr Phe
 245 250 255
 Ile Asn Ala Ser Ser Phe Thr Asn Ile Asp Ile Leu Thr Pro Glu Tyr
 260 265 270
 Val Arg Arg Leu Leu Asp Gly Ala Leu Glu Leu His Asp Phe Leu Lys
 275 280 285
 Ser Val Val Gly Met Arg Pro Gly Leu Arg Arg Asp Thr Arg Phe Tyr
 290 295 300
 Ile Ala Phe Gly Glu Arg His Lys Tyr Thr Asp Gly Thr Arg Tyr Gly
 305 310 315 320
 Glu Pro Ala Gln Ser Cys Leu Asp Leu Arg Phe Leu Arg Arg Gly Glu
 325 330 335
 Pro Ile Asp Gly Gly Val Asp Phe Gly Asn Gln Leu Ser Leu Ile Val
 340 345 350
 Gly Gln Gln Asp Gly Pro Leu Tyr Arg Leu His Lys Asn Phe Tyr Glu
 355 360 365
 Leu Pro Pro Gly Trp Phe Arg Gln Leu Ala Asp Gln Phe Leu Ala Phe
 370 375 380
 Phe Leu Asn His Glu Glu Lys Glu Leu Asn Leu Tyr Tyr Asp Arg Ala
 385 390 395 400
 Gly Asn Asn Phe Glu Lys Gln Lys Glu Asp Tyr Ala Arg Lys Leu Lys
 405 410 415
 Gln Ala Ile Glu Ile Asp Gly Asp Gly Asn Arg Thr Gly Trp Ile Val
 420 425 430
 Asn Leu Met Ser Arg Lys Gln Ser Asn Ile Arg Gln Asp Glu Glu Tyr
 435 440 445
 Asp Phe Met Gln Glu Leu Met Thr Gly Asp Asn Asp Ala Leu Pro Thr
 450 455 460
 Leu Leu Val Asp Ala Val Asn Cys Arg Glu Thr Ile Ser Ser Ile Glu
 465 470 475 480
 Lys Ala Pro Ala Gly Ile Arg Tyr Lys Gly Gln Gln Lys Ile Ile Tyr
 485 490 495
 Lys Val Lys Lys Ser Glu Lys Leu Glu Pro Lys Lys Leu Pro Met Leu
 500 505 510
 Ser Thr Asn Phe Ser Asp Ala Phe Lys Tyr Leu Met Met Arg Gly Ala
 515 520 525
 Trp Arg Arg Ala Val Arg Gly Lys Ser Gly Arg Ser Arg Ser Gly Pro
 530 535 540
 Tyr Met Pro Gly Leu Asp Asp Leu Thr Gly Gly
 545 550 555

<210> 10222

<211> 358

<212> PRT

<213> B.fragilis

<400> 10222

Trp Ser Asp Ile Lys Thr Ile Pro Leu Ser Gly Asn Cys Leu Val Phe
 1 5 10 15
 Pro Leu Arg Gly Lys Ala Ile Ala Phe Gln Ser Phe Val Pro Gln
 20 25 30
 Pro Val Ser Gly Ile Phe Thr Ala Tyr His Leu Lys Phe Asn Ser Met
 35 40 45
 Lys Glu Gln Ile Ile Ser Tyr Leu Glu Gly Pro Arg Asp Tyr Ser Gln
 50 55 60

Gly Val Ala Leu Tyr Glu Gln Phe Gly Pro Asn Arg Met Leu Lys Ala
 65 70 75 80
 Lys Phe Arg Gln Ile Gly Glu Cys Glu Met Thr Arg Gly Thr Leu Ile
 85 90 95
 Glu Glu Leu Arg Lys Leu Ser Gly Met Ser Glu Ala Glu Phe Ala Gly
 100 105 110
 Met His Arg Lys Ala His His Ile Pro Ser Lys Ala Glu Gln Pro Val
 115 120 125
 Ser Pro Val Pro Val Arg Met Tyr Ala Asp Asp Leu Leu Ile Ala Leu
 130 135 140
 Ala Ser Arg Leu Gly Val Thr Val Glu Lys Leu Val Ser Asp Asp Phe
 145 150 155 160
 Val Lys Glu Arg Leu Ser Gln Ser Pro Asp Met Glu Gln Val Arg Gly
 165 170 175
 Leu Lys Glu Glu Leu Glu Asn Ala Gln Ser Thr Tyr Ser Glu Ala Pro
 180 185 190
 Glu Thr Val Arg Lys Ala Ile Arg Phe Arg Glu Glu Phe Pro Phe Leu
 195 200 205
 Arg Gln Pro Asp Cys Pro Asp Glu Leu Lys Val Leu Val Ala Asp Met
 210 215 220
 Phe Ser Ala Tyr Asp Leu Tyr Arg Glu Ser His Arg Met Leu Val Glu
 225 230 235 240
 Thr Pro Asp Asp Val Ala Thr Gly Glu Thr Tyr Leu Trp Ala Lys Thr
 245 250 255
 Ala Val Glu Asn Phe Leu Glu Asn Arg Gln Met Trp Glu Glu Leu Glu
 260 265 270
 Tyr Tyr Lys Asn Asn Gly Glu Ile Leu Gly Lys Ala Gln Ala Met Arg
 275 280 285
 Gln Ala Arg Glu Lys Gln Glu Ile Ser Ser Leu Thr Asp Leu Glu Leu
 290 295 300
 Ser Lys Gln Leu Gly Asn Ala Lys Ser Asn Ile Ser Lys Gly Lys Asn
 305 310 315 320
 Glu Leu Glu Lys Ala Pro Asp Glu Glu Lys Arg Val Lys Ala Met Glu
 325 330 335
 Lys Thr Arg Lys Trp Thr Glu Arg Lys Asn Leu Leu Glu Ala Glu Met
 340 345 350
 Glu Ser Arg Lys Lys Asn
 355

<210> 10223
 <211> 209
 <212> PRT
 <213> B.fragilis

<400> 10223
 Ser Lys Ser Met Lys Thr Asn Leu Val Lys Pro Ser Arg Val Asn Phe
 1 5 10 15
 Glu Lys Ala Asp Ile Gly Gln Ile Gly Arg Ile Leu Ala Thr Gly Asp
 20 25 30
 Leu Asp Ser Leu Pro Glu Glu Gln Arg Ala Tyr Tyr Asp Leu Met Glu
 35 40 45
 Met Val Arg Gly Leu Arg Ala Arg Met Arg Tyr Asn Gly Lys Val Ile
 50 55 60
 Thr Lys Ala Gly Ile Ile Arg Leu Leu Lys Ser Glu Val Tyr Gly Leu
 65 70 75 80
 Ser Asp Trp Met Ala Arg Gln Val Tyr Ala Asp Ser Val Asn Phe Phe
 85 90 95
 Tyr Ser Gln Glu Asn Ile Arg Pro Gln Ala Phe Ala Asn Leu Tyr Ala
 100 105 110

Glu Lys Leu Glu Lys Trp Ala Asp Ser Met Phe Leu Thr Gly Lys Gly
 115 120 125
 Glu Glu Ala Ser Arg Ile Leu Glu Arg Ala Ala Arg Leu Arg Val Arg
 130 135 140
 Phe Ala Cys Asp Glu Gln Glu Ile Pro Gln Glu Leu Leu Asp Arg Lys
 145 150 155 160
 Pro Val Val Ile Tyr Thr Cys Asp Gly Ser Asp Met Gly Val Pro Asp
 165 170 175
 Thr Asp Arg Lys Glu Leu Glu Ala Phe Ile Asp Ser Ile Pro Glu Val
 180 185 190
 Pro Ser Val Val Arg Glu Arg Val Lys Glu Asp Ala Arg Ile Lys Lys
 195 200 205
 Phe

<210> 10224
 <211> 337
 <212> PRT
 <213> B.fragilis

<400> 10224
 Phe Cys Gly Ala Glu Ile Asn Ile Ser Lys Met Asn Ala Lys Lys Asn
 1 5 10 15
 Leu Met Ala Phe Ile Leu Thr Val Ser Ile Ala Leu Met Val Ile
 20 25 30
 Cys Leu Gly Leu Glu Met Val Lys Ala Cys Ala Gly Gly Asp Gly Ser
 35 40 45
 Glu Trp Lys Lys Lys Val Ala Ala Asp Thr Leu His Val Val His Tyr
 50 55 60
 Thr Arg Pro Asp Leu Pro Gln Ile Met Thr Asp Pro Ala Glu Arg Ala
 65 70 75 80
 Val Tyr Tyr Val Lys His Tyr Trp Asp Gly Tyr Leu Thr Gly Asp Thr
 85 90 95
 Ala Trp Val Asn Ser Gly Asp Thr Glu Gln Leu Tyr Val Asp Phe Ile
 100 105 110
 Asp Ala Leu Lys Tyr Val Glu Pro Glu Thr Gly Arg Lys Ala Leu His
 115 120 125
 Thr Met Met Val Arg Met Glu Ala Asp Ser Thr Ala Tyr Arg Arg Phe
 130 135 140
 Gly Leu Leu Gly Glu Lys Tyr Leu Asn Glu Pro Asn Ser Pro Met Arg
 145 150 155 160
 Asn Glu Asp Phe Tyr Ile Ala Val Leu Glu Gln Met Leu Gln Ser Asp
 165 170 175
 Arg Leu Gln Glu Trp Glu Lys Ile Arg Pro Ala Asp Arg Leu Lys Gln
 180 185 190
 Ala His Lys Asn Arg Pro Gly Met Lys Ala Ala Asp Phe Thr Tyr Val
 195 200 205
 Thr Val His Gly Asp Asn Ser Arg Met Ser Arg Leu Lys Ala Gln Tyr
 210 215 220
 Thr Met Leu Phe Phe Tyr Asp Pro Asp Cys Ser Asn Cys Arg Lys Phe
 225 230 235 240
 Glu Lys Leu Phe Ala Glu Ile Pro Ala Phe Val Glu Met Val Glu Asn
 245 250 255
 Gly Thr Leu Arg Val Leu Ala Ile Tyr Pro Asp Glu Asn Arg Glu Glu
 260 265 270
 Trp Ala Ala Lys Ala Val Tyr Met Pro Gln Gly Trp Ile Val Gly Trp
 275 280 285
 Asn Lys Ala Gly Asp Ile Arg Thr Arg Gln Leu Tyr Asp Ile Arg Ala
 290 295 300

Thr Pro Thr Ile Tyr Leu Leu Asp Gly Arg Lys Arg Val Ile Leu Lys
 305 310 315 320
 Asp Thr Ser Met Glu Gln Leu Ile Asp Tyr Leu Ala Thr Gln Ala Gly
 325 330 335
 Lys

<210> 10225
 <211> 126
 <212> PRT
 <213> B.fragilis

<400> 10225
 Thr Leu Lys Asp Met Val Glu Ile Arg Lys Ile Glu Glu Val Trp Gly
 1 5 10 15
 Gly Val Asp Ile Pro Glu Ile Thr Gly Val Tyr Asp Pro Leu Ser Gly
 20 25 30
 Leu Arg Asp Gly Thr Ile Thr Ser Gln Ala Pro Ile Val Val Ser Gly
 35 40 45
 Tyr Asn Leu Asn Arg Tyr Ala Leu Glu Asn Ile Arg Leu Cys Leu Val
 50 55 60
 Thr His Ala Lys Pro Glu Gln Val Ile Asp Ile Arg Leu Val Tyr Thr
 65 70 75 80
 Tyr Ser Glu Gly Lys Val Val Val Ala Leu Pro Glu Leu Lys Pro Gly
 85 90 95
 Glu Tyr Arg Pro Ala Val Ile Leu Lys Gly Asp Glu Lys Lys Val Tyr
 100 105 110
 Val Leu Pro Met Arg Trp Val Val Arg Gly Arg Trp Arg Arg
 115 120 125

<210> 10226
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 10226
 Thr Gly Leu Leu Leu His Arg Gln Leu Tyr Pro Phe Pro Phe Glu
 1 5 10 15
 Val Tyr Ala Gln Tyr Phe His Arg Asp Val Leu Val Asn Gly Asp His
 20 25 30
 Phe Gly Gly Ile Gly Asp Glu Ser Val Gly Lys Leu Gly Glu Met Asp
 35 40 45
 Lys Pro Val Leu Leu Asp Ala Tyr Ile Asp Lys Ser Ser Glu Val Gly
 50 55 60
 Asp Val Ala Asp Asn Thr Gly
 65 70

<210> 10227
 <211> 708
 <212> PRT
 <213> B.fragilis

<400> 10227
 Phe Met Glu Ile Phe His Lys Met Ile Ser Ala Ala Leu Asn Leu Pro
 1 5 10 15
 Glu Lys Gln Ile Ser Asn Thr Leu Gly Leu Leu Ala Glu Gly Ala Thr
 20 25 30
 Ile Pro Phe Ile Ser Arg Tyr Arg Lys Glu Ile Thr Gly Gly Leu Asp
 35 40 45

Glu	Val	Gln	Ile	Glu	Ser	Ile	Lys	Thr	Gln	Tyr	Asp	Lys	Leu	Ser	Glu
50						55					60				
Leu	Ala	Lys	Arg	Lys	Glu	Thr	Ile	Leu	Gly	Thr	Ile	Gly	Glu	Gln	Gly
65					70					75					80
Lys	Leu	Thr	Pro	Glu	Leu	Arg	Gln	Arg	Ile	Asp	Ala	Thr	Trp	Asp	Ala
				85					90					95	
Thr	Ala	Leu	Glu	Asp	Ile	Tyr	Leu	Pro	Tyr	Lys	Pro	Lys	Arg	Lys	Thr
			100					105					110		
Arg	Ala	Glu	Ala	Ala	Arg	Gln	Lys	Gly	Leu	Glu	Pro	Leu	Ala	Leu	Leu
	115						120					125			
Leu	Met	Met	Gln	Arg	Glu	Asn	Asn	Leu	Gly	Ser	Arg	Ile	Pro	Ala	Phe
	130					135					140				
Val	Lys	Gly	Asp	Val	Lys	Asp	Ala	Glu	Asp	Ala	Leu	Lys	Gly	Ala	Arg
145					150					155					160
Asp	Ile	Ile	Ala	Glu	Gln	Val	Ser	Glu	Asp	Glu	Arg	Ala	Arg	Asn	Ala
				165					170					175	
Val	Arg	Asn	Leu	Phe	Ala	Arg	Gln	Ala	Val	Ile	Ser	Ala	Lys	Val	Val
		180						185					190		
Lys	Gly	Lys	Asp	Glu	Glu	Ala	Ala	Lys	Tyr	Arg	Asp	Tyr	Phe	Asp	Phe
	195						200					205			
Ser	Ser	Pro	Leu	Lys	Arg	Cys	Thr	Ser	His	Arg	Leu	Leu	Ala	Ile	Arg
	210					215					220				
Arg	Ala	Glu	Ala	Glu	Gly	Leu	Leu	Lys	Val	Ser	Ile	Thr	Pro	Asp	Asp
225					230					235					240
Asp	Glu	Cys	Leu	Glu	Arg	Leu	Asp	Arg	Gln	Phe	Val	Arg	Ser	Asn	Asn
				245					250					255	
Glu	Cys	Gly	Arg	Gln	Val	Ala	Glu	Ala	Val	Gln	Asp	Ala	Tyr	Arg	Arg
			260					265					270		
Leu	Leu	Lys	Pro	Ser	Ile	Glu	Thr	Glu	Phe	Ala	Ser	Leu	Ser	Lys	Glu
		275					280					285			
Gln	Ala	Asp	Asp	Glu	Ala	Ile	Arg	Val	Phe	Ala	Glu	Asn	Leu	Arg	Gln
	290					295					300				
Leu	Leu	Leu	Ala	Pro	Pro	Leu	Gly	Gln	Lys	Arg	Val	Met	Gly	Ile	Asp
305					310					315					320
Pro	Gly	Phe	Arg	Thr	Gly	Cys	Lys	Val	Val	Cys	Leu	Asp	Ala	Gln	Gly
				325					330					335	
Asn	Leu	Val	His	Asn	Glu	Asn	Ile	Tyr	Pro	His	Pro	Pro	Val	Asp	Lys
			340					345					350		
Lys	Thr	Glu	Ala	Ala	Ser	Lys	Leu	Arg	Lys	Met	Ile	Glu	Ala	Tyr	Lys
		355					360					365			
Ile	Glu	Ala	Ile	Ala	Ile	Gly	Asn	Gly	Thr	Ala	Ser	Arg	Glu	Thr	Glu
					375						380				
Asn	Phe	Val	Thr	His	Gln	Gln	Phe	Asp	Arg	Pro	Val	Gln	Val	Phe	Val
385					390					395					400
Val	Ser	Glu	Gln	Gly	Ala	Ser	Ile	Tyr	Ser	Ala	Ser	Lys	Thr	Ala	Arg
				405					410					415	
Asp	Glu	Phe	Pro	Asp	Tyr	Asp	Val	Thr	Val	Arg	Gly	Ala	Val	Ser	Ile
			420					425					430		
Ala	Arg	Arg	Leu	Met	Asp	Pro	Leu	Ala	Glu	Leu	Val	Lys	Ile	Asp	Pro
			435				440					445			
Lys	Ser	Ile	Gly	Val	Gly	Gln	Tyr	Gln	His	Asp	Val	Asp	Gln	Thr	Lys
	450					455					460				
Leu	Lys	Lys	Ser	Leu	Asp	Gln	Thr	Val	Glu	Asn	Cys	Val	Asn	Gln	Val
465					470					475					480
Gly	Val	Asn	Leu	Asn	Thr	Ala	Ser	Ser	His	Leu	Leu	Thr	Tyr	Ile	Ser
				485					490					495	
Gly	Leu	Gly	Pro	Gln	Leu	Ala	Gln	Asn	Ile	Val	Ala	Tyr	Arg	Ala	Ala
			500					505					510		
Asn	Gly	Ala	Phe	Ala	Ser	Arg	Lys	Glu	Leu	Met	Lys	Val	Pro	Arg	Met

515 520 525
 Gly Ala Lys Ala Phe Glu Gln Cys Ala Gly Phe Leu Arg Ile Ala Gly
 530 535 540
 Gly Glu Asn Pro Leu Asp Asn Thr Ala Val His Pro Glu Ser Tyr Gly
 545 550 555 560
 Ile Val Gln Gln Met Ala Lys Asp Leu Ser Cys Thr Val Pro Gln Leu
 565 570 575
 Ile Ala Asp Lys Ser Leu Arg Thr Arg Ile Glu Met Glu Lys Tyr Ile
 580 585 590
 Thr Pro Thr Val Gly Leu Pro Thr Leu Lys Asp Ile Leu Gln Glu Leu
 595 600 605
 Asp Lys Pro Gly Arg Asp Pro Arg Asp Thr Ile Gln Val Phe Glu Phe
 610 615 620
 Asp Arg Asn Val Arg Thr Ile Asn Asp Leu Arg Glu Gly Met Thr Leu
 625 630 635 640
 Pro Gly Ile Val Ser Asn Ile Thr Asn Phe Gly Ala Phe Val Asp Ile
 645 650 655
 Gly Ile Lys Glu Asn Gly Leu Val His Leu Ser Gln Leu Ala Asn Arg
 660 665 670
 Phe Ile Thr Asp Pro Thr Glu Val Ser Ile His Gln His Val Thr
 675 680 685
 Val Lys Val Leu Ser Ile Asp Leu Glu Arg Lys Arg Ile Gln Leu Thr
 690 695 700
 Met Lys Glu Glu
 705

<210> 10228
 <211> 108
 <212> PRT
 <213> B.fragilis

<400> 10228
 Ala Thr Asn Val Arg Asn Lys Ser Ala Ile Thr Ile Asn Phe Tyr Tyr
 1 5 10 15
 Leu Cys Gly His Lys Lys Thr Asp Thr His Thr Leu Lys Gln Met Asn
 20 25 30
 Met Pro Val Ser Phe Lys Tyr Ile Leu Tyr Leu Leu Leu Val Ile
 35 40 45
 Gly Cys Cys Pro Pro Met Ala Gly His Ala Ala Thr Gly Glu Lys Pro
 50 55 60
 Ile Leu Met Ile Cys Ser Tyr Asn Pro Gly Ala Tyr Pro Thr Ser Ala
 65 70 75 80
 Asn Val Ser Asp Phe Met Asp Glu Tyr Gln Arg Leu Gly Gly Lys Arg
 85 90 95
 Gly Val Val Ile Glu Asp Ser His His Arg Gly Cys
 100 105

<210> 10229
 <211> 277
 <212> PRT
 <213> B.fragilis

<400> 10229
 Arg His Ile Val Cys Val Asp Ser Asn Gln Ser Trp Arg Ile Val Ser
 1 5 10 15
 Asp Lys Ala Ala Asp Trp Val Glu Val Ser Glu Pro Glu Leu Leu Gln
 20 25 30
 Gly His Tyr Asp Gly Arg Phe Thr Val Lys Val His Ser Asn Ala Gly
 35 40 45

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Tyr Arg Val Arg Gly Gly Phe Pro Ala Ala Arg His Thr Val Leu Ser
 50          55          60
Leu Val Asn Asp Thr Gly Val Val Arg Asp Ile Leu Ile Tyr Gln Gly
 65          70          75          80
Gly Tyr Val Arg Ile Arg Gly Lys Tyr Trp Leu Asp Arg Asn Leu Ala
          85          90          95
Ala Gly Gly Lys Leu Ala Gln Val Ala Ile Pro Leu Gly Leu Glu Val
          100          105          110
Asp Thr Thr Leu Asn Arg Gly Thr Tyr Phe Gln Phe Gly Cys Pro Thr
          115          120          125
Asp Arg Trp Glu Glu Asn Phe Met Pro Cys Arg Gly Ser Trp Tyr Asp
          130          135          140
Gly Thr Ala Glu Ser Pro Ala Arg Ile Asn Glu Leu Asp Pro Ser Pro
          145          150          155          160
Glu Gly Trp Arg Leu Pro Ser Arg Ile Glu Met Glu Ala Leu Met Asn
          165          170          175
Ser Pro Ala Ala Pro Met Glu Leu Gln Arg Glu Glu Asp Arg Thr Asn
          180          185          190
Ile Cys Leu Leu Ser Asp Asp Gly Val Pro Val Tyr Leu Pro Leu Cys
          195          200          205
Gly His Arg Ser His Ile Asn Gly Cys Arg Ile Val Ile Pro His Gly
          210          215          220
His Arg Tyr Trp Thr Gly Ser Ser Gln Ser Pro Val Tyr Gly Tyr Ser
          225          230          235          240
Leu Cys Val Glu Pro Ser Arg Gln Met Tyr Leu Met His Asp Met Lys
          245          250          255
Lys Tyr Gly Phe Pro Val Arg Ser Ile Phe Asn Asp Glu Arg Gln Met
          260          265          270
Val Asn Asp Lys Leu
          275

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<210> 10230

<211> 304

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (304)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10230

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Gly Lys Met Thr His Arg Ile Gln Gln Glu Ser Ile Lys Arg Arg Leu
 1          5          10          15
Ala Lys Leu Ala Ala Pro Ile Phe Ile Glu Thr Leu Leu Ile Met Met
          20          25          30
Leu Gly Ala Val Asp Thr Ile Met Leu Ser Arg His Ser Asp Asn Ser
          35          40          45
Val Ala Ala Val Gly Val Val Asn Gln Ile Ile Met Leu Thr Phe Leu
          50          55          60
Val Phe Glu Val Ile Asn Leu Gly Thr Ser Val Leu Cys Ser Gln Tyr
          65          70          75          80
Leu Gly Ala Arg Leu Glu Lys Lys Val Val Gln Val Val Gly Val Ser
          85          90          95
Leu Leu Val Asn Leu Leu Val Gly Gly Ile Ile Ser Leu Ile Leu Phe
          100          105          110
Thr Met Ala Arg Thr Ile Leu Gln Trp Met Gly Leu Gly Pro Glu Leu
          115          120          125
Met Ala Asp Gly Met Asp Tyr Met Arg Ile Val Gly Ala Phe Ala Phe

```

130		135		140
Phe Gln Ala Ile Ser	Leu Thr Leu Ser Ala Ser	Leu Arg Ser Ala Asn		
145	150	155	160	
Lys Ala Ile Tyr Pro	Met Leu Val Thr Val Val	Val Asn Ile Leu Asn		
	165	170	175	
Ile Ile Gly Asn Tyr	Ser Leu Ile Phe Gly Lys	Phe Gly Cys Pro Glu		
	180	185	190	
Leu Gly Val Glu Gly	Ala Ala Ile Ser Thr Ala	Phe Ser Arg Gly Val		
	195	200	205	
Ser Met Val Ile Leu	Phe Val Ile Leu Phe Arg	Lys His Ile His Arg		
	210	215	220	
Phe Pro Leu Ala Tyr	Phe Arg Pro Phe Pro Phe	Ile Glu Leu Lys Asn		
225	230	235	240	
Leu Met Arg Val Gly	Leu Pro Ser Ala Gly Glu	Gln Leu Ser Tyr Ser		
	245	250	255	
Ser Ser Gln Val Val	Ile Thr Phe Phe Ile Asn	Met Leu Gly Val Glu		
	260	265	270	
Ala Leu Ala Thr Arg	Thr Tyr Cys Val Asn Ile	Ile Met Phe Gly Tyr		
	275	280	285	
Ile Phe Ser Ile Ser	Met Ala Gln Gly Gly Ala	Ile Trp Ile Gly Xaa		
290	295	300		

<210> 10231

<211> 257

<212> PRT

<213> B.fragilis

<400> 10231

Lys Gln Lys Thr Met	Asn Lys Glu Val Asp	Leu Ser Val Ser Cys Leu
1	5	10
Gly Lys Val Lys Glu	Leu Lys Tyr Asp Val	Ile Ile Leu Pro Trp Gly
	20	25
Ala Thr Glu Pro His	Asn Leu His Leu Pro	Tyr Leu Thr Asp Cys Ile
	35	40
Leu Pro His Asp Ile	Ala Val Glu Ala Ala	Glu Leu Ala Leu Ser Arg
	50	55
Ser Gly Val Arg Cys	Met Val Met Pro Pro	Val Pro Phe Gly Ala His
65	70	75
Asn Pro Gly Gln Arg	Glu Leu Pro Phe Cys	Ile His Thr Arg Tyr Ala
	85	90
Thr Gln Gln Ala Ile	Leu Glu Asp Ile Val	Ser Ser Leu His Val Gln
	100	105
Gly Phe Arg Lys Leu	Leu Ile Leu Ser Gly	His Gly Gly Asn Asn Phe
	115	120
Lys Gly Met Ile Arg	Asp Leu Ala Phe Glu	Tyr Pro Asp Phe Leu Ile
	130	135
Ala Ala Ala Asn Trp	Phe Glu Val Val Ser	Pro Lys Gly Tyr Phe Glu
145	150	155
Ala Glu Ile Asp Asp	His Ala Gly Glu Ser	Glu Thr Ser Val Met Met
	165	170
His Tyr His Pro Glu	Leu Val Asn Leu Ala	Glu Ala Gly Asp Gly Glu
	180	185
Ser Lys Pro Phe Ala	Ile Ala Ser Leu Asn	Glu Lys Val Ala Trp Val
	195	200
Pro Arg His Trp Asp	Lys Ala Thr Val Asp	Ser Gly Val Gly Asn Pro
	210	215
Lys Lys Ala Thr Ala	Glu Lys Gly Glu Arg	Tyr Val Lys Pro Ile Val
225	230	235
Glu Lys Leu Ala Gly	Leu Phe Glu Glu Met	Ala Gln His Asp Leu Tyr

Glu 245 250 255
 <210> 10232
 <211> 118
 <212> PRT
 <213> B.fragilis
 <400> 10232
 Asn Asn Met Ala Glu Glu Leu Thr Phe Ile Ser Gly Ser Lys Glu Glu
 1 5 10 15
 His Tyr Leu Ser Leu Leu Pro Gln Val Arg Ser Leu Ile Glu Gly Glu
 20 25 30
 Val Asp Leu Val Ala Asn Leu Ala Asn Val Ala Ala Ala Leu Lys Glu
 35 40 45
 Ala Phe Asp Phe Phe Trp Val Gly Phe Tyr Leu Val Lys His Asp Gln
 50 55 60
 Leu Val Leu Gly Pro Phe Gln Gly Ser Gly Ala Cys Thr Arg Ile Pro
 65 70 75 80
 Lys Gly Lys Gly Val Trp Gly Thr Ala Trp His Glu Gly Ala Thr Leu
 85 90 95
 Leu Val Pro Asp Val Glu Ile Phe Pro Gly Gln Ile Ala Leu Glu Ile
 100 105 110
 Cys Phe Pro Asp Arg Lys
 115
 <210> 10233
 <211> 66
 <212> PRT
 <213> B.fragilis
 <400> 10233
 Glu Phe Lys Asn Ile Phe Leu Leu Lys Gly Ala Cys Arg Lys Lys Ser
 1 5 10 15
 Pro Phe Ile Leu Leu Arg Met Thr Thr Gly Met Asp Gly Lys Ala
 20 25 30
 Thr Val Ile Leu His Asn Tyr Glu Asp Lys Lys Tyr Pro Ala Val Leu
 35 40 45
 His Gly Asn Arg Leu Trp Leu Arg Pro Tyr Glu Ala Ile Ala Trp Lys
 50 55 60
 Leu Thr
 65
 <210> 10234
 <211> 152
 <212> PRT
 <213> B.fragilis
 <400> 10234
 Lys Leu Tyr Asp Met Lys Thr Leu Thr Phe Lys Tyr Leu Lys Leu Phe
 1 5 10 15
 Leu Leu Ala Val Ala Met Ile Asn Leu Thr Ser Cys Glu Ile Glu Ile
 20 25 30
 Asp Asp Phe Tyr Asp Asp Asp Asn Ile Gly Gly Ser Tyr Tyr Asn Lys
 35 40 45
 Ser Leu Asp Leu Cys Ser Arg Pro Trp Ala Asp Thr Phe Tyr Asp Ala
 50 55 60
 Asp Gly Asn Tyr Cys Tyr Gln Glu Leu Asn Phe Tyr Leu Asp Arg His

65		70		75		80									
Gly	Glu	Asp	Tyr	Ile	Arg	Val	Glu	Tyr	Pro	Asn	Gly	Arg	Tyr	Ser	Glu
				85					90					95	
Ser	Val	Tyr	Ser	Phe	Thr	Trp	Asn	Trp	Glu	Asp	Arg	Ser	Gln	Tyr	Ser
			100					105					110		
Leu	Arg	Met	Val	Tyr	Gly	Pro	Gly	Asp	Val	Ser	Tyr	Leu	Asp	Asp	Val
		115					120					125			
Trp	Ile	Arg	Gly	Asn	Val	Leu	Ser	Gly	Tyr	Leu	Asp	Gly	His	Asp	Asn
	130					135					140				
Tyr	Val	Asp	Phe	Thr	Gly	Val	Arg								
145					150										

<210> 10235
 <211> 160
 <212> PRT
 <213> B.fragilis

<400> 10235															
Ile	Asp	His	Trp	Arg	Ser	Pro	Ser	Ser	Pro	Val	Val	Lys	Thr	Thr	Ala
1				5					10					15	
Met	Trp	Phe	Asn	Cys	Ala	Gly	Arg	His	Tyr	Arg	Arg	Trp	Arg	Cys	Pro
			20				25						30		
Ala	Gly	Asn	Arg	Val	Thr	Gly	Leu	Phe	Leu	Arg	Gln	Glu	Thr	Asp	Ser
		35					40					45			
Phe	Val	Leu	Gln	Thr	Asp	Ile	Gln	Arg	Leu	Gln	Gln	Val	Leu	Ile	Asn
	50					55				60					
Leu	Leu	Thr	Asn	Ala	Ala	Lys	Phe	Thr	Lys	Asn	Gly	Thr	Ile	Thr	Leu
65			70						75					80	
Gln	Phe	Glu	Val	Glu	Lys	Glu	Lys	Asn	Arg	Val	Leu	Phe	Ala	Val	Ala
			85					90					95		
Asp	Thr	Gly	Cys	Gly	Ile	Pro	Lys	Glu	Lys	Gln	Lys	Gln	Val	Phe	Glu
		100					105					110			
Arg	Phe	Glu	Lys	Leu	Asn	Glu	Tyr	Ala	Gln	Gly	Thr	Gly	Leu	Gly	Leu
	115					120						125			
Ser	Ile	Cys	Lys	Leu	Thr	Val	Asp	Lys	Trp	Gly	Gly	Asp	Ile	Trp	Ile
	130					135					140				
Asp	Pro	Asp	Tyr	Glu	Gly	Ala	Arg	Phe	Val	Val	Ser	His	Pro	Leu	
145					150				155					160	

<210> 10236
 <211> 463
 <212> PRT
 <213> B.fragilis

<400> 10236															
Arg	Lys	Arg	Leu	Phe	Tyr	Cys	Ile	Leu	Val	Met	Asn	Asp	Lys	Tyr	Glu
1				5					10					15	
Glu	Arg	Leu	Gly	Thr	Asp	Arg	Met	Leu	Pro	Leu	Val	Phe	Arg	Met	Ala
		20					25						30		
Leu	Pro	Ala	Val	Ile	Ala	Gln	Ile	Val	Asn	Leu	Leu	Tyr	Asn	Ile	Val
	35					40						45			
Asp	Arg	Ile	Tyr	Ile	Gly	His	Ile	Pro	Gly	Ile	Gly	Thr	Gln	Ala	Leu
	50					55					60				
Ala	Gly	Ile	Gly	Val	Ala	Gly	Ser	Leu	Ile	Ile	Leu	Ile	Ser	Ala	Phe
65				70					75					80	
Ser	Ala	Ile	Val	Ala	Gly	Gly	Gly	Ala	Pro	Leu	Ala	Ala	Ile	Ala	Leu
			85					90					95		
Gly	Gln	Gly	Asn	Arg	Thr	His	Ala	Glu	Lys	Ile	Leu	Gly	Asn	Gly	Phe
		100						105					110		

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Val Leu Leu Leu Phe Phe Thr Leu Leu Thr Ser Gly Leu Ser Tyr Leu
    115                120                125
Phe Met Glu Pro Ile Leu Leu Phe Thr Gly Ala Ser Glu Gln Thr Leu
    130                135                140
Gly Tyr Ala Thr Ala Tyr Leu Ser Ile Tyr Leu Ile Gly Thr Leu Phe
    145                150                155                160
Val Glu Val Ser Val Gly Leu Asn Thr Phe Ile Asn Thr Gln Gly Arg
    165                170                175
Pro Gly Ile Ala Met Leu Ser Ile Val Ile Gly Ala Leu Leu Asn Ile
    180                185                190
Leu Leu Asp Pro Leu Phe Ile Phe Val Phe Asp Trp Gly Val Lys Gly
    195                200                205
Ala Ala Leu Ala Thr Ile Ile Ser Gln Ala Cys Ser Ala Gly Trp Val
    210                215                220
Leu Phe Phe Leu Thr Ser Arg Arg Ala Ser Leu Arg Leu Glu Pro Arg
    225                230                235                240
Tyr Met Arg Leu Asp Arg Lys Val Val Gly Ala Ile Leu Ala Leu Gly
    245                250                255
Ala Ser Pro Phe Ile Met Ala Ser Thr Glu Ser Leu Val Gly Phe Val
    260                265                270
Leu Asn Gly Ser Leu Lys Thr Phe Gly Asp Ile Tyr Val Ser Ala Leu
    275                280                285
Thr Ile Met Gln Ser Ala Met Leu Phe Val Ser Val Pro Leu Ala Gly
    290                295                300
Phe Ala Leu Gly Phe Val Pro Ile Val Ser Tyr Asn Tyr Gly His Gly
    305                310                315                320
Asn Arg Glu Arg Val Lys Glu Cys Phe Lys Ile Val Met Thr Phe Met
    325                330                335
Phe Leu Phe Asn Leu Val Leu Ile Leu Leu Met Ile Leu Phe Pro Ser
    340                345                350
Val Ile Ala Ser Ala Phe Thr Ser Asp Glu Lys Leu Ile Glu Thr Val
    355                360                365
Val Gln Val Met Pro Val Phe Leu Ala Gly Met Thr Ile Phe Gly Leu
    370                375                380
Gln Arg Ala Cys Gln Asn Met Phe Val Ala Leu Gly Gln Ala Lys Val
    385                390                395                400
Ser Ile Phe Ile Ala Leu Leu Arg Lys Val Ile Leu Leu Ile Pro Leu
    405                410                415
Ala Leu Met Leu Pro Tyr Leu Met Gly Val Met Gly Val Tyr Ala Ala
    420                425                430
Glu Ala Ile Ser Asp Ala Ala Ala Ala Ile Cys Cys Thr Val Ile Phe
    435                440                445
Ala Val Gln Phe Pro Arg Ile Met Asn Lys Leu Thr Val Arg Ser
    450                455                460

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<210> 10237

<211> 583

<212> PRT

<213> B.fragilis

<400> 10237

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Asn Met Ile Met Met Lys Arg Leu Ile Cys Met Tyr Ala Phe Leu Leu
1      5      10      15
Cys Leu Val Cys Val Leu Pro Ala Gln Arg Glu Val Lys Leu Lys
    20      25      30
Ile Val Gln Thr Ser Asp Val His Gly Asn Tyr Phe Pro Tyr Asn Phe
    35      40      45
Ile Thr Gln Lys Glu Trp Gly Gly Ser Leu Ala Arg Val Tyr Ala Leu
    50      55      60

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Val 65	Gln	Lys	Asn	Arg	Glu 70	Val	Tyr	Lys	Gly	Asn 75	Leu	Ile	Leu	Leu	Asp 80
Asn	Gly	Asp	Ile	Leu	Gln	Gly	Gln	Pro	Ser	Ala	Tyr	Tyr	Tyr	Asn	Tyr
			85						90					95	
Ile	Asp	Thr	Val	Ala	Pro	His	Val	Cys	Ala	Glu	Met	Met	Asn	Phe	Met
			100					105					110		
Gly	Tyr	Asp	Ala	Gly	Asn	Met	Gly	Asn	His	Asp	Val	Glu	Thr	Gly	Arg
			115				120					125			
Ala	Val	Phe	Asp	Arg	Trp	Ile	Gly	Glu	Cys	Asn	Phe	Pro	Val	Leu	Gly
			130			135					140				
Ala	Asn	Ile	Val	Glu	Thr	Ala	Thr	Gly	Glu	Thr	His	Leu	Pro	Pro	Tyr
145					150					155					160
Arg	Val	Leu	Glu	Arg	Asp	Gly	Val	Lys	Ile	Val	Val	Leu	Gly	Met	Ile
				165					170					175	
Thr	Pro	Ala	Ile	Pro	Ala	Trp	Leu	Ser	Glu	Asn	Leu	Trp	Gln	Gly	Leu
			180					185					190		
Arg	Phe	Asp	Asp	Met	Glu	Glu	Thr	Ala	Arg	Lys	Trp	Met	Lys	Val	Ile
		195					200					205			
Arg	Glu	Lys	Glu	Asn	Pro	Asp	Leu	Val	Ile	Gly	Leu	Phe	His	Ala	Gly
	210					215					220				
Gln	Asp	Ala	Phe	Val	Met	Ser	Gly	Arg	Tyr	Asn	Glu	Asn	Ala	Ser	Leu
225					230					235					240
Asn	Val	Ala	Lys	Asn	Val	Pro	Gly	Phe	Asp	Met	Val	Leu	Met	Gly	His
				245					250					255	
Asp	His	Ala	Arg	Glu	Cys	Lys	Lys	Val	Val	Asn	Val	Ala	Gly	Asp	Ser
			260					265					270		
Val	Leu	Val	Ile	Asp	Pro	Ala	Ser	Asn	Gly	Ile	Val	Val	Ser	Asp	Ile
		275					280					285			
Asp	Val	Thr	Leu	Lys	Leu	Lys	Asp	Gly	Lys	Val	Val	Ser	Lys	Gln	Ile
	290					295					300				
Asp	Gly	Val	Leu	Thr	Asp	Thr	Lys	Glu	Tyr	Gly	Val	Ser	Glu	Ser	Phe
305					310					315					320
Met	Arg	His	Phe	Ala	Leu	Gln	Tyr	Gly	Ala	Val	Glu	Lys	Phe	Val	Ser
				325					330					335	
Lys	Lys	Ile	Gly	Val	Phe	Thr	Glu	Asp	Leu	Ser	Thr	Arg	Pro	Ala	Tyr
			340					345					350		
Phe	Gly	Ser	Ser	Ala	Phe	Ile	Asp	Phe	Ile	His	Ser	Leu	Gln	Leu	Asp
		355					360					365			
Ile	Ser	Gly	Ala	Asp	Ile	Ser	Phe	Ala	Ala	Pro	Leu	Ser	Phe	Asp	Ala
	370					375					380				
Glu	Ile	Lys	Lys	Gly	Asp	Ile	Arg	Val	Ser	Asp	Met	Phe	Asn	Leu	Tyr
385					390					395					400
Lys	Tyr	Glu	Asn	Met	Leu	Tyr	Val	Met	Lys	Leu	Ser	Gly	Lys	Glu	Ile
				405					410					415	
Lys	Asp	Phe	Leu	Glu	Glu	Ser	Tyr	Tyr	Met	Trp	Thr	Asn			

530		535		540
Tyr Ile Glu Lys Lys Gly Thr Leu Asp Pro Arg Ala Leu Asn Gln Trp				
545		550		560
Lys Phe Val Pro Glu Glu Trp Val Lys Pro Ala Ala Gln Arg Asp Tyr				
	565		570	575
Glu Tyr Leu Phe Gly Gly Lys				
580				

<210> 10238

<211> 112

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (5)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10238

Val Gly His Ile Xaa Lys Ile Leu Leu Ser Phe Leu Leu Leu Thr Leu				
1	5	10	15	
Phe Val Thr Tyr Gln Val Ser Ile Thr Met Phe Thr His Val His Tyr				
	20	25	30	
Val Asn Gly Val Met Ile Ala His Ser His Pro Tyr Lys Gly Thr His				
	35	40	45	
Ser His Thr Ala Ser Asn Ile Ile Val Ile Ala His Phe Ala Ala Phe				
	50	55	60	
His Ser Leu Glu Val Asp Val His Tyr Asp Phe Thr Pro Glu Arg Pro				
65	70	75	80	
Ile Leu Phe Thr Val Glu Ile Pro Glu Ser Ile Pro Val Thr Ala Gly				
	85	90	95	
Thr His Leu Gln Val Ile Ser Leu Arg Ala Pro Pro Ala Glu Leu Ala				
	100	105	110	

<210> 10239

<211> 766

<212> PRT

<213> B.fragilis

<400> 10239

Gln Lys Arg Met Lys His Tyr Ile Val Met Leu Val Leu Ala Cys Val				
1	5	10	15	
Ser Met Ser Ser Tyr Ala Val Asn Pro Ile Lys Glu Gly Asn Met Ile				
	20	25	30	
Ala Gly His Val Ile Val Lys Gly Thr Glu Glu Gly Ile Pro Phe Ala				
	35	40	45	
Thr Val Met Ile Leu Gly Thr Asn Arg Gly Ala Val Ser Asn Glu Glu				
	50	55	60	
Gly Gln Phe Glu Phe Arg Lys Leu Ala Ala Gly Lys Tyr Thr Leu Arg				
65	70	75	80	
Val Gln Val Met Gly Tyr Lys Thr Gln Glu Lys Thr Ile Thr Val Ser				
	85	90	95	
Ala Glu Ala Thr Ser Val Val His Phe Gln Met Glu Glu Val Ser Phe				
	100	105	110	
Thr Thr Asp Glu Val Val Val Ser Ala Asn Arg Asn Glu Val Ser Arg				
	115	120	125	
Lys Ala Ala Pro Val Val Val Asn Val Met Ser Ala Lys Leu Phe Glu				
	130	135	140	
Thr Val Asn Ser Thr Asp Leu Ala Lys Ser Leu Asn Phe Gln Ser Gly				

145		150		155		160
Leu Arg Val	Glu Asn Asn Cys Gln Asn Cys Gly Phe Pro Gln Val Arg					
	165		170		175	
Ile Asn Gly	Leu Glu Gly Pro Tyr Ser Gln Ile Leu Ile Asn Ser Arg					
	180		185		190	
Pro Ile Ile	Ser Ala Leu Ser Gly Val Tyr Gly Leu Glu Gln Ile Pro					
	195		200		205	
Val Asn Met	Ile Glu Arg Val Glu Val Val Arg Gly Gly Gly Ser Ala					
	210		215		220	
Leu Phe Gly	Ala Asn Ala Val Gly Gly Thr Ile Asn Ile Ile Thr Lys					
225		230		235		240
Asp Pro Ile	Asn Asn Ser Phe Gln Val Ala Ser Thr Met Ser Asn Met					
	245		250		255	
Asn Gly Lys	Ser Trp Glu Gln Tyr Met Gly Gly Asn Val Ser Leu Val					
	260		265		270	
Ala Lys Asp	Asn Ser Tyr Gly Ile Ala Leu Tyr Glu Thr Tyr Arg Asn					
	275		280		285	
Arg Asn Pro	Tyr Asp Ala Asp Gly Asp Gly Phe Ser Glu Leu Gly Lys					
	290		295		300	
Leu Asn Met	Asn Thr Phe Gly Met Arg Ala Tyr Tyr Arg Pro Asn Tyr					
305		310		315		320
Phe Ser Arg	Ile Asn Val Glu Tyr His Thr Thr Asn Glu Phe Arg Arg					
	325		330		335	
Gly Gly Asn	Lys Phe Asn Leu Gln Pro His Glu Ala Asp Ile Thr Glu					
	340		345		350	
Gln Thr Lys	His Ile Ile Asn Ser Gly Gly Val Ser Tyr Asp Arg Tyr					
	355		360		365	
Trp Gly Glu	Lys His Lys Met Ser Val Tyr Gly Ser Ile Gln His Thr					
	370		375		380	
Asp Arg Asn	Ser Tyr Tyr Gly Ala Gln Lys Asp Met Asn Ala Tyr Gly					
385		390		395		400
Lys Thr Asn	Asp Leu Thr Trp Val Val Gly Gly Met Tyr Val Gly Asn					
	405		410		415	
Met Asp Arg	Cys Leu Phe Ala Pro Ala Thr Phe Thr Gly Gly Val Glu					
	420		425		430	
Tyr Gln Ser	Asn Ser Leu His Asp Val Met Thr Gly Tyr His Arg Asp					
	435		440		445	
Met Gln Asp	Val Arg Ile Ala Gly Gly Phe Val Gln Asn Glu Trp					
	450		455		460	
Arg Leu Asn	Arg Trp Thr Met Leu Val Gly Ala Arg Leu Asp Lys His					
465		470		475		480
Asn Leu Ile	Asp His Pro Ile Phe Ser Pro Arg Val Asn Phe Leu Tyr					
	485		490		495	
Lys Pro Ser	Asp Asn Leu Gln Ala Arg Leu Thr Tyr Ser Thr Gly Phe					
	500		505		510	
Arg Ala Pro	Gln Ala Tyr Asp Glu Asp Leu His Val Thr Ala Val Gly					
	515		520		525	
Gly Glu Gly	Val Gln Ile Arg Leu Ala Asp Gly Leu Arg Glu Glu Arg					
	530		535		540	
Ser Asn Ser	Phe Ser Gly Ser Val Asp Trp Ser Phe Pro Met Gly His					
545		550		555		560
Trp Gln Ser	Asn Ile Leu Leu Glu Gly Phe Tyr Thr Asp Leu His His					
	565		570		575	
Val Phe Val	Leu Glu Asp Ile Gly Glu Asp Gln Asn Gly Asp Lys Ile					
	580		585		590	
Lys Glu Arg	Arg Asn Gly Ser Gly Ala Lys Val Tyr Gly Val Asn Leu					
	595		600		605	
Asp Ala Lys	Val Ala His Gly Arg Glu Ala Gln Leu Gln Leu Gly Phe					
610		615		620		

Thr Val Gln Arg Ser Arg Tyr Asn Arg Ala Glu Val Trp Thr Ser Glu
 625 630 635 640
 Gly Glu Glu Glu Gln Thr Thr Lys Arg Met Pro Arg Thr Pro Asp Tyr
 645 650 655
 Tyr Gly Tyr Phe Thr Phe Thr Ser Ala Pro Leu Lys Asn Phe Asp Phe
 660 665 670
 Ser Leu Ser Gly Thr Tyr Thr Gly Lys Met Ile Val Pro His Met Ala
 675 680 685
 Gly Tyr Ile Glu Lys Ser Arg Met Glu His Thr Pro Gln Phe Met Asp
 690 695 700
 Leu Asn Leu Lys Leu Asn Tyr Thr Phe Val Leu Lys Asp His Ile Lys
 705 710 715 720
 Met Gln Val Asn Gly Gly Val Gln Asn Ile Phe Asn Ser Phe Gln Lys
 725 730 735
 Asp Leu Asp Lys Gly Glu Phe Arg Asp Ala Gly Tyr Phe Tyr Gly Pro
 740 745 750
 Thr Gln Pro Arg Thr Tyr Phe Val Gly Ile Lys Ile Met Asn
 755 760 765

<210> 10240

<211> 224

<212> PRT

<213> B.fragilis

<400> 10240

Asn Glu Ser Phe Tyr Phe Glu Lys Leu Ile Tyr Ile Asn Arg Phe Ser
 1 5 10 15
 Tyr Phe Cys Pro Ala Ile Tyr Asn Asn Leu Ser Ile Tyr Asn Ile Met
 20 25 30
 Glu Asn Leu Lys Glu Thr Val Asp Ile Val Val Asn Ser Arg Tyr Pro
 35 40 45
 Glu Met Asn Arg Glu Gly Arg Glu Leu Leu Ala Gln Val Leu Ile Arg
 50 55 60
 Lys Glu Leu Glu Lys Gly Glu Met Leu Leu Asn Glu Gly Gln Ile Ser
 65 70 75 80
 Arg His Met Val Phe Val Gly Lys Gly Met Leu Arg Gln Phe Tyr Tyr
 85 90 95
 Lys Asn Gly Lys Asp Val Thr Glu His Phe Ser Tyr Glu Gly Cys Ile
 100 105 110
 Leu Met Cys Ile Glu Ser Leu Leu Lys Gln Glu Pro Thr His Leu Met
 115 120 125
 Ala Glu Ala Leu Glu Pro Ala Val Val Tyr Met Leu Pro Tyr Asp Val
 130 135 140
 Leu Gln Lys Leu Leu Glu Gln Ser Lys Glu Ile Asn Ala Phe Tyr Arg
 145 150 155 160
 Lys Val Leu Glu Tyr Ser Leu Ile Val Ser Gln Ile Lys Ala Asp Ser
 165 170 175
 Trp Arg Phe Glu Thr Ala Arg Glu Arg Tyr Asn Leu Leu Leu His His
 180 185 190
 His Pro Glu Ile Ile Lys Arg Ala Pro Leu Ser His Ile Ala Ser Tyr
 195 200 205
 Leu Leu Met Thr Pro Glu Thr Leu Ser Arg Val Arg Ser Gly Val Leu
 210 215 220

<210> 10241

<211> 653

<212> PRT

<213> B.fragilis

<400> 10241

Arg	Arg	Glu	Pro	Leu	Asp	Gln	Val	Thr	Pro	Glu	Ser	Tyr	Phe	Gln	Asn
1				5					10					15	
Ala	Asp	His	Leu	Ala	Ala	Tyr	Ser	Ile	Ser	Lys	Tyr	Gln	Asn	Leu	Phe
			20					25				30			
Ser	Thr	His	Ser	Gly	Phe	Ser	Ala	Gly	Thr	Val	Asn	Asn	Asp	Gly	Ala
		35					40				45				
Thr	Asp	Asn	Met	Val	Ser	Gly	Gly	Ser	Ser	Gly	Ser	Gly	Leu	Gln	Asn
	50					55					60				
Tyr	Tyr	Thr	Lys	Asp	Val	Trp	Lys	Thr	Glu	Ala	Ala	Asn	Asp	Asn	Trp
65					70				75					80	
Asp	Phe	Ser	Phe	Phe	Arg	Tyr	Cys	Asn	Tyr	Phe	Phe	Glu	Lys	Val	Leu
			85					90						95	
Pro	Lys	Tyr	Glu	Ala	Gly	Glu	Ile	Ser	Gly	Asn	Ala	Asp	Asp	Val	Lys
			100					105						110	
His	Tyr	Ile	Gly	Glu	Met	Tyr	Phe	Ile	Arg	Ala	Trp	Lys	Tyr	Phe	Gln
	115						120					125			
Lys	Leu	Arg	Met	Tyr	Gly	Asp	Tyr	Pro	Ile	Ile	Thr	Glu	Val	Leu	Pro
	130					135					140				
Asp	Asn	Ala	Glu	Ile	Leu	Ile	Glu	Lys	Gly	Val	Arg	Gln	Pro	Arg	Asn
145					150				155					160	
Lys	Val	Ala	Arg	Phe	Ile	Leu	Glu	Asp	Leu	Asp	Lys	Ala	Ala	Glu	Tyr
			165					170						175	
Met	His	Asp	His	Gly	Phe	Ala	Gly	Asn	Asn	Arg	Leu	Asn	Lys	Gln	Cys
		180						185					190		
Ala	Leu	Leu	Ile	Lys	Ser	Arg	Val	Ala	Leu	Tyr	Glu	Ala	Thr	Phe	Glu
	195						200					205			
Lys	Tyr	His	Gln	Gly	Thr	Gly	Arg	Val	Pro	Gly	Asp	Ala	Asn	Trp	Pro
	210					215					220				
Gly	Lys	Arg	Val	His	Pro	Asp	Tyr	Lys	Tyr	Asp	Ala	Asn	Thr	Glu	Ile
225					230				235					240	
Asn	Phe	Phe	Leu	Asp	Gln	Ala	Met	Ser	Ala	Ala	Glu	Gln	Val	Ala	Asp
			245					250						255	
Val	Ile	Lys	Leu	Thr	Pro	Asn	Ser	Gly	Val	Phe	Asn	Pro	Ala	Asn	Asp
		260						265				270			
Asn	Asp	Ile	Ser	Gly	Trp	Asn	Asp	Tyr	Phe	Asp	Met	Phe	Ser	Ala	Glu
	275					280						285			
Asp	Met	Ser	Gly	Phe	Glu	Glu	Val	Leu	Phe	Trp	Arg	Asp	Tyr	Tyr	Ser
	290					295					300				
Gly	Asp	Phe	Thr	Ile	Ala	His	Gly	Ala	Thr	Ala	Tyr	Val	Ala	Ser	Gly
305					310				315					320	
Gly	Asn	Asn	Gly	Met	Leu	His	Asn	Tyr	Val	Gln	Ser	Phe	Leu	Met	Lys
			325					330						335	
Asp	Gly	Met	Pro	Trp	Tyr	Ala	Ala	Thr	Ala	Ala	Tyr	Pro	Phe	Lys	Gly
		340						345				350			
Asp	Glu	Arg	Val	Met	Asp	Glu	Lys	Ala	Asn	Arg	Asp	Glu	Arg	Leu	Gln
	355						360					365			
Leu	Phe	Leu	Phe	Gly	Glu	Glu	Asp	Met	Ile	Pro	Ala	Val	Ser	Asn	Ala
	370					375					380				
Ala	Thr	Asn	Ala	Met	Lys	Thr	Tyr	Gln	Asp	Ala	Asn	Tyr	Pro	Asn	Ile
385					390				395					400	
Ile	Val	Ala	Glu	Ser	Glu	Ile	Lys	Asp	Leu	Thr	Gly	Tyr	Arg	Ile	Arg
			405					410						415	
Lys	Cys	Leu	Ser	Tyr	Asp	Gln	Lys	Gln	Tyr	Val	Ser	Gly	Gln	Ala	Gln
		420						425				430			
Ser	Thr	Thr	Gly	Cys	Val	Ile	Phe	Arg	Ala	Val	Glu	Ala	Tyr	Leu	Asn
		435					440					445			
Tyr	Met	Glu	Ala	Ala	Cys	Met	Lys	Asn	Asn	Gly	Asn	Val	Thr	Gly	Lys
	450					455						460			

Ala Ala Glu Tyr Trp Arg Ala Val Arg Ile Arg Ala Gly Val Asp Pro
 465 470 475 480
 Asp Phe Thr Lys Thr Ile Ala Ala Thr Asp Leu Ser Lys Glu Asn Asp
 485 490 495
 Leu Ala Lys Tyr Lys Gly Glu Asn Glu Met Ile Asp Val Thr Leu Phe
 500 505 510
 Asn Ile Arg Arg Glu Arg Arg Cys Glu Phe Ile Gly Glu Gly Met Arg
 515 520 525
 Met Asp Asp Leu Ile Arg Trp Arg Ser Leu Tyr Arg Leu Leu Val Glu
 530 535 540
 Arg Phe Ile Pro Glu Gly Phe Asn Phe Trp Gly Ser Asp Ala Tyr Lys
 545 550 555 560
 Arg Tyr Glu Gly Glu Asp Ala Lys Phe Glu Tyr Ile Glu Gly Pro Asp
 565 570 575
 Asn Ala Met Ala Asn Val Ser Ser Arg Lys Leu Ser Asn Tyr Leu Arg
 580 585 590
 Pro Tyr Ser Val Val Gln Lys Asn Asn Glu Ile Tyr Asp Gly Tyr Thr
 595 600 605
 Trp Ala Lys Ala His Tyr Leu Tyr Pro Val Pro Ile Arg Gln Ile Glu
 610 615 620
 Leu Leu Ser Pro Ser Gly Glu Ile Ala Ser Ser Val Ile Tyr Gln Asn
 625 630 635 640
 Pro Tyr Trp Pro Glu Glu Arg Asn Thr Ala Ala Ile Glu
 645 650

<210> 10242

<211> 840

<212> PRT

<213> B.fragilis

<400> 10242

Cys Met Lys Glu Lys Thr Asn Leu Phe Pro Ser Leu Ile Arg Leu Arg
 1 5 10 15
 Glu Thr Ser Arg Leu Lys Met Ala Ile Ala Ala Ser Ile Met Leu Trp
 20 25 30
 Cys Ala Thr Pro Gln Gln Ala Thr Ala Asp Thr Asn Glu His Ala
 35 40 45
 Ile Glu Ala Val Gln Gln Ala Lys Val Lys Val Lys Gly Thr Val Val
 50 55 60
 Asp Glu Thr Gly Glu Pro Met Ile Gly Val Ala Val Lys Val Leu Ala
 65 70 75 80
 Asn Asn Thr Gly Thr Ile Thr Asp Leu Glu Gly Lys Phe Ser Val Glu
 85 90 95
 Ala Pro Leu Gly Gly Ala Ile Gln Ile Ser Phe Ile Gly Tyr Lys Thr
 100 105 110
 Val Thr Val Lys Ala Ser Ser Glu Pro Ile Ser Val Thr Leu Lys Glu
 115 120 125
 Asp Ser Gln Gln Leu Asp Glu Val Val Val Val Gly Tyr Gly Ser Gln
 130 135 140
 Lys Lys Val Asn Val Thr Gly Ser Val Ser Met Val Asp Ser Lys Val
 145 150 155 160
 Ile Glu Ser Arg Pro Val Gln Asn Val Ser Gln Ala Leu Gln Gly Val
 165 170 175
 Val Pro Gly Leu Asn Met Ser Val Gly Asn Ser Gly Gly Ala Leu Asp
 180 185 190
 Ser Ser Leu Ser Ile Asn Ile Arg Gly Ala Gly Thr Ile Gly Glu Gly
 195 200 205
 Ser Ser Gly Ser Pro Leu Val Leu Ile Asp Gly Ile Glu Gly Asp Met
 210 215 220

Asn Thr Val Asn Pro Asn Asp Ile Glu Asn Ile Ser Val Leu Lys Asp
 225 230 235 240
 Ala Ala Ser Ser Ser Ile Tyr Gly Ala Arg Ala Ser Phe Gly Val Ile
 245 250 255
 Met Ile Thr Thr Lys Ser Gly Lys Ser Gly Lys Thr Arg Val Asn Tyr
 260 265 270
 Ser Gly Asn Val Arg Phe Ser Asp Ala Ile Gln Ile Pro Glu Met Val
 275 280 285
 Asp Ser Tyr Thr Phe Ala Gln Tyr Phe Asn Arg Ala Asn Thr Asn Asp
 290 295 300
 Gly Gly Gly Leu Val Phe Asp Glu Ala Ala Leu Glu Arg Ile Lys Asn
 305 310 315 320
 Tyr Gln Thr Gly Lys Tyr Thr Asp Pro Asn Thr Pro Glu Tyr Tyr Gly
 325 330 335
 Ala Lys Ala Gly Asn Asp Gly Lys Trp Gln Asn Tyr Thr Gly Ser Phe
 340 345 350
 Ala Asn Thr Asp Trp Phe Lys Glu Phe Tyr Lys Asn Trp Val Pro Ser
 355 360 365
 Thr Glu His Asn Leu Asn Ile Ser Gly Gly Thr Asp Lys Leu Thr Tyr
 370 375 380
 Met Ile Ser Gly Ser Phe Leu Asp Gln Lys Gly Leu Leu Arg His Gly
 385 390 395 400
 Glu Asp Gln Phe Asn Arg Tyr Thr Met Asn Ala Lys Ile Ser Ala Lys
 405 410 415
 Leu Thr Asp Trp Val Thr Leu Asn Tyr Thr Ser Lys Trp Thr Arg Glu
 420 425 430
 Asp Tyr Asp Arg Pro Thr Tyr Met Thr Gly Leu Phe Phe His Asn Ile
 435 440 445
 Ala Arg Arg Trp Pro Thr Cys Pro Val Arg Asp Pro Asn Gly His Tyr
 450 455 460
 Gln Gln Lys Met Glu Ile Ile Glu Met Glu Asp Gly Gly Lys Gln Thr
 465 470 475 480
 Ser Gln Lys Asn Trp Tyr Thr Gln Gln Leu Gln Ala Ile Phe Glu Pro
 485 490 495
 Ile Lys Asp Trp Arg Ile Val Ala Glu Gly Ser Met Arg Thr Tyr Thr
 500 505 510
 Arg Lys Gln Ser Trp Ala Val Leu Pro Ile Tyr Ala Tyr Asp Ala Asp
 515 520 525
 Asn Gln Pro Tyr Leu Leu Gly Trp Gly Asp Asn Ala Ala Gly Tyr Ser
 530 535 540
 Glu Val Gln Asp Ser Arg Glu Ser Glu Asp Tyr Phe Ser Thr Asn Ile
 545 550 555 560
 Tyr Thr Asp Phe Ala Lys Thr Phe Gly Asp His Asn Phe Lys Ile Met
 565 570 575
 Val Gly Phe Asn Gly Glu Leu Tyr Arg Pro Ser Gly Leu Thr Gly Phe
 580 585 590
 Gly Thr Asp Leu Ile Ser Pro Glu Val Pro Ser Leu Gly Leu Thr Gln
 595 600 605
 Asp Asn Lys Lys Ala Ser Ser Trp Ala Ser Glu Lys Ala Ile Ala Gly
 610 615 620
 Phe Phe Gly Arg Leu Asn Tyr Asn Tyr Lys Glu Arg Tyr Met Leu Glu
 625 630 635 640
 Ala Asn Leu Arg Tyr Asp Gly Ser Ser Arg Phe Ile Gly Asp Lys Arg
 645 650 655
 Trp Gly Leu Phe Pro Ser Phe Ser Ala Gly Trp Asn Ile Ser Arg Glu
 660 665 670
 Ala Phe Phe Glu Pro Leu Thr Gln Val Val Gly Thr Leu Lys Leu Arg
 675 680 685
 Gly Ser Trp Gly Gln Leu Gly Asn Asn Asn Thr Ser Glu Thr Asn Ala

690	695	700
Trp Tyr Pro Phe Tyr Gln Asn Met Pro Thr Gly Ser Ala Ser Ser Gly		
705	710	715
Trp Leu Ile Asn Gly Lys Lys Gln Asn Val Ala Gly Leu Pro Gly Ile		
	725	730
Val Ser Ser Leu Met Thr Trp Glu Thr Ile Glu Ser Trp Asn Val Gly		
	740	745
Ile Asp Trp Gly Leu Phe Asp Asn Arg Leu Thr Gly Ser Phe Asp Tyr		
	755	760
Tyr Asn Arg Tyr Thr Tyr Asp Met Ile Gly Pro Ala Pro Thr Leu Pro		
	770	775
Ser Val Leu Gly Ala Ser Ala Pro Gln Ile Asn Asn Cys Asp Met Lys		
785	790	795
Ser Tyr Gly Trp Glu Leu Glu Leu Ser Trp Arg Asp Arg Ile Gln Gln		
	805	810
Phe Asn Tyr Gly Val Arg Leu Val Met Ser Asp Asn Met Gln Lys Ile		
	820	825
Leu Glu Tyr Pro Asn Lys Thr Ser		
	835	840

<210> 10243

<211> 62

<212> PRT

<213> B.fragilis

<400> 10243

Phe Arg Thr Ile Ser Thr Ser Gln Thr Arg Gln Lys Arg Tyr Tyr Lys		
1	5	10
Ile Thr Leu Ile Arg Gln Ala Tyr Gly Val Glu Thr Lys Lys Thr Leu		
	20	25
Lys His His Phe Arg Gln Asp Lys Ser Leu Pro Glu Lys Ser Gln Lys		
	35	40
Thr Asn Tyr Ser Asn Leu Cys Leu Thr Glu Gln Phe Ser Val		
	50	55
		60

<210> 10244

<211> 191

<212> PRT

<213> B.fragilis

<400> 10244

Ala Thr Val Asp Thr Ser Ser Pro Val Val Lys Thr Cys Leu Leu Ser		
1	5	10
Pro His Arg Asn Ser Pro Met Asn Arg Val Asp Ile Glu Glu Tyr Leu		
	20	25
Cys Arg Val Phe His Leu Gln Arg Val Leu Trp Leu Asp His Gly Tyr		
	35	40
Leu Ser Gly Asp Asp Thr Asp Ser His Ile Asp Thr Leu Ala Arg Phe		
	50	55
Cys Ser Pro Asp Thr Ile Ala Tyr Val Lys Cys Thr Asp Ser Glu Asp		
65	70	75
Glu His Tyr Glu Ala Leu Cys Lys Met Glu Glu Gln Leu Lys Thr Phe		
	85	90
Arg Thr Thr Ser Gly Ala Pro Tyr Arg Leu Leu Ala Leu Pro Met Ala		
	100	105
Asp Lys Ile Glu Val Glu Gly Glu Arg Leu Pro Ala Thr Tyr Ala Asn		
	115	120
Phe Leu Ile Met Asn Asp Val Val Leu Tyr Pro Thr Tyr Asn Gln Pro		
	130	135
		140

Glu Asn Asp Lys Leu Ala Lys Glu Val Leu Cys Glu Ala Phe Pro Thr
 145 150 155 160
 Tyr Glu Val Val Gly Ile Asp Cys Arg Ala Leu Ile Lys Gln His Gly
 165 170 175
 Ser Leu His Cys Val Thr Met Gln Tyr Pro Thr Gly Val Ile Lys
 180 185 190

<210> 10245
 <211> 202
 <212> PRT
 <213> B.fragilis

<400> 10245
 Lys Ala Arg Leu Leu Ile Asp Pro Gly Glu Asp Ser Tyr Arg Leu Val
 1 5 10 15
 Asp Leu Pro Asn Gly Glu Glu Leu Arg Ala Gln Ala Gln Lys Glu Phe
 20 25 30
 Asn Leu Thr Asp Ser Glu Thr Lys Ala Leu Ala Asn Tyr Lys Leu Tyr
 35 40 45
 Gly Asn Leu Asp Lys Gly Val Val Arg Gly Phe Glu Val Asn Ala Ala
 50 55 60
 Thr Asn Leu Gly Ala Gly Phe Ser Leu Asn Gly Asn Tyr Ala Tyr Ala
 65 70 75 80
 Tyr Ala Arg Gly Lys Ser Val Asp Gly Val Trp Gly Asn Ile Asp Arg
 85 90 95
 Ser Val Arg His Thr Gly Thr Val Ala Gly Asn Tyr Thr His Ala Trp
 100 105 110
 Asn Asp Tyr Met Leu Asn Val Asn Ile Asn Gly Arg Phe Gln Ser Lys
 115 120 125
 Arg Phe His Pro Gly His Ser Tyr Gly Asp Ala Pro Gly Tyr Gly Val
 130 135 140
 Trp Asn Leu Asn Val Lys His Ser Leu Thr Gly Phe Gln His Leu Gly
 145 150 155 160
 Leu Asp Phe Gly Met Gly Leu Asp Asn Ile Phe Asn Lys Arg Asp Thr
 165 170 175
 Arg Pro Asn Gly Val Asn Tyr Ala Leu Ser Pro Gly Arg Met Ala
 180 185 190
 Tyr Val Ser Leu Thr Leu Arg Phe Lys Lys
 195 200

<210> 10246
 <211> 1095
 <212> PRT
 <213> B.fragilis

<400> 10246
 Cys Ser Arg Phe Cys His Tyr Lys Phe Leu Leu Tyr Met Lys Ala Tyr
 1 5 10 15
 Arg Leu Lys Ile Thr Cys Phe Ile Leu Leu Leu Leu Pro Val Leu Thr
 20 25 30
 Cys Cys Thr Asp Glu Glu Leu Leu Arg Gly Ser Gly Val Pro Glu Gly
 35 40 45
 Val Pro Thr Thr Val Asp Ile Ser Val Gly Thr Ala Ala Asn Arg Ala
 50 55 60
 Lys Thr Arg Ser Gly Leu Pro Glu Gly Glu Glu Arg Lys Ile Tyr Asp
 65 70 75 80
 Leu Tyr Leu Trp Val Phe Asp Ser Arg Gly Gly Val Glu Phe Ser Arg
 85 90 95
 Glu Tyr Pro Arg Ala Glu Leu Tyr Gln Ala Ala Ala Ala Leu Glu Thr

	100		105		110		
Ala Thr Gly	Glu Lys Asp Thr	Asp Ala Pro Thr Ser Met	Gly Leu Leu				
	115	120	125				
Lys Asn Ile	Pro Ile Thr Ser	Gly Glu Lys Thr	Leu Val Leu Leu Ala				
	130	135	140				
Asn Tyr Lys	Ser Asp Gly Asp	Gly Leu Phe Gln Val	Glu Pro Gly Ile				
	145	150	155				
Leu Ala Gly	Val Ser Ser Leu Ser	Asp Ile Gln Arg Val	Lys Ala Glu				
	165	170	175				
Met Thr Ala	Arg Thr Leu Phe Arg	Pro Asn Gly Asn Leu	Leu Met Ser				
	180	185	190				
Val Thr Lys	Thr Glu Glu Ile Ser	Pro Asp Thr Arg Arg	Leu Glu Val				
	195	200	205				
Ser Leu Lys	Arg Ala Glu Ala Lys	Ile Thr Ile Asn Leu	Lys Thr Gly				
	210	215	220				
Glu Gly Leu	Thr Phe Val Pro Gly	Thr Trp Arg Val	Gly Asn Val Pro				
	225	230	235				
Ala Ser Thr	Phe Val Thr Glu His	Val Lys Gly Ser Asp	Ala Gly Ala				
	245	250	255				
Pro Trp Asp	Ala Gly Gly Met Glu	Met Asp Ser Tyr Trp	Leu Ser Glu				
	260	265	270				
Leu Phe Gln	Phe Glu Gly Asp Ala	Thr Thr Thr Thr	Thr Phe Tyr				
	275	280	285				
Leu Pro Glu	Asn Arg Lys Leu Ala	Lys Lys Met Ile Thr	Pro Ala Ser				
	290	295	300				
Pro Gly Tyr	Asn Ala Glu Arg Lys	Gly Tyr Asp Leu Arg	Gln Lys Gln				
	305	310	315				
Val Lys Ser	Pro Val Pro Asp Ala	Thr Glu Lys Pro Asn	Val Gln Asn				
	325	330	335				
Gly Ala Thr	Glu Tyr Ala Pro Asp	Leu Ala Pro Tyr Ile	Glu Phe Thr				
	340	345	350				
Gly Glu Leu	Arg Gln Asp Met Thr	Thr Gly Glu Val Ser	Thr Glu Arg				
	355	360	365				
Phe Gly Arg	Val Thr Tyr Arg Val	Tyr Leu Gly Tyr Thr	Ala Glu Asn				
	370	375	380				
Asp Pro Val	Asn Asp Tyr Asp Ile	Glu Arg Asn Val His	Tyr Thr Tyr				
	385	390	395				
Asn Val Thr	Ile Lys Gly Met Asn	Asp Leu Val Val Glu	Ala Met Ser				
	405	410	415				
Asp Lys Asp	Arg Glu Glu Glu Pro	Ala Gly Val Glu Gly	Leu Val				
	420	425	430				
Tyr Asp Ala	His Arg Ser Phe Ser	Phe Asp Cys His Tyr	Glu Gln Gly				
	435	440	445				
Leu Met Arg	Phe Asn Lys Asp Glu	Leu Ala Ile Phe Asn	Pro Asp Gly				
	450	455	460				
Ser Leu Lys	Asp Asp Ala Met Ile	Ser Phe Ala Ile Arg	Thr Pro Phe				
	465	470	475				
Cys Asp Lys	Ile Val Ser Tyr Thr	Lys Ala Glu Leu Glu	Gln Leu Glu				
	485	490	495				
Asp Asn Gly	Tyr Val Pro Ser Gly	Glu Lys Lys Ala Asp	Thr Gly Trp				
	500	505	510				
Leu Ala Phe	Phe Ile His Pro Ser	Thr Leu Ser Asp Asn	Gly Asn Glu				
	515	520	525				
Thr Met Glu	Tyr Tyr Ser Asn Thr	Gly Ala His Leu Leu	Ser Leu Glu				
	530	535	540				
Gln Phe Leu	Tyr Arg Leu Val Lys	Glu Pro Asp Tyr Val	Phe Asn Ala				
	545	550	555				
Ser Thr Gly	Leu Cys Lys Val Thr	Val Tyr Ala Asn Glu	Tyr Phe Tyr				
	565	570	575				

Glu	Arg	Asn	Pro	Met	Arg	Asp	Gly	Ala	Pro	Glu	Asp	Lys	Asn	Leu	Trp	580	585	590
Lys	Thr	Phe	Ala	Asn	Ala	Pro	Asp	Arg	Thr	Phe	Asp	Leu	Leu	Val	Asn	595	600	605
Thr	Ser	His	Glu	Ile	Ser	Pro	Asp	Gly	Gln	Ser	Arg	Tyr	His	Gln	Ala	610	615	620
Val	Val	Ser	Ile	Arg	Gln	Met	Ser	Ile	Lys	Thr	Val	Phe	Thr	Glu	Gly	625	630	635
Pro	Glu	Gly	Met	Arg	Val	Trp	Gly	Val	Glu	Asn	Val	Asn	Glu	Thr	Pro	645	650	655
Asp	Leu	Asp	Phe	Met	Val	Lys	Ala	Pro	Gly	Glu	Pro	Asp	Ala	Phe	Tyr	660	665	670
Asn	Lys	Tyr	Thr	Ser	Asn	Gly	Trp	Ser	Asn	Thr	Trp	Lys	Val	Met	Ala	675	680	685
Arg	Ser	Gly	Asp	Phe	Ser	Gln	Glu	Val	Met	Ile	Asp	Pro	Met	Arg	Arg	690	695	700
Ser	Lys	Gln	Asp	Gln	Leu	Trp	Gln	Val	Met	Thr	Lys	Val	Asp	Asn	Ala	705	710	715
Lys	Leu	Thr	Leu	Ser	Arg	Asp	His	Tyr	Asn	Leu	Ala	Ala	Lys	Asn	Tyr	725	730	735
His	Ala	Glu	Tyr	Ala	Cys	Phe	Thr	Pro	Phe	Leu	Arg	Asn	Arg	Asp	Asp	740	745	750
Asn	Arg	Asp	Gly	Arg	Met	Gln	Ala	Ala	Glu	Met	Lys	Trp	Tyr	Ile	Pro	755	760	765
Ser	Val	Ser	Glu	Ser	Gly	Met	Leu	Leu	Val	Gly	Glu	Arg	Ala	Leu	Pro	770	775	780
Leu	His	Ser	Arg	Leu	His	Gly	His	Ala	Pro	Ser	Asp	Asn	Ala	Thr	Ala	785	790	795
Phe	Tyr	Met	Ser	Arg	Ala	Phe	Met	Ala	Ser	Thr	Asn	Leu	Ser	Leu	Tyr	805	810	815
Ser	Ser	Asn	Pro	Tyr	Ile	Cys	Ile	Leu	Glu	Ser	Arg	Ser	Val	Thr	Pro	820	825	830
Ile	Ala	Asn	Phe	Asp	Tyr	Tyr	Lys	Gly	Gly	Asn	Ser	Pro	Gly	Asp	Arg	835	840	845
Thr	Pro	Tyr	Ser	Glu	Val	Arg	Leu	Ile	Arg	Asp	Leu	Gly	Met	Leu	Glu	850	855	860
Ser	Gly	Glu	Glu	Ser	Tyr	His	Ile	Glu	Glu	Leu	Gly	Lys	Glu	Leu	Asn	865	870	875
Lys	Ser	Leu	Val	Asn	Asn	Arg	Thr	Lys	Glu	Glu	Tyr	Leu	Val	Phe	Arg	885	890	895
Ala	Asp	Asn	Leu	Pro	Tyr	Ser	Met	Thr	Arg	Gly	Val	Arg	Ala	Ile	Tyr	900	905	910
Glu	Leu	Pro	Ala	His	Asp	Glu	Asp	Ser	Gln	Ser	Asn	Thr	Ile	Tyr	Lys	915	920	925
Asn	Gly	Phe	Glu	Val	Ala	Lys	Tyr	Ile	Ala	Asn	Lys	Ile	Asp	Lys	Pro	930	935	940
Lys	Asp	Leu	Asn	Asn	Pro	Asp	Arg	Lys	Ser	Glu	Tyr	Tyr	Leu	Gln	Asp	945	950	955
Trp	Ser	Thr	Leu	Met	Ala	Asp	Ile	Glu	Gln	Gly	Asn	Ser	Pro	Cys	Ala	965	970	975
Tyr	Tyr	Tyr	Gln	Glu	Ala	Asp	Lys	Ser	Asp	Leu	Gly	Thr	Trp	Arg	Val	980	985	990
Pro	Asn	Glu	Val	Glu	Leu	Ile	Ile	Met	Cys	Gly	Ser	Leu	Phe	Asp	Trp	995	1000	1005
His	Asn	Pro	Glu	Lys	Lys	Glu	Val	Tyr	Glu	Phe	Gly	Asn	Asp	Leu	Pro	1010	1015	1020
Ser	Leu	Gly	Val	Val	Glu	Ser	Glu	Val	Leu	His	Ser	Arg	Thr	Gly	Phe	1025	1030	1035
Ser	Lys	Arg	Ser	Met	Asn	Gly	Ala	Arg	Ser	Phe	Ser	Ala	Gly	Tyr	Gln			

1045 1050 1055
 Met Tyr Leu His Gly Tyr Leu Arg Trp Val Thr Thr Val Asp Thr Gln
 1060 1065 1070
 Trp Ala Gly Asp Asn Asp Arg Leu Val Asn Asn Arg Lys Gly Tyr Val
 1075 1080 1085
 Arg Cys Val Arg Asp Leu Glu
 1090 1095

<210> 10247
 <211> 89
 <212> PRT
 <213> B.fragilis

<400> 10247
 Ile Lys Ile Ser Leu Gln Asn Tyr Ile Trp Tyr Ile Arg Val Glu Leu
 1 5 10 15
 Phe Ser Met Leu Ser Glu Leu Ile Gly Asn Phe Met Lys Lys Gly Glu
 20 25 30
 Tyr Leu Arg His Met Arg Val Phe Ser Ser Val Arg Phe Pro Arg Gly
 35 40 45
 Tyr Ser Cys Val Ala Leu Tyr Gln Glu Val Val Pro Phe Ser Lys Ala
 50 55 60
 Met Gly Leu Val Leu Gly Ser Glu Ile Val Ile Pro Glu Lys Val Cys
 65 70 75 80
 Met Gly Arg Gly Pro Leu Val Leu Glu
 85

<210> 10248
 <211> 136
 <212> PRT
 <213> B.fragilis

<400> 10248
 Lys Lys Met Ser Lys Ser Ser Phe Leu Leu Asp Phe Lys Ala Phe Val
 1 5 10 15
 Met Arg Gly Asn Val Val Asp Met Ala Val Gly Val Ile Ile Gly Gly
 20 25 30
 Ala Phe Gly Lys Ile Ile Ser Ser Val Val Ala Asp Ile Ile Met Pro
 35 40 45
 Pro Ile Gly Leu Leu Val Gly Gly Thr Asn Phe Ser Glu Leu Arg Trp
 50 55 60
 Glu Leu Glu Pro Ala Arg Val Val Asp Gly Val Glu Gln Ala Ala Val
 65 70 75 80
 Thr Ile Asn Tyr Gly Asn Phe Ile Gln Thr Met Leu Asp Phe Val Ile
 85 90 95
 Ile Ala Phe Ala Ile Phe Leu Phe Ile Arg Leu Leu Ser Asn Leu Arg
 100 105 110
 Arg Lys Lys Glu Glu Thr Pro Phe Ala Pro Thr Cys Pro Glu Gln Arg
 115 120 125
 Gly Lys Val Thr Phe Arg Asn Thr
 130 135

<210> 10249
 <211> 93
 <212> PRT
 <213> B.fragilis

<400> 10249
 Arg His Ile Pro Glu Ala Asn Ser Trp Gln Glu Gly His Pro His Pro

```

1           5           10           15
Lys Ile Gln Leu Thr Val Glu Tyr Tyr Thr Gly Gly Asn Ile Ser Gln
      20           25           30
Thr Arg Thr Arg Thr Phe Leu Leu Asp Ile Gly Glu Glu Ser Ser Pro
      35           40           45
Gly Val Tyr Ser Gly Pro Ile Tyr Pro Asn Arg Asp Tyr Lys Val Phe
      50           55           60
Met Val Leu Pro Glu Ala Ala Asp Arg Glu Ile Ile Tyr Arg Val Glu
65           70           75           80
Ser Trp Glu Arg Lys Asp Val Glu Phe Pro Pro Phe Gln
      85           90

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<210> 10250

<211> 176

<212> PRT

<213> B.fragilis

<400> 10250

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Leu Arg Ala Pro Gly Glu Glu Arg Ala Arg Ala Asp Gly Gln Gly Ala
1           5           10           15
Cys Val Tyr Gln Ile Val Lys Asp Lys Arg Ile Asp Asp Val Glu Met
      20           25           30
Thr Gly Gln Trp Glu Thr Ala Leu Ala Lys Ile Glu Ser Gly Glu Met
      35           40           45
Asn Pro Asp Ser Leu Arg Lys Ala Ile Glu Gly Tyr Ala Ala Gln Ile
      50           55           60
Thr Glu Glu Leu Leu Gln Val Gln Val Ser Val Ala Asp Gly Gly His
65           70           75           80
Ile Pro Cys Pro Lys Cys Arg Ser Gly Arg Ile Leu Leu Tyr Pro Lys
      85           90           95
Val Ala Lys Cys Ser Asn Val Asp Cys Ser Leu Thr Val Phe Arg Asn
      100          105          110
Lys Gly Glu Lys Gln Leu Thr Asp Ser Gln Ile Thr Asp Leu Val Thr
      115          120          125
Lys Gly Arg Thr Ala Leu Ile Lys Gly Phe Arg Ser Arg Glu Asp Lys
      130          135          140
Pro Phe Asp Ala Tyr Leu Thr Phe Asp Lys Asp Phe Arg Ile Val Tyr
145          150          155          160
Gly Phe Pro Pro His Thr Asp Lys Ser Lys Gly Lys Glu His Arg Arg
      165          170          175

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<210> 10251

<211> 67

<212> PRT

<213> B.fragilis

<400> 10251

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Phe Phe Thr Thr Met Lys Glu Tyr Cys Val Tyr Trp Phe Glu Asn Gly
1           5           10           15
Glu Pro Arg His Glu Val Phe Ser Cys Leu Asp Gly Ala Glu Met Phe
      20           25           30
Ser Cys Met Ile Arg Gly Gln Asp Gly Val Glu His Val Glu Ile Ser
      35           40           45
Glu Glu Asp Ile Ser Ala Pro Glu Glu Phe Arg Glu Ile Cys Pro Gly
      50           55           60
Asp Phe Ser
65

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<210> 10252

<211> 721
 <212> PRT
 <213> B.fragilis

<400> 10252

Leu	Lys	Arg	Thr	Leu	Tyr	Thr	Asn	Ala	Lys	Ala	Asp	His	Met	Val	Arg
1				5					10					15	
Lys	Glu	Glu	Ile	Leu	Ala	Lys	Thr	Gly	Asn	Gly	Leu	Glu	Val	Phe	Arg
			20					25					30		
His	Tyr	Leu	Pro	Val	Lys	Trp	Arg	Val	Gly	Arg	Asn	Phe	Leu	Asn	Pro
		35					40					45			
Leu	Tyr	Ala	Asp	Gly	Arg	Ala	Ser	Cys	Asn	Val	Tyr	Tyr	Asp	Arg	His
		50				55					60				
Ser	Gly	Met	Tyr	Arg	Met	Lys	Asp	Phe	Gly	Asn	Gly	Glu	Tyr	Ser	Gly
65					70					75				80	
Asp	Cys	Phe	Phe	Leu	Val	Ala	Lys	Leu	Lys	Gly	Leu	Asp	Cys	Arg	Ser
				85					90					95	
Ala	Ala	Asp	Phe	Val	Glu	Val	Leu	His	Thr	Ile	Asp	Arg	Glu	Leu	Cys
			100					105					110		
Leu	Gly	Leu	Asp	Gly	Ala	Ile	Pro	Ser	Gly	Thr	Asn	Asn	Arg	Glu	Gly
		115					120					125			
Ser	Cys	Arg	Thr	Thr	Arg	Pro	Val	Thr	Gly	Ala	Arg	Glu	Lys	Ser	Glu
		130				135					140				
Gly	Glu	Asn	Thr	Gly	Glu	Ser	Ile	Pro	Gly	Asp	Thr	Val	Thr	Gly	Thr
145					150					155					160
Glu	Gly	Lys	Asp	Leu	Ser	Arg	Glu	Arg	Pro	Gly	Pro	Ser	Pro	Tyr	Gln
				165					170					175	
Val	Ala	Glu	Lys	Ser	Phe	Thr	Glu	Arg	Glu	Leu	Ala	Tyr	Trp	Gly	Ile
			180					185					190		
Ser	Gly	Ile	Thr	Val	Glu	Val	Leu	His	Arg	Tyr	Gly	Val	Val	Ser	Leu
		195					200					205			
Ala	Glu	Tyr	Arg	Ser	Glu	Thr	Arg	Glu	Gly	Lys	Thr	Phe	Gly	Phe	Thr
		210				215					220				
Ser	Thr	Pro	Ala	Glu	Pro	Met	Phe	Gly	Tyr	Arg	Gly	Lys	Trp	Gly	Val
225					230					235					240
Lys	Val	Tyr	Arg	Pro	Leu	Ser	Glu	Val	Arg	Phe	Val	Tyr	Gly	Gly	His
				245					250					255	
Thr	Gly	Asp	Asn	Tyr	Cys	Phe	Gly	Leu	Glu	Gln	Leu	Pro	Ser	Lys	Gly
			260					265					270		
Asp	Leu	Leu	Phe	Leu	Thr	Gly	Gly	Lys	Asp	Val	Met	Thr	Leu	Ala	
		275					280					285			
Ala	His	Gly	Phe	Gln	Ala	Ile	Cys	Phe	Asn	Ser	Glu	Thr	Ser	Val	Ile
		290				295					300				
Pro	Ala	Lys	Thr	Val	Arg	Lys	Leu	Val	Tyr	Arg	Phe	Lys	His	Ile	Val
305					310					315					320
Leu	Leu	Tyr	Asp	Thr	Asp	Lys	Thr	Gly	Leu	Glu	Cys	Ser	Glu	Lys	His
				325					330					335	
Arg	Val	Gln	Leu	Ser	Glu	Tyr	Gly	Val	Lys	Arg	Leu	Val	Leu	Pro	Leu
			340					345					350		
Pro	Gly	Thr	Lys	Ser	Glu	Lys	Asp	Val	Thr	Asp	Tyr	Phe	Lys	Ala	Gly
		355					360					365			
His	Thr	Arg	Glu	Asp	Leu	Met	Gly	Leu	Phe	Leu	Lys	Leu	Leu	Asp	Thr
		370				375						380			
Leu	Tyr	Gly	Asp	Thr	Met	Ala	Val	Leu	Lys	Ser	Cys	Glu	Ile	Asp	Tyr
385					390					395					400
Asp	Cys	Pro	Pro	Glu	Gln	Ala	Val	Ala	Ile	Val	Thr	Ala	Gly	Asp	Val
				405					410					415	
Pro	Leu	Gly	Ser	Glu	Glu	Asn	Ile	Leu	Cys	Ile	Thr	Gly	Gly	Glu	Gly
			420					425					430		

Thr Gly Lys Ser Asn Tyr Thr Ala Ala Leu Val Ala Gly Ala Ile Met
 435 440 445
 Glu Arg Glu Glu Asp Ala Asp Leu Leu Gly Val Lys Val Glu Pro Asn
 450 455 460
 Arg Lys Gly Arg Ala Val Leu Leu Tyr Asp Thr Glu Gln Ser Glu Gln
 465 470 475 480
 Gln Leu Tyr Lys Asn Thr Gly Arg Leu Leu Arg Arg Ala Gly Arg Glu
 485 490 495
 Lys Met Pro Pro Tyr Leu His Val Tyr Cys Leu Thr Gly Met Ser Arg
 500 505 510
 Asn Glu Arg Leu Thr Ala Ile Ile Gln Ser Met Asp Lys Tyr His Tyr
 515 520 525
 Leu His Gly Gly Ile His Leu Val Val Ile Asp Gly Val Ala Asp Leu
 530 535 540
 Ile Arg Cys Ser Asn Asp Glu Ala Glu Ser Val Ala Leu Val Asp Glu
 545 550 555 560
 Ile Tyr Arg Leu Ala Gly Ile Tyr Arg Thr Cys Ile Thr Ala Val Val
 565 570 575
 His Phe Val Pro Asn Gly Leu Lys Leu Arg Gly His Leu Gly Ser Glu
 580 585 590
 Leu Gln Arg Lys Ser Ala Ala Ile Leu Ser Ile Glu Lys Asp Glu Asn
 595 600 605
 Pro Glu Val Ser Val Val Lys Ala Leu Lys Val Arg Asp Gly Ser Pro
 610 615 620
 Leu Asp Ile Pro Leu Met Gln Phe Arg Trp Asp Lys Gln Ala Gly Met
 625 630 635 640
 Pro Val Tyr Met Gly Glu Lys Pro Arg Val Glu Lys Glu Arg Arg Lys
 645 650 655
 Glu Lys Glu Leu Ser Glu Met Ala Arg Ala Ala Phe Val Thr Gln Lys
 660 665 670
 Lys Tyr Gly Tyr Ile Glu Leu Cys Glu Leu Ile Gln Glu Thr Leu Asp
 675 680 685
 Val Lys Glu Arg Thr Ala Lys Gly Tyr Ile Arg Tyr Met Arg Glu Lys
 690 695 700
 Glu Ile Ile Glu Lys Glu Gly Asp Cys Tyr Val Tyr Gly Gln Arg Lys
 705 710 715 720
 Ile

<210> 10253

<211> 140

<212> PRT

<213> B.fragilis

<400> 10253

Ala Ile Arg Thr Lys Asp Val Gly Asp Asn Trp Arg Lys Pro Gly Gln
 1 5 10 15
 Asp Phe Leu Val Ser Lys Ser Phe Asp Val Thr Leu Arg Asp Phe Thr
 20 25 30
 Leu Ile Asp Glu Ile Leu Lys Arg Val Asp Thr Lys Gly Ile His Thr
 35 40 45
 Met Tyr Ile Asp Lys Leu Glu His Arg His Ile Leu Ser Tyr His Arg
 50 55 60
 Lys Gly Lys Ile Glu Ala Leu Lys Ala Ala Arg Glu Lys Ala Val Tyr
 65 70 75 80
 Leu Leu Glu Ala Ile Gly Lys Arg Pro Gly Glu Ile Ile Arg Ile Val
 85 90 95
 Glu Gly Gly Asp Ala Gly Lys Glu Met Phe Ala Gln Gly His Ile Leu
 100 105 110

Ser Val Ala Pro Pro Pro Phe Glu Arg Ser Arg Thr Ile Lys Lys Arg
 115 120 125
 Tyr Ser Met Leu Val Arg Phe Gly Ile Val Asp Arg
 130 135 140

<210> 10254
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 10254
 Pro Phe Ala Ala Ser Ala Ser Ser Thr Arg Arg Arg Cys Arg Ser Ser
 1 5 10 15
 Ser Ser Val Thr Thr Ser Pro Thr Pro Thr Ser Arg Cys Ser Gly Arg
 20 25 30
 Arg Ala Thr Trp Gly Thr Arg Arg Leu Val Thr Asn Arg Ala Gly Glu
 35 40 45
 Gln Val Glu Ala Leu Val Ser Arg Asn Phe Lys Thr Asn Glu Leu Val
 50 55 60
 Ala Phe Pro Leu Ser Lys Val Asn Ile Pro Ala Glu Lys Asn Gly His
 65 70 75 80
 Thr Phe Thr Pro Asp Glu Ile Ala Arg Leu Lys Gln Gly Glu Ala Val
 85 90 95
 Val Cys Gln Phe Leu Ser Arg Ala Lys Glu Gly Glu Gln Pro Lys Ile
 100 105 110
 Tyr Pro Ala Pro Val Gln Phe Ser Ala Ala Lys Met Gln Leu Glu Phe
 115 120 125
 Leu Phe Gly Asp Arg Gly Lys Leu Ala Met Asp Ala Tyr Lys Thr Asn
 130 135 140
 Leu Lys Gln Thr Ala Asn Gln Glu Val Pro Lys Thr Phe Arg Lys Gln
 145 150 155 160
 Glu Leu Thr Glu Lys Ser Arg Leu Glu Leu Glu Ala Gly Gly Thr Val
 165 170 175
 Lys Val Ser Gly Leu Val Asp Lys Lys Gly Lys Ala Tyr Gln Gly Tyr
 180 185 190
 Ile Thr Trp Lys Pro Gly Glu Lys Pro Ala Phe Met Phe Pro Lys Asp
 195 200 205
 Tyr Lys Ala Ala Leu Glu Glu Gly Arg Val Lys Pro Ala Val Glu Asn
 210 215 220
 Glu Val Gln Val Ala Val Asn Ser Glu Gly Lys Thr Val Glu Ala Thr
 225 230 235 240
 Arg Asn Leu Lys Glu Ala Leu Gln Ser Ala Gln Gln Arg Pro Thr Gly
 245 250 255
 Glu Gln Lys Gln Gln Gln Glu Arg Lys Gln Glu Gln Lys Glu Glu Arg
 260 265 270
 Lys Gln Ser Gln Lys Gln Glu Gln Pro Asp Lys Pro Lys Arg Ser Arg
 275 280 285
 Gly Val Arg Arg
 290

<210> 10255
 <211> 281
 <212> PRT
 <213> B.fragilis

<400> 10255
 Leu Arg Asn Asn Met Ile Glu Thr Tyr Phe Asn Asn Leu Met Gln Glu
 1 5 10 15
 Val Glu Arg Lys Met Gly Ile Glu Ser Ser Arg Met Glu Gly Glu Gln

20	25	30
Val Ile Arg Thr Cys Gln Glu Met Val Ser Phe Leu Arg Glu Arg Ser		
35	40	45
Arg Glu Leu Lys Asp Tyr Val Leu Asn His Pro Phe Ser Asn Val Glu		
50	55	60
Glu Glu Ile Cys Phe Phe Lys Tyr Tyr Lys Pro Ala Leu Thr Gly Arg		
65	70	75
Leu Leu Tyr Tyr Tyr Arg Val Tyr Gln Ile Glu Ser Gly Cys Ser Cys		
85	90	95
Cys Pro Glu Ile Ala Arg Met His Tyr Arg Lys Ala Met Lys Glu Tyr		
100	105	110
Gln Arg Lys Leu Glu Arg Tyr Leu Pro Phe Tyr Gln Tyr Tyr Arg Ser		
115	120	125
Gly Ala Thr Tyr Arg Asp His Tyr Tyr Phe Arg Arg Ala Lys Lys Glu		
130	135	140
Leu Ser Pro Glu Ser Gly Ser Phe Met Leu Glu Glu Asp Ser Val Met		
145	150	155
Ser Thr Gly Tyr Asp Leu Leu Ala Ala Arg Leu Ile Ala Ala Glu Met		
165	170	175
Leu Leu Gly Tyr Leu Asn Arg Lys Val Leu Leu Ala Met Glu Gly Ala		
180	185	190
Tyr Ala Val Gln Glu Lys Glu His Trp Thr Asp Arg Lys Ala Ala		
195	200	205
Ala Val Glu Leu Ile Tyr Gly Ile Trp Ala Met Gly Ser Val Asp Asn		
210	215	220
Gly Arg Val Ser Ile Val Glu Leu Val Met Leu Phe Glu Gln Met Phe		
225	230	235
His Ile Asp Leu Gly Asp Val Tyr His Thr Phe Ile Ser Met Arg Asn		
245	250	255
Arg Lys Asn Ser Arg Thr Ala Tyr Leu Asp Gln Met Lys Glu Arg Leu		
260	265	270
Leu Lys Arg Met Asp Glu Thr Asp Gly		
275	280	

<210> 10256

<211> 415

<212> PRT

<213> B.fragilis

<400> 10256

Ser Gly Cys Lys Ile Gly Pro Val Ser Thr Ile Phe Ser Pro Ile Asn	
1	15
Arg Ile Arg Lys Met Lys Ala Pro Arg Lys Ile Tyr Thr Trp Thr Ser	
20	30
Ile Leu Leu Phe Val Cys Cys Ser Leu Ile Phe Leu Ser Cys Glu Lys	
35	45
Glu Glu Leu Gly Glu Ala Met Glu Asn Arg Lys Thr Leu Phe Met Phe	
50	60
Leu Pro Trp Ser Thr Asp Leu Thr Gly Tyr Phe Tyr Thr Asn Ile Ala	
65	80
Asp Met Glu Ala Cys Val Ser Arg Arg Gly Leu Glu His Glu Arg Ile	
85	95
Leu Val Phe Met Ser Thr Ser Ser Thr Glu Ala Thr Met Phe Glu Ile	
100	110
Ile His Ser Lys Gly Lys Cys Asp Arg Lys Thr Leu Lys Arg Tyr Gly	
115	125
Thr Ser Gly Phe Thr Thr Val Glu Gly Ile Thr Gly Ile Leu Asn Asp	
130	140
Val Gln Glu Phe Ala Pro Ala Pro Val Tyr Ala Met Ile Ile Gly Ser	

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145              150              155              160
His Gly Met Gly Trp Leu Pro Val Asp Gly Thr Gln Ala Asp Ser Leu
              165              170              175
Phe Arg Met Lys Lys His Trp Glu Tyr Gln Glu Gln Pro Leu Thr Arg
              180              185              190
Tyr Phe Gly Gly Leu Thr Arg Glu Phe Gln Thr Asp Val Gly Thr Leu
              195              200              205
Ala Arg Gly Ile Val Gly Ala Gly Val Lys Met Glu Tyr Ile Leu Phe
              210              215              220
Asp Asp Cys Tyr Met Ser Ser Val Glu Val Ala Tyr Glu Leu Lys Glu
225              230              235              240
Ala Thr Arg Phe Leu Ile Ala Ser Thr Ser Glu Met Met Ala Tyr Gly
              245              250              255
Met Pro Tyr Ala Thr Val Gly Glu Phe Leu Leu Gly Asn Pro Asp Tyr
              260              265              270
Gly Ser Leu Cys Glu Gly Phe His Asp Phe Tyr Ser Thr Tyr Glu Met
              275              280              285
Met Pro Cys Gly Thr Leu Ala Val Thr Asp Cys Ser Glu Leu Asp Asn
              290              295              300
Met Ala Ala Ile Met Lys Ser Ile Asn Asp Arg Tyr Val Phe Asp Asp
305              310              315              320
Ser Leu Gln Gly Glu Leu Gln Gly Leu Asp Gly Tyr Thr Pro Val Ile
              325              330              335
Phe Tyr Asp Phe Ala Asp Tyr Val Leu Thr Leu Cys Ser Asp Pro Val
              340              345              350
Leu Thr Ala Arg Phe Arg Glu Gln Leu Glu Arg Leu Val Pro Tyr Lys
              355              360              365
Thr His Thr Gly Lys Phe Tyr Ser Arg Thr Lys Gly Pro Leu Pro Ile
              370              375              380
His Thr Phe Ser Gly Ile Thr Ile Ser Asp Pro Ser Thr Asn Pro Met
385              390              395              400
Ala Leu Leu Lys Gly Thr Thr Ser Trp Tyr Lys Ala Thr His Glu
              405              410              415

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<210> 10257

<211> 85

<212> PRT

<213> B.fragilis

<400> 10257

```

His Ala Ala Lys Val Phe Phe Leu Val Gln Lys Asn Arg Arg Gly Ala
1              5              10              15
Leu Phe Gly Leu Ser Thr Val Ala Ile Tyr Cys Ile Phe Thr Lys Trp
              20              25              30
Arg Ile Gly Lys Gly Asp Leu Ala Thr Cys Tyr Glu Pro Ala Ser Leu
              35              40              45
Phe Leu Val Leu Gln Lys Val Ile Arg Pro Phe Arg Pro Phe Val Ser
              50              55              60
Thr Asn Val Pro Ser Phe Asp Gln Gly Lys Leu Ser Gly Cys Ser Ser
65              70              75              80
Gly Tyr Ala Trp Arg
              85

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<210> 10258

<211> 232

<212> PRT

<213> B.fragilis

<400> 10258

```

Asn Ala Met Asn Arg Tyr Val Ser Glu Met Ile Gly Thr Met Val Leu
1      5      10      15
Val Leu Met Gly Cys Gly Ser Ala Val Phe Ala Gly Asp Met Pro Gly
20      25      30
Ala Val Thr Thr Gly Val Gly Thr Leu Gly Val Ala Ile Ala Phe Gly
35      40      45
Leu Ser Val Val Ala Met Ala Tyr Ala Ile Gly Gly Ile Ser Gly Cys
50      55      60
His Ile Asn Pro Ala Ile Thr Leu Gly Met Tyr Cys Ser Gly Gly Met
65      70      75      80
Gly Gly Lys Asp Ala Leu Leu Tyr Ile Ile Phe Gln Ile Ile Gly Gly
85      90      95
Ile Leu Gly Ser Ala Val Leu Phe Ile Leu Val Ser Thr Gly Pro His
100     105     110
Ala Gly Pro Thr Met Thr Gly Ser Asn Gly Phe Val Glu Gly Glu Met
115     120     125
Leu Gln Ala Phe Ile Ala Glu Ala Val Phe Thr Phe Ile Phe Val Leu
130     135     140
Val Ala Leu Gly Ala Thr Asp Lys Lys Lys Gly Ala Gly Lys Leu Ala
145     150     155     160
Gly Leu Val Ile Gly Leu Thr Leu Val Leu Val His Ile Val Cys Ile
165     170     175
Pro Ile Thr Gly Thr Ser Val Asn Pro Ala Arg Ser Ile Gly Pro Ala
180     185     190
Leu Phe Glu Gly Gly Gly Ala Ile Ser Gln Leu Trp Leu Phe Ile Val
195     200     205
Ala Pro Leu Thr Gly Gly Leu Ala Ser Ala Ile Val Trp Lys Ala Ile
210     215     220
Ser Gln His Ser Asp Arg Gln Arg
225     230

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<210> 10259

<211> 378

<212> PRT

<213> B.fragilis

<400> 10259

```

His Asn Met Asn Phe Glu Gln Leu Ala Thr Ile Ile Ala Asp Thr His
1      5      10      15
Gln Arg Leu Gln Gln Ser Ala Val Lys Ala Val Asn Gln Cys Gln Thr
20      25      30
Met Arg Asn Trp Leu Ile Gly Phe Tyr Ile Val Glu Phe Glu Gln Asn
35      40      45
Gly Glu Asp Arg Ala Lys Tyr Gly Glu Phe Leu Leu Lys Asn Leu Glu
50      55      60
Gln Lys Val Asn Leu Lys Gly Leu Asn Ile Thr Leu Phe Lys Arg Ser
65      70      75      80
Arg Val Phe Tyr Met Val Tyr Pro Gln Leu Ala Thr Val Ile Lys Thr
85      90      95
Ile Leu Pro Pro Thr Gly Ala Ser Thr Met His Leu Leu Glu Met Gln
100     105     110
Gly Leu Gly Lys Ser Ala Ser Leu Met His Leu Leu Gln Asn Ala Glu
115     120     125
Asn Lys Gln Asp Ile Val Asn Thr Ile Glu Pro Gln Lys Leu Leu Ser
130     135     140
Ser Ile Ser Phe Thr His Phe Ile Glu Leu Val Lys Ile Asp Asn Pro
145     150     155     160
Ile Lys Arg Met Tyr Tyr Glu Met Leu Thr Ile Gln Thr Gly Leu Ser
165     170     175

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Val Arg Glu Leu Lys Arg Gln Ile Gly Ala Leu Ser Tyr Glu Arg Val
 180 185 190
 Gly Leu Ser Gly Asn Met Glu Asn Ala Leu Ala Ala Ile Gln Gln Lys
 195 200 205
 Ile His Pro Gln Thr Val Thr Asp Ala Val Lys Asp Asp Tyr Phe Phe
 210 215 220
 Glu Phe Leu Asn Ile Pro Gln Gln Arg Ala Ser Leu Leu Lys Glu Lys
 225 230 235 240
 Glu Leu Glu Thr Leu Leu Asp His Leu Arg Asp Phe Ile Ile Glu
 245 250 255
 Leu Gly Asn Gly Phe Cys Phe Glu Ala Arg Gln Lys Arg Ile Leu Ile
 260 265 270
 Gly Asp Glu Phe Tyr Phe Ile Asp Met Val Phe Tyr His Arg Ile Leu
 275 280 285
 Lys Cys His Ile Leu Cys Glu Leu Lys Val Asp Thr Phe Asn His Ala
 290 295 300
 His Val Ser Gln Leu Tyr Ser Tyr Leu Asn Tyr Tyr Lys Ala Glu Val
 305 310 315 320
 Met Glu Pro Gly Asp Asn Pro Pro Ile Gly Ile Leu Leu Val Thr Asp
 325 330 335
 Lys Asn Asp Ala Leu Val Arg Tyr Thr Thr Thr Gly Leu Asp Glu Gln
 340 345 350
 Ile Phe Val Ser Lys Tyr Gln Leu Gln Leu Pro Thr Glu Gln Gln Leu
 355 360 365
 Lys Glu Leu Ile Leu Lys Thr Ile Arg Gln
 370 375

<210> 10260
 <211> 120
 <212> PRT
 <213> B.fragilis

<400> 10260
 Lys Leu Asn Leu Met Met Lys Lys Ile Phe Ile Ser Leu Phe Leu Ser
 1 5 10 15
 Gly Val Phe Met Tyr His Thr Asn Ala Gln Thr Ala Val Glu Gly Asn
 20 25 30
 Lys Phe Leu Asp Asn Trp Ser Ile Gly Ile Ser Ala Gly Gly Thr Thr
 35 40 45
 Pro Leu Thr His His Ser Phe Phe Gly Asn Met Arg Pro Ile Thr Glu
 50 55 60
 Ile Glu Leu Asn Lys Gln Leu Thr Pro Val Phe Gly Phe Gly Leu Glu
 65 70 75 80
 Ala Val Gly Ser Phe Asn Thr Ser Gln Ser Arg Thr Ile Phe Asp Arg
 85 90 95
 Ser Asn Val Ser Leu Leu Gly Leu Glu Asn Leu Asn Asn Leu Leu Gly
 100 105 110
 Thr Tyr Thr Gly Val Pro Arg Pro
 115 120

<210> 10261
 <211> 138
 <212> PRT
 <213> B.fragilis

<400> 10261
 Lys Ile Met Glu Ile Ile Ala Ile Glu Ser Ile Ala Phe Ala Thr Leu
 1 5 10 15
 Val Glu Lys Ile Glu Gly Ile Ala Ala Tyr Val Gln Ala Ser Gly Thr

	20		25		30										
Lys	Glu	Arg	Glu	Gln	Trp	Pro	Val	Ala	Asp	Lys	Lys	Gly	Thr	Arg	Lys
	35		40		45										
Ala	Gly	Leu	Trp	Met	Thr	Gly	Lys	Glu	Val	Cys	Glu	Gln	Leu	Glu	Ile
	50		55		60										
Ser	Pro	Arg	Thr	Leu	Gln	Arg	Tyr	Arg	Thr	Asn	Arg	Ile	Ile	Ala	Tyr
65				70						75					80
Ser	Ile	Cys	Gly	Arg	Lys	Ile	Arg	Tyr	Arg	Arg	Thr	Asp	Val	Glu	Gln
			85						90				95		
Phe	His	Glu	Arg	Trp	Ile	Arg	Glu	Thr	Pro	Asp	Lys	Leu	Val	Asp	Arg
			100					105					110		
Met	Ile	Glu	Ala	Tyr	Pro	Leu	His	Gln	Cys	Lys	Ser	Arg	Ser	Tyr	Gly
			115					120					125		
Lys	Lys	Arg	Gly	Asn	Thr	Gly	Lys	Asn	Arg						
	130					135									

<210> 10262

<211> 143

<212> PRT

<213> B.fragilis

<400> 10262

Arg	Asn	Gly	Arg	Arg	Arg	Gly	Thr	Ser	Val	Thr	Cys	Gly	Lys	Arg	Lys
1			5						10					15	
Leu	Leu	Lys	Arg	Arg	Ala	Thr	Ala	Met	Tyr	Met	Asp	Ser	Glu	Lys	Phe
			20					25					30		
Glu	Asn	Trp	Met	Glu	Arg	Ile	Met	Glu	Arg	Phe	Asp	Arg	Thr	Glu	Lys
			35				40					45			
Leu	Leu	Glu	Arg	Val	Leu	Lys	Lys	Ser	Asn	Ala	Leu	Asp	Gly	Glu	Glu
			50			55					60				
Val	Leu	Asp	Asn	Gln	Asp	Leu	Cys	Leu	Leu	Leu	Lys	Val	Gly	Ile	Arg
65				70						75					80
Thr	Leu	Gln	Arg	Tyr	Arg	Ala	Ile	Gly	Ile	Leu	Pro	Tyr	Phe	Thr	Ile
			85						90					95	
Ser	Gly	Lys	Val	Phe	Tyr	Arg	Val	Lys	Asp	Val	His	Glu	Phe	Leu	Arg
			100					105					110		
Asn	Gln	Phe	Ala	Ala	Val	Glu	Glu	Arg	Ala	Ala	Lys	Arg	Lys	Glu	Lys
			115				120						125		
Glu	Val	Arg	Lys	Glu	Glu	Arg	Arg	Arg	Lys	Lys	Gly	Leu	Phe	Pro	
	130					135						140			

<210> 10263

<211> 235

<212> PRT

<213> B.fragilis

<400> 10263

Phe	Asn	Leu	Arg	Glu	Ser	Lys	Ala	Trp	Thr	Leu	Ala	Leu	Lys	Pro	Ala
1			5						10					15	
Leu	Val	Tyr	Asp	Met	Asn	Ala	Met	Gly	Ser	Glu	Ala	Val	Arg	Phe	His
			20					25					30		
Ser	Gly	Arg	Ala	Val	Trp	Glu	Ile	Ser	Val	Gly	Leu	Lys	Tyr	His	Phe
			35				40					45			
Gly	Cys	Ser	Asn	Gly	Lys	His	His	Phe	Thr	Lys	Val	Arg	Ala	Tyr	Asp
			50			55					60				
Gln	Gln	Glu	Val	Asp	Val	Leu	Asn	Ala	Lys	Ile	Asn	Glu	Leu	His	Thr
65				70						75					80
Gln	Ala	Gly	Lys	Asp	Ala	Lys	Ala	Leu	Gln	Glu	Ala	Val	Arg	Lys	Val
				85					90					95	

Thr Glu Leu Glu Ala Ala Leu Asp Lys Cys Arg Asn Gln Glu Pro Lys
 100 105 110
 Ile Val Lys Asp Thr Ile Asp Asn Thr Lys Lys Thr Leu Glu Ser Val
 115 120 125
 Ile Thr Phe Arg Gln Gly Arg Thr Thr Val Asp Asn Ser Gln Leu Pro
 130 135 140
 Asn Val Glu Arg Ile Ala Thr Tyr Leu Lys Asn His Lys Gly Ala Ser
 145 150 155 160
 Val Leu Ile Lys Gly Tyr Ala Ser Pro Glu Gly Ser Val Glu Val Asn
 165 170 175
 Glu Arg Ile Ala Arg Gln Arg Ala Glu Ala Val Lys Lys Met Leu Val
 180 185 190
 Gly Lys Tyr Gly Ile Ala Glu Glu Arg Ile Val Ala Glu Gly Gln Gly
 195 200 205
 Val Gly Asn Met Phe Glu Glu Pro Asp Trp Asn Arg Val Ser Ile Cys
 210 215 220
 Thr Ile Asn Ala Gly Thr Glu Ser Ser Ser Arg
 225 230 235

<210> 10264
 <211> 91
 <212> PRT
 <213> B.fragilis

<400> 10264
 Thr Val Met Arg Val Phe Asn Leu Leu Leu Leu Ile Ser Met Phe Ser
 1 5 10 15
 Pro Ile Pro Leu Pro Ala Gln Val Gly Glu Arg Tyr Ile Glu Val Ala
 20 25 30
 Gly Thr Ser Glu Ile Glu Val Val Pro Asp Arg Ile His Tyr Val Ile
 35 40 45
 Glu Ile Arg Gln Tyr Phe Glu Val Glu Phe Asp Gly Val Ser Glu Pro
 50 55 60
 Glu Glu Tyr Arg Thr Lys Val Pro Leu Thr Arg Ile Glu Glu Gln Leu
 65 70 75 80
 Lys Gln Val Leu Thr Ile Val Gly Val Pro Arg
 85 90

<210> 10265
 <211> 87
 <212> PRT
 <213> B.fragilis

<400> 10265
 Pro Val Asn Arg Leu Ile Asp Ser Thr His Asp Lys Met Lys Asp Tyr
 1 5 10 15
 Tyr Phe Ile Met Asn Ala Gly Val Lys Ala Gly Gly Glu Ile Thr His
 20 25 30
 Ala Val Leu Glu Gly Lys Ile Val Ser Ala Pro Lys Gly Tyr Asp Ala
 35 40 45
 Phe Thr Gly Ile Glu Ala Ala Arg Glu Lys Leu Ala Cys Gly Asn Ile
 50 55 60
 Arg Gln Gln Met Glu Glu Phe Gly Ile Glu Leu Glu Ile Val Pro Val
 65 70 75 80
 Asn Thr Asp Phe Leu Leu Arg
 85

<210> 10266
 <211> 143

100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235

<212> PRT

<213> B.fragilis

<400> 10266

Glu	Gly	Ala	Gly	Val	Arg	Thr	Glu	Arg	Arg	Gln	Asp	Met	Gly	Cys	Thr
1				5					10					15	
Val	Glu	Arg	Ser	Ala	Gly	Gly	Arg	Glu	Asn	Pro	Asn	Gly	Val	Arg	Glu
			20					25				30			
Asp	Val	Ile	Lys	Lys	Gln	Pro	Ala	Asp	Leu	Gly	Ile	Ile	Lys	Glu	Ala
		35					40					45			
Trp	Gln	Val	Leu	Leu	Ile	Ala	Lys	Ile	Thr	Glu	Ile	Val	Gly	Thr	Thr
	50					55					60				
Asn	Ile	Arg	Ile	Leu	Gln	Met	Arg	Asn	Tyr	Val	Leu	Arg	Ile	Cys	Tyr
65					70				75						80
Tyr	Cys	Arg	Ile	Val	Phe	Lys	Ile	Asn	Ser	Phe	Asn	Cys	Cys	Ser	Val
				85					90				95		
Gly	Ser	Cys	Asn	Trp	Tyr	Leu	Glu	Thr	Asn	Ile	Cys	Ser	Ser	Asn	Pro
			100					105					110		
Val	Val	Val	Tyr	Arg	Thr	Asn	Ala	Ser	Phe	Leu	Ser	Val	Thr	Ser	Lys
		115					120					125			
Met	Pro	Ile	Gly	Gly	Leu	Ser	Pro	Gly	Ser	Ile	Thr	Ser	Ala	Leu	
		130				135					140				

<210> 10267

<211> 98

<212> PRT

<213> B.fragilis

<400> 10267

Asn	Ser	Asp	Met	Thr	Lys	Ala	Asp	Ile	Ile	Asn	Arg	Val	Ser	Glu	Glu
1				5					10					15	
Leu	Gly	Ile	Asp	Arg	Arg	Thr	Val	Gly	Leu	Val	Ile	Glu	Ser	Phe	Met
			20					25				30			
Lys	Cys	Val	Lys	Asp	Ala	Leu	Gly	Arg	Glu	Arg	Ile	Val	Phe	Leu	Arg
		35					40					45			
Gly	Phe	Gly	Thr	Phe	Ser	Leu	Lys	Lys	Arg	Ala	Ala	Lys	Lys	Ala	Gln
	50					55					60				
Asn	Ile	Gln	Gln	His	Thr	Thr	Ile	Cys	Ile	Pro	Ala	Arg	Lys	Val	Pro
65					70				75						80
His	Phe	Lys	Pro	Ser	Glu	Ser	Phe	Leu	Val	Leu	Arg	Lys	Glu	Asp	Asn
				85					90					95	

Arg Lys

<210> 10268

<211> 81

<212> PRT

<213> B.fragilis

<400> 10268

Gln	Val	Arg	Ile	Thr	Cys	Ser	Pro	Ser	Ile	Arg	Glu	Asp	Ser	Met	Pro
1				5					10					15	
Ile	Leu	Arg	Ser	Thr	Ser	Cys	Ile	Lys	Leu	Leu	Lys	Tyr	Val	Ser	Ile
			20					25				30			
Met	Leu	Phe	Leu	Asn	Tyr	Gly	Ala	Arg	Glu	Tyr	Leu	His	Ala	Thr	Arg
		35					40					45			
Phe	Ile	Phe	Met	Pro	Arg	Leu	Ile	Arg	Ser	Gln	Val	Phe	Leu	Ser	Ala
	50					55					60				
Leu	Tyr	Asp	Glu	Lys	Thr	Phe	Pro	His	Ile	Glu	Lys	Thr	Gly	Glu	Lys

65
Pro

70

75

80

<210> 10269
 <211> 546
 <212> PRT
 <213> B.fragilis

<400> 10269

Arg	Asn	Met	Ile	Thr	Ala	Val	Ile	Ala	Glu	Lys	Pro	Ser	Val	Ala	Lys
1			5						10					15	
Asp	Ile	Ala	Asn	Val	Leu	Asn	Val	Arg	Glu	Arg	His	Asp	Gly	Tyr	Leu
			20					25					30		
Ser	Gly	Asn	Gly	Tyr	Leu	Val	Thr	Trp	Ala	Phe	Gly	His	Leu	Val	Gln
		35					40					45			
Leu	Ala	Met	Pro	Glu	Ala	Tyr	Gly	Tyr	Ala	Gly	Phe	Arg	Arg	Glu	Asn
		50				55					60				
Leu	Pro	Ile	Leu	Pro	Gln	Glu	Phe	Lys	Tyr	Ile	Pro	Arg	Gln	Ile	Arg
65					70					75				80	
Glu	Gly	Lys	Glu	Tyr	Lys	Pro	Asp	Pro	Gly	Val	Leu	Lys	Gln	Leu	Lys
			85						90				95		
Val	Ile	Arg	Glu	Val	Phe	Asp	Arg	Ser	Asp	Arg	Ile	Val	Val	Ala	Thr
			100					105					110		
Asp	Ala	Gly	Arg	Glu	Gly	Glu	Ala	Ile	His	Arg	Tyr	Ile	Tyr	Asn	Tyr
		115					120						125		
Leu	Gly	Cys	Arg	Lys	Pro	Cys	Leu	Arg	Leu	Trp	Ile	Ser	Ser	Leu	Thr
		130				135					140				
Asp	Arg	Ala	Ile	Arg	Glu	Gly	Leu	Asp	Asn	Leu	Lys	Ile	Gly	Ser	Asp
145					150					155					160
Tyr	Asp	Asn	Leu	Tyr	Arg	Ala	Ala	Glu	Ala	Arg	Ala	Ile	Ala	Asp	Trp
			165						170					175	
Glu	Ile	Gly	Leu	Asn	Ala	Thr	Gln	Ala	Leu	Ser	Ile	Ala	Ala	Gly	Gln
			180					185					190		
Gly	Ile	Tyr	Ser	Leu	Gly	Arg	Val	Gln	Thr	Pro	Thr	Leu	Met	Met	Ile
		195					200						205		
Cys	Ser	Arg	Tyr	Leu	Glu	Asn	Arg	Asp	Phe	Thr	Pro	Gln	Thr	Tyr	Tyr
		210				215					220				
Arg	Leu	Lys	Val	Thr	Ala	Glu	Lys	Asp	Gly	Thr	Pro	Phe	Ala	Ala	Ile
225					230					235					240
Ser	Glu	Leu	Arg	Tyr	Glu	Thr	Leu	Pro	Ala	Ala	Asn	Ala	Ala	Leu	Gly
			245						250					255	
Ala	Val	Thr	Ala	Thr	Gly	Thr	Val	Glu	Val	Ala	Asp	Leu	Gln	Arg	Arg
			260					265					270		
Glu	Val	Ser	Gln	Glu	Pro	Pro	Leu	Leu	Tyr	Asp	Leu	Thr	Ala	Leu	Gln
			275				280					285			
Lys	Glu	Ala	Asn	Gly	Arg	Tyr	Gly	Phe	Ser	Ala	Asp	Lys	Thr	Leu	Ser
		290				295					300				
Ile	Ala	Gln	Ser	Leu	Tyr	Glu	Lys	Lys	Val	Leu	Ser	Tyr	Pro	Arg	Thr
305					310					315					320
Gly	Ser	Arg	Tyr	Leu	Ser	Asp	Asp	Val	Phe	Asp	Glu	Ile	Pro	Asp	Arg
			325						330					335	
Ile	Ala	Leu	Leu	Glu	Arg	Tyr	Pro	Ala	Phe	Ala	Ala	His	Ala	Ala	Ala
			340					345					350		
Leu	Lys	Gly	Ala	Ser	Leu	Asn	Arg	Arg	Ser	Val	Asp	Ala	Gly	Lys	Val
			355				360					365			
Thr	Asp	His	His	Ala	Leu	Ile	Ile	Thr	Glu	Cys	Leu	Pro	Gly	Glu	Leu
		370				375					380				
Ser	Ala	Asp	Glu	Arg	Thr	Val	Tyr	Asp	Met	Val	Ala	Ala	Arg	Leu	Leu

385		390		395		400									
Glu	Ala	Phe	Ser	Ala	Arg	Cys	Leu	Lys	Asp	Ala	Thr	Thr	Val	Ser	Phe
		405							410					415	
Thr	Ala	Gly	Asn	Ser	Val	Phe	Thr	Ala	Lys	Gly	Thr	Val	Val	Arg	Ser
		420						425					430		
Ala	Gly	Trp	Arg	Ala	Val	Arg	Asn	Glu	Arg	Glu	Glu	Asp	Asp	Glu	Gly
	435					440						445			
Thr	Ala	Ala	Leu	Pro	Thr	Met	Gln	Thr	Asp	Glu	Ala	Phe	Pro	Leu	Gln
	450					455					460				
Ser	Ala	Glu	Cys	Val	Glu	Lys	Gln	Thr	Lys	Pro	Arg	Pro	Leu	His	Thr
465					470				475					480	
Glu	Ser	Ser	Leu	Leu	Ser	Ala	Met	Glu	His	Cys	Gly	Arg	Glu	Leu	Gln
			485					490					495		
Asp	Asp	Glu	Leu	Arg	Asp	Ser	Leu	Lys	Gly	Asn	Gly	Ile	Gly	Thr	Pro
		500						505				510			
Ala	Thr	Arg	Ala	Tyr	Ile	Ile	Glu	Thr	Leu	Tyr	Ala	Arg	Asp	Tyr	Val
	515						520				525				
Arg	Pro	Glu	Lys	Lys	Glu	Leu	Val	Pro	Thr	Asp	Lys	Glu	Leu	Ala	Cys
	530					535					540				
Ile	Lys														
545															

<210> 10270

<211> 517

<212> PRT

<213> B.fragilis

<400> 10270

Phe	Phe	Gln	Ile	Met	Asp	Glu	Gln	Pro	Asp	Ser	Ser	Gln	Gln	Leu	Met
1				5					10					15	
Asp	Ile	Leu	Leu	Val	Met	Asp	Glu	Lys	Gly	Thr	Leu	Gln	Ala	Val	Ser
		20						25					30		
Gly	Val	Lys	Asp	Gly	Glu	Leu	Gln	Thr	Lys	Asn	Pro	Leu	Glu	Asp	Asn
	35						40					45			
Asn	Asp	Leu	Leu	Arg	Val	Asp	Arg	His	Gly	Asp	Met	Phe	Ser	Asn	Phe
	50					55					60				
Phe	Ser	Asn	Leu	Trp	Ser	Gln	Leu	Lys	Asp	Pro	Thr	Arg	Phe	His	Phe
65				70					75					80	
Phe	Arg	Val	Pro	Glu	Glu	Gln	Val	Gln	Arg	Val	Pro	Ala	Asp	Phe	Arg
			85					90					95		
Gln	Arg	Glu	Ser	Arg	Ser	Val	Lys	Thr	Gly	Glu	Pro	Leu	Leu	Ala	Gln
		100					105						110		
Tyr	Glu	Val	Gln	Pro	Pro	Val	Gln	Ala	Gln	Gln	Gln	Thr	Gln	Ala	Gly
	115						120					125			
Gln	Gln	Gln	Gln	Pro	Glu	Asp	Ala	Pro	Gln	Gln	Ser	Ala	Gly	Gln	Thr
	130					135					140				
Glu	Gln	Asn	Pro	Gln	Tyr	Lys	Tyr	Arg	Pro	Glu	Asp	Ile	Asp	Trp	Asn
145				150					155					160	
Ser	Leu	Ala	Ala	Leu	Gly	Val	Gln	Arg	Glu	Gln	Ile	Glu	Gly	Asn	Gly
			165						170					175	
Met	Leu	Asp	Gln	Met	Leu	Arg	Gly	Phe	Gln	Thr	Asp	Lys	Thr	Val	Arg
		180					185						190		
Val	His	Phe	His	Phe	Glu	Gly	Ile	Ser	His	Ser	Asn	Asp	Ser	Gln	Leu
	195					200					205				
Ser	Leu	Lys	Pro	Gly	Thr	Asp	Gly	Arg	Leu	Thr	Val	Cys	Ser	Leu	Gly
	210				215						220				
Ile	Leu	Asp	Pro	Glu	Lys	Met	Gln	Lys	Gln	Phe	Phe	Gly	Tyr	Asp	Ile
225				230					235					240	
Thr	Asp	Ser	Asp	Lys	Gln	Val	Leu	Arg	Gln	Thr	Gly	Tyr	Met	Gly	His

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<210> 10271
<211> 165
<212> PRT
<213> B.fragilis
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<400> 10271
Lys His Ile Val Met Lys Gln Ile Thr Leu His Val Tyr Gln Ser Ile
1          5          10          15
Asp Gly Cys Pro Val Ile Ala Asp Lys Cys Phe Asn Ala Val Val Asp
          20          25          30
Ala Cys Ala Tyr Val Leu Ile Asp Glu Glu Thr Tyr Leu Arg Ile Tyr
          35          40          45
Leu Asn Asp Leu Asp Trp Pro Leu Glu Ala Lys Glu Thr Leu Val Val
          50          55          60
Thr Asn Gly Cys Ile Asp Leu Thr Glu Thr Glu Arg Val Arg Phe Val
65          70          75          80
Arg Gly Asn Val Val Thr Glu Leu Gln Arg Ile Lys Glu Asn Gly Asp
          85          90          95
Gly Met Val Val Ala Tyr Gly Gly Glu Thr Gly Val Leu Leu Asp
          100          105          110
Asn Gly Leu Ala Asp Glu Ile Val Met Thr Thr Val Pro Val Leu Val
          115          120          125
Gly Asn Ser Glu Lys Gly Leu Glu Cys Gly Pro Asn Asp Gly Arg Ile

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6093

130		135		140											
Trp	Ala	Val	Arg	Ser	Ser	Glu	Val	Leu	Glu	Asp	Gly	Lys	Ile	Arg	Thr
145					150					155					160
Val	Tyr	Gly	Arg	Met											
				165											

<210> 10272
 <211> 69
 <212> PRT
 <213> B.fragilis

<400> 10272

His	Met	Ser	Val	Val	Glu	Ser	Ile	Asn	Phe	Gln	Phe	Ala	Gln	Asn	Met
1			5						10					15	
Thr	Phe	Gln	Asn	Pro	Val	Val	Glu	Asp	His	Ile	Asn	Glu	Ile	Lys	Phe
		20					25					30			
Val	Thr	Asp	Lys	Asp	Ser	Phe	Leu	Ser	Gly	Phe	Glu	Thr	Glu	Ala	Val
		35					40				45				
Ser	Glu	Phe	Asp	Asn	Glu	Val	Ser	Gln	Met	Val	Glu	Gln	Lys	Cys	Phe
	50					55					60				
Glu	Phe	Leu	Leu	Leu											
65															

<210> 10273
 <211> 163
 <212> PRT
 <213> B.fragilis

<400> 10273

Val	Met	Asn	Thr	Leu	Thr	Ser	Gln	Ile	Glu	Gln	Leu	Gln	Ser	Leu	Ala
1			5						10					15	
His	Glu	Leu	Leu	Tyr	Leu	Gly	Val	Asp	Gly	Ala	Pro	Ile	Tyr	Thr	Asp
		20					25					30			
His	Phe	Arg	Gln	Leu	Asn	Lys	Glu	Val	Leu	Glu	Gln	Ser	Asp	Ala	Leu
		35					40					45			
Tyr	Pro	Gln	Arg	Gly	Ala	Thr	Ser	Glu	Glu	Glu	Ala	Asn	Ile	Cys	Leu
	50					55					60				
Ala	Leu	Leu	Met	Gly	Tyr	Asn	Ala	Thr	Ile	Tyr	Asn	Gln	Gly	Asp	Lys
65				70					75					80	
Glu	Glu	Lys	Lys	Gln	Val	Val	Leu	Asn	Arg	Trp	Trp	Asp	Val	Leu	Asp
			85					90					95		
Gln	Thr	Ser	Gly	Thr	Leu	Leu	Lys	Cys	Gln	Leu	Val	Thr	Tyr	Cys	Tyr
		100					105					110			
Gly	Gly	Gly	Val	Glu	Glu	Glu	Leu	Gly	Lys	Glu	Gly	Pro	Ser	Phe	Ile
	115					120						125			
Lys	Lys	Val	Glu	Arg	Ile	Arg	Asn	Phe	Leu	Lys	Ile	Lys	Lys	Arg	Gln
	130					135					140				
Leu	Ile	Ile	Leu	Arg	Lys	Leu	Gly	Lys	Lys	Ile	Leu	Phe	Ser	Met	Gly
145					150					155					160
Lys	Gly	Lys													

<210> 10274
 <211> 174
 <212> PRT
 <213> B.fragilis

<400> 10274

Met	Ser	Glu	Gln	Gln	Lys	Tyr	Trp	Phe	Ala	Ala	Arg	Thr	Arg	Asp	Lys
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

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1           5           10           15
Gln Glu Phe Ala Ile Arg Asp Ser Leu Glu Lys Leu Lys Thr Glu Leu
                20                25                30
Asp Leu Asn Tyr Tyr Leu Pro Thr Gln Phe Val Ile Arg Gln Leu Lys
                35                40                45
Tyr Arg Arg Lys Arg Val Glu Val Pro Val Ile Lys Asn Leu Ile Phe
                50                55                60
Ile Gln Ala Thr Lys Gln Asp Ala Cys Asp Ile Ser Asn Lys Tyr Asn
65                70                75                80
Ile Gln Leu Phe Phe Pro Lys Asp Leu Leu Thr Arg Ala Met Leu Ile
                85                90                95
Val Pro Asp Lys Gln Met Gln Asp Phe Ile Phe Val Met Asp Leu Asp
                100               105               110
Pro Asn Gly Val Ser Phe Asp Asn Asp His Leu Ser Val Gly Ser Arg
                115               120               125
Val Gln Val Val Lys Gly Asp Phe Cys Gly Val Glu Gly Glu Leu Ala
                130               135               140
Ser Glu Ala Asn Lys Thr Tyr Val Val Ile Arg Ile Ala Gly Val Leu
145                150                155                160
Ser Ala Ser Val Lys Val Pro Lys Ser Tyr Leu Arg Val Ile
                165                170

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<210> 10275
<211> 122
<212> PRT
<213> B.fragilis

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<400> 10275
His Tyr Gly Arg Lys Lys Val Val Ile Ser Leu Asn Asp Asn Leu Val
1           5           10           15
Thr Ile Glu Val Asn Gly Lys Val Ile Phe Ala Gly Lys Ala Asp Leu
                20                25                30
Gln Phe Ser Leu Asn Gln Lys Val Arg Glu Pro Leu Arg Ile Thr Lys
                35                40                45
Gly Lys Gly Lys Leu Met Glu Ala Leu Thr Glu Ser Phe Ile Lys Gly
                50                55                60
Gly Ile Asn Ser Met Glu Asn Arg Pro Ile Glu Glu Leu Gln Glu Thr
65                70                75                80
Ile Lys Glu Tyr Leu Thr Phe Glu Tyr Gln Arg Lys Gly Ile Ala Thr
                85                90                95
Glu Pro Asn Lys Arg Ser Phe Leu Ser Glu Leu Lys Lys Tyr Ala Arg
                100               105               110
Ala Phe Arg Lys Lys Arg Asp Glu Ser Glu
                115               120

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<210> 10276
<211> 308
<212> PRT
<213> B.fragilis

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<400> 10276
Thr Ser Leu Leu Leu Thr Gln Lys Ala Ile Leu Met Lys Lys Thr Ile
1           5           10           15
Phe Leu Ile Leu Cys Ile Leu Cys Ser Leu Gly Ala Met Ala Gln Lys
                20                25                30
Lys Ser Ile Thr Gly Val Val Thr Asp Ala Ser Gly Glu Ser Val Ile
                35                40                45
Gly Ala Ser Val Val Glu Val Gly Thr Thr Asn Gly Val Ile Thr Asp
50                55                60

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Ile Ser Gly Lys Phe Thr Leu Met Val Asp Pro Asn Gly Lys Ile Lys
 65 70 75 80
 Val Ser Tyr Val Gly Tyr Gln Pro Gln Val Leu Asp Val Lys Gly Lys
 85 90 95
 Asn Ser Phe Asn Ile Lys Leu Lys Glu Asp Ser Glu Met Leu Asp Glu
 100 105 110
 Val Val Val Thr Gly Tyr Gly Gly Lys Gln Leu Arg Thr Lys Val Thr
 115 120 125
 Asn Ser Ile Gly Lys Val Lys Glu Asp Val Leu Gln Lys Gly Leu Phe
 130 135 140
 Ser Asn Pro Ala Gln Ala Leu Ser Gly Ala Val Ser Gly Val Arg Val
 145 150 155 160
 Leu Gln Thr Ser Gly Asp Pro Gly Ala Thr Pro Thr Ile Ile Leu Arg
 165 170 175
 Gly Gly Thr Asp Tyr Asn Gly Thr Gly Ser Pro Leu Val Leu Val Asp
 180 185 190
 Gly Gln Val Arg Gly Ser Leu Ser Asp Ile Asn Pro Glu Asp Ile Glu
 195 200 205
 Ser Met Glu Val Leu Lys Asp Ala Gly Ala Thr Ala Ile Tyr Gly Ala
 210 215 220
 Arg Ala Asn Asn Gly Val Ile Leu Val Thr Thr Lys Arg Gly Lys Glu
 225 230 235 240
 Gly Lys Gly Glu Val Ser Val Lys Ala Lys Val Gly Ile Asn Tyr Tyr
 245 250 255
 Asn Asn Pro Tyr Glu Phe Met Asn Ala Arg Asp Tyr Ile Tyr Trp Met
 260 265 270
 Arg Thr Ala Tyr Gln Arg Ser Gly Gln Ile Tyr Lys Asp Ser Lys Gly
 275 280 285
 Asn Trp Val Gly Thr Ala Asp Met Asn Ser Leu Asn Asn Ala Thr Ser
 290 295 300
 Leu Trp Tyr Gly
 305

<210> 10277

<211> 268

<212> PRT

<213> B.fragilis

<400> 10277

Asn Ser Asn Lys Leu Val His Pro Asp Val His Phe Val Phe Pro Val
 1 5 10 15
 Val Lys Asn Gly Arg Ser Asp Asp Tyr Ile Val Glu Trp Arg Lys Leu
 20 25 30
 Val Leu Asn Asn Pro Tyr Phe Thr Ile Asn His Trp Leu Asn Glu Ile
 35 40 45
 Asn Ala Glu Asn Ala Gln Ala Val Ile Tyr Thr Lys Glu Ser Asp Glu
 50 55 60
 Ile Met Lys Lys Leu Ser Leu Lys Ser Ser Glu Gly Gly Phe Lys Ile
 65 70 75 80
 Thr Leu Leu Trp Leu Pro Glu Lys Met Gln Gln Ala Cys Ala Asn Lys
 85 90 95
 Leu Leu Lys Leu Leu Glu Glu Pro Pro Glu Lys Thr Ile Phe Leu Leu
 100 105 110
 Val Ser Glu Ala Pro Asp Leu Ile Leu Gln Thr Ile Leu Ser Arg Thr
 115 120 125
 Gln Arg Phe Asn Leu Arg Lys Ile Glu Glu Glu Cys Met Ala Glu Ala
 130 135 140
 Leu Gln Ser Lys Tyr Gly Val Gln Gln Ala Thr Ser Ile Ser Ile Ala
 145 150 155 160

His Leu Ala Asn Gly Asn Phe Ile Lys Ala Leu Glu Thr Ile His Leu
 165 170 175
 Asn Glu Glu Asn Gln Leu Phe Phe Glu Leu Phe Val Ser Leu Met Arg
 180 185 190
 Leu Ser Tyr Gln Arg Lys Ile Arg Glu Met Lys Leu Trp Ser Glu Gln
 195 200 205
 Val Ala Gly Met Gly Arg Glu Arg Gln Lys Asn Phe Leu Glu Tyr Cys
 210 215 220
 His Lys Glu Arg Phe Lys Ser Leu Pro Gly Arg Pro Val Asn Asp Phe
 225 230 235 240
 Arg Asn Tyr Met Thr Leu Glu Glu Gln Asn Phe Ala Thr Arg Phe Ala
 245 250 255
 Val Phe Thr Thr Gly Leu Gly Gly Ser Thr Leu Val
 260 265

<210> 10278
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 10278
 Leu Lys Ile Ala Ile Lys Ser Ile Lys Val Cys Ser Phe Val Tyr Ser
 1 5 10 15
 Phe Arg Arg Lys Leu Asn Arg Arg Lys Ile Arg Gln Phe Ser Leu Ala
 20 25 30
 Ala Gln Tyr Leu Lys Ile Gly Asn Met Pro Ile Met Leu Tyr Tyr Pro
 35 40 45
 Phe Gln Lys Gly Leu Ile Ile His Ala Arg Asn Gly Asn Ser Tyr His
 50 55 60
 Gly Thr Lys Ser Val Ala Tyr Phe Ile
 65 70

<210> 10279
 <211> 559
 <212> PRT
 <213> B.fragilis

<400> 10279
 Ile Met Lys Ala Lys Lys Tyr Asn Trp Thr Leu Arg His Ser Phe Leu
 1 5 10 15
 Leu Phe Leu Val Ile Phe Ile Ser Ser Ser Cys Val Glu Asp Val Thr
 20 25 30
 Glu Ser Thr Lys Glu Pro Thr Arg Tyr Thr Ala Asn Asp Ile Lys Ser
 35 40 45
 Tyr Ser Asp Leu Phe Asp Val Phe Trp Asn Thr Met Asn Gln Lys Tyr
 50 55 60
 Asn Tyr Phe Tyr Glu Gln Ser Ser Phe Asn Trp Glu Thr Val Tyr Asn
 65 70 75 80
 Glu Tyr Ala Pro Lys Phe Lys Lys Leu Lys Thr Phe Asn Arg Asp Lys
 85 90 95
 Gln Tyr Ser Lys Ala Glu Ile Ser Glu Asp Cys Asn Lys Ala Ile Glu
 100 105 110
 Tyr Phe Thr Glu Ile Ile Asp Pro Ile Ile Asp Arg His Phe Tyr Val
 115 120 125
 Lys Ile Ser Leu Pro Val Ser His Ser Phe Ile Arg Asn Val Tyr Phe
 130 135 140
 His Gly Gly Met Lys Ser Lys Glu Lys Ile Tyr Thr Tyr Pro Phe Glu
 145 150 155 160
 Leu Lys Tyr Glu Tyr Met Arg Ser Lys Ile Gln Ser Glu Thr Gly Val


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<400> 10280
Cys Phe Asn Phe Met Lys Lys Gly Ile Leu Phe Ile Ala Leu Phe Ala
1          5          10          15
Ala Ser Phe Gly Phe Met Gln Ser Ser Phe Ala Ala Pro Ser Met Ser
```

	20		25		30
Ala Asn Ser	Ile Thr Asn Val	Leu Ala Ile Ser Asp	Tyr Glu Gly Thr		
35		40	45		
Tyr Ser Gly	Thr Met Asp Asn Ile Ile Met Arg	Gly Lys Pro Tyr Glu			
50		55	60		
Ser Arg Ala	Ala Thr Tyr Lys Ile Glu Gly Gly Arg	Leu Lys Cys Asp			
65		70	75		80
Phe Pro Gln	Ile Gly Ser Met Pro Gly Thr Ile Thr Ile Ser Leu Ala				
	85		90		95
Val Glu Val	Asp Glu Glu Thr Gly Glu Ile Thr Ala Tyr Asn Gly Asp				
	100		105		110
Glu Ala Gly	Thr Leu Ser Leu Pro Leu Gly Ile Lys Val Lys Leu Tyr				
	115		120		125
Leu Asp Asp	Leu Arg Asp Ala Lys Ile Thr Asp Asn Gly Ser Ser Lys				
	130		135		140
Gln Ile Glu	Phe Thr Leu Asp Val Ser Gly Thr Phe Leu Gly Ala Asn				
145		150		155	160
Phe Pro Ala	Ser Val His Phe Val Gly Thr Lys				
	165		170		

<210> 10281

<211> 84

<212> PRT

<213> B.fragilis

<400> 10281

Thr Leu Lys	Lys Arg Pro Met Arg Lys Leu Lys Lys	Pro Tyr Ser Gln			
1		5		10	15
Asn Trp Arg	Gly Leu Ser Ala Lys Trp Leu Phe Ile Leu Ser Thr Val				
	20		25		30
Leu Gly Ile	Ile Ala Gly Thr Cys Phe Trp Ile Phe Ile Ser Arg Cys				
	35		40		45
Gly Asn Glu	Glu Cys Phe Leu Asn Tyr Asp Pro Leu Pro Glu Met Phe				
	50		55		60
Ile Gly Gly	Val Ile Gly Ala Phe Leu Tyr Val Ile Ile Trp Gly Met				
65		70		75	80
Thr Ser Asp	Met				

<210> 10282

<211> 498

<212> PRT

<213> B.fragilis

<400> 10282

Arg Arg Met	Lys Arg Val Thr Thr Ile Leu Phe Leu Met Leu Leu Ile				
1		5		10	15
Cys Val His	Thr Ala Ala Gln Gln Lys Val Lys Leu Glu Val Leu Glu				
	20		25		30
Lys Gly Thr	Glu Gln Pro Ile Ile Ala Ala Asn Val Ile Tyr Ala Asp				
	35		40		45
Asn Glu Ala	Leu Arg Asn Pro Gln Tyr Ala Ile Thr Asn Thr Ser Gly				
	50		55		60
Gln Ala Glu	Leu Lys Leu Pro Ser Lys Gly Ile Cys Tyr Tyr Lys Val				
65		70		75	80
Thr Tyr Ile	Gly Tyr Val Pro Val Thr Gly Lys Ile Gly Gly Thr Gln				
	85		90		95
Asp Glu Lys	Val Ile Tyr Met Lys Glu Asp Asp Leu Gly Ile Asn Glu				
	100		105		110

Val Val Val Thr Gly Ser Arg Thr Ala Arg Pro Ile Lys Met Ser Pro
 115 120 125
 Val Thr Thr Gln Val Leu Gly Gly Lys Ala Leu Val Asp Ala Gly Tyr
 130 135 140
 Ser Asn Leu Gln Gln Ala Leu Gln Gln Glu Thr Pro Gly Leu Asn Ile
 145 150 155 160
 Gln Lys Val Gly Phe Gly Asn Glu Ile Ser Met Gln Gly Leu Asp Ala
 165 170 175
 Arg His Val Leu Phe Leu Met Asp Gly Glu Arg Met Thr Gly Asp Met
 180 185 190
 Ala Gly Asn Leu Asp Tyr Glu Arg Phe Asn Leu His Ala Ile Asp Arg
 195 200 205
 Val Glu Ile Val Lys Gly Ala Ser Ser Thr Leu Tyr Gly Ser Arg Ala
 210 215 220
 Ala Gly Ala Val Ile Asn Leu Ile Thr Lys Lys Thr Asp Lys Pro Leu
 225 230 235 240
 Ser Ile Asp Ala Gly Ile Arg Tyr Gly Gln Met Asn Glu Arg Asn Tyr
 245 250 255
 Lys His Pro Gln Pro Lys Asp Phe Leu Tyr Met Phe Glu Gln Asn Ala
 260 265 270
 Asp Arg Pro Asn Leu Gln Ser Trp Val Ser Ala Gly Phe Lys Ala Gly
 275 280 285
 Lys Phe Thr Ser Gln Thr Asp Val Trp Tyr Ser Glu Ser Asp Ala Phe
 290 295 300
 Tyr Met Tyr Gln Ala Glu Asn Asp Lys Lys Val Tyr Thr Lys Glu Ala
 305 310 315 320
 Asn Pro Phe Leu Pro His Asp Ile Thr Val Val Ser Asn Ala Val Arg
 325 330 335
 Pro Pro Met Gly Ile Glu Gly Lys Glu His Ile Thr Val Ser Gln Lys
 340 345 350
 Leu Tyr Tyr Asn Pro Asn Pro Asn Leu Ser Val Leu Val Tyr Gly Ser
 355 360 365
 Ser Phe Phe Met Asn Thr Tyr Asp Leu Ile Gln Asp Met Met Phe Ser
 370 375 380
 Gln Ala Arg Asp Leu Thr Ala Gly Thr Lys Val Thr Tyr His Val Lys
 385 390 395 400
 Asp Trp Phe Ser Val Thr Gly Ser Leu His Ala Asp Phe Tyr Asp Arg
 405 410 415
 Phe Lys Arg His Glu Arg Ile Asp Lys Arg Gln Lys Asp Tyr Glu Ser
 420 425 430
 Ser Ile Tyr Gln Pro Arg Leu Thr Val Thr Ser Asn Tyr Phe Asn Gly
 435 440 445
 His Ser Leu Ile Leu Gly Met Glu His Thr Ser Asp Glu Leu Thr Ser
 450 455 460
 Asp Arg Phe Ser Gly Asn Ala Asn His Asp Leu Lys Thr Arg Ala Leu
 465 470 475 480
 Lys Glu Thr Glu Tyr Phe Leu Ser Ser Leu Met Ala Glu Arg Pro Ser
 485 490 495
 Phe Pro

<210> 10283

<211> 60

<212> PRT

<213> B.fragilis

<400> 10283

Arg Pro Phe Asp Lys Leu Glu Arg Leu Ser Ser Ser Pro Val Val Lys
 1 5 10 15

6100

Thr Val Asp Gln Glu Asn Ile Asp Ser Ile Leu Phe Cys Ile Glu Glu
 20 25 30
 Asn Asn Ser Thr Leu Lys Ala Leu Arg Glu Glu Thr Asn Ala Gln Lys
 35 40 45
 Leu Gly Asn Lys Thr Gly Ile Tyr Ser Val Arg Pro
 50 55 60

<210> 10284
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 10284
 Phe Ile Tyr Cys Asn Pro Ile Gly Glu Val Trp Gly Thr Cys Phe Asn
 1 5 10 15
 Pro Ala Ala Leu Leu Leu Leu Thr Ser Phe Ser Ser Ile Val Val Cys
 20 25 30
 Ser Met Phe Tyr Phe Phe Leu Gln Val Ser Val Glu Glu Thr Asn Lys
 35 40 45
 Arg Lys Ser Phe Ile Asn Tyr Ile Lys Arg Lys Leu Lys Cys Ile Ile
 50 55 60
 Lys
 65

<210> 10285
 <211> 931
 <212> PRT
 <213> B.fragilis

<400> 10285
 Phe Cys Val Cys Leu Val Phe Phe Gly Met Asn Ile Arg Met Asn Ile
 1 5 10 15
 Leu Leu Cys Phe Leu Trp Leu Phe Ser Ala Thr Leu Ser Ala Gln Gln
 20 25 30
 Val Lys Ile Val Lys Gly His Val Cys Val Leu Ser Glu Asp Ser Ile
 35 40 45
 Glu Arg Ser Leu Pro Tyr Ala Ser Val Val Val Leu Glu Gly Lys Asp
 50 55 60
 Ser Ala Phe Val Lys Gly Met Ala Ser Asp Ala Asn Gly Ser Phe Lys
 65 70 75 80
 Leu Glu Phe Ile Pro Gln Lys Arg Met Glu Tyr Leu Leu Arg Ile Ser
 85 90 95
 Tyr Ile Gly Met Ser Thr Ile Phe Arg Lys Leu Asp Pro His Met Met
 100 105 110
 Asp Ile Asp Cys Gly His Ile Leu Met Glu Ser Gly Ile Lys Leu Ala
 115 120 125
 Glu Val Leu Val Thr Ala Pro Val Lys Glu Ile Asp Met Ala Gly Asp
 130 135 140
 Thr Thr Val Ile Asn Ala Asp Ala Tyr Arg Thr Pro Glu Gly Ser Asn
 145 150 155 160
 Leu Glu Glu Leu Val Arg Lys Ile Pro Gly Leu Glu Tyr Asp Asp Arg
 165 170 175
 Ser Lys Ser Leu Ser Tyr Asn Gly Leu Val Ile Ser Glu Ile Asn Val
 180 185 190
 Asn Gly Glu Ala Phe Phe Ser Gly Asn His Val Leu Ala Leu Glu Asn
 195 200 205
 Leu Pro Ala Asp Leu Ile Ser Arg Ile Lys Val Tyr Asp Lys Arg Ser
 210 215 220
 Glu Met Glu Lys Phe Thr Gly Val Arg Thr Val Asp Glu Asn Tyr Val

6100
 B.fragilis
 10284
 10285
 931
 PRT
 B.fragilis

225		230		235		240
Leu Asp Leu Gln Thr	Lys Lys Glu Leu Asn Gly Thr	Leu Ile Thr Ser				
	245		250		255	
Val Ala Val Gly Lys Gly Asn Lys Lys Lys Glu Ala Glu Leu Ile						
	260		265		270	
Ser Asn Phe Phe Lys Ala Asp Gly Glu Asn Leu Ser Val Ile Ala Lys						
	275		280		285	
Ser Gly Asn Arg Asp Ile Thr Thr Glu Asn Lys Lys Asn Arg Gln Asp						
	290		295		300	
Asn Ile Ala Val Asn Phe Leu Lys Lys Phe Gly Glu Thr Val His Ile						
305		310		315		320
Asn Gly Asn Ile Met Tyr Asn Asn Ala Ile Asn Gly Ile Asn Gly Thr						
	325		330		335	
Ser Tyr Tyr Glu Gln Tyr Leu Met Thr Gly Asn Arg Tyr Arg Tyr Ala						
	340		345		350	
Thr Asp Asn Gly Tyr His Thr Asn Arg Met Ile Ser Ala Met Leu Ser						
	355		360		365	
Ala Arg Trp Asn Ile Asp Lys Lys Thr Leu Leu Asn Ile Ser Gly Ser						
	370		375		380	
Phe Asn Ala Leu Lys Gly Ile Asn Asp Asp Ser Asn Arg Gln Ala Thr						
385		390		395		400
Tyr Asn Ala Asp Pro Lys Leu Asp Val Thr Ser Pro Phe Asn Arg Asp						
	405		410		415	
Ala Ser Glu Gln Ile Glu Asp Ser Ile Arg Val Asn Asp Ile Cys Met						
	420		425		430	
Thr Ser Arg Ser Ser Ser Ile Asn Arg Leu Tyr Ser Ile Gly Ala Asp						
	435		440		445	
Ile Thr Arg Arg Leu Asn Ala Lys Gly Thr Ser Leu Gly Leu Thr Val						
	450		455		460	
Gln Tyr Ser Glu Glu Arg Gly Asn Asn Lys Ala Phe Ser Leu Ser Ser						
465		470		475		480
Thr Thr Tyr Tyr Gln Leu Gln Asn Val Lys Gly Asn Asp Ser Ile Leu						
	485		490		495	
Tyr Arg Asn Gln Tyr Gln Glu Ser Pro Asn Arg Asn Arg Thr Ile Lys						
	500		505		510	
Leu Gly Leu Ile Leu Thr Gln Ile Leu Arg Lys Asn Leu Arg Ala Gln						
	515		520		525	
Leu Ser Tyr Ile Phe Lys Leu Asp Asn Gln Ser Arg Asp Arg Asn Thr						
	530		535		540	
Tyr Val Leu Ser Pro Val Val Asp Gly Glu Glu His Thr Pro Thr Gly						
545		550		555		560
Asn Phe Pro Lys Gly Tyr Glu Val Glu Tyr Thr Asp Ser Leu Ser Asn						
	565		570		575	
Lys Ser Arg Ser His Thr Met Ala His Gly Val Ser Leu Asn Leu Asn						
	580		585		590	
Tyr Thr Asp Lys Thr Trp Glu Ile Thr Thr Gly Leu Ser Val Thr Pro						
	595		600		605	
Lys Arg Gln Thr Leu Gly Gln Lys Thr Gly Trp Thr Gln Ala Asp Thr						
	610		615		620	
Leu Arg Tyr Ser Val Asn Tyr His Pro Thr Leu Thr Ile Leu Trp Arg						
625		630		635		640
Lys Arg Lys Thr Trp Val Gln Leu Ser Tyr Glu Gly Asn Thr Gln Gln						
	645		650		655	
Pro Gly Leu Ala Glu Leu Leu Thr Leu Thr Asp Asn Ser Asp Pro Leu						
	660		665		670	
Asn Ile Ile Arg Gly Asn Pro Asp Leu Lys Ser Ser Tyr Thr Gln Lys						
	675		680		685	
Val Arg Leu Glu Val Arg Asp Thr Lys Thr Gly Leu Ser Gly Asp Val						
	690		695		700	

Asn Trp Thr Ser Met Leu Asn Asn Val Thr Arg Ala Val Ile Tyr Asp
 705 710 715 720
 Ser Gln Thr Gly Gly Ile Glu Ser Arg Pro Val Asn Val Asn Gly Asn
 725 730 735
 Trp Asn Ile Lys Ala Ala Met Arg Tyr Gln Lys Arg Ile Asn His Tyr
 740 745 750
 Phe Asn Leu Ser Ala Arg Thr Gly Thr Ser Phe Ile Gln Ser Val Ser
 755 760 765
 Leu Val Asn Asp Gly Gln Arg Glu Gln Pro Glu Arg Ser Val Thr His
 770 775 780
 Asn Arg Leu Tyr Asn Ala Gly Leu Arg Val Gly Tyr Gln Pro Lys Trp
 785 790 795 800
 Gly Gly Phe Asp Leu Ser Gly Asp Trp Arg Phe Arg His Ser Thr Asn
 805 810 815
 Leu Leu Arg Glu Thr Asn Asn Tyr Ile Arg Asp Tyr Ser Phe Gly Leu
 820 825 830
 Thr Ala Tyr Ala Val Phe Pro Gly Asn Ile Arg Leu Lys Ser Glu Thr
 835 840 845
 Thr His Thr Phe Arg Asn Gly Thr Asn Ile Asn Arg Ser Glu Asp Asn
 850 855 860
 Glu Val Val Trp Asn Leu His Leu Ser Trp Ser Phe Leu Lys Tyr Lys
 865 870 875 880
 Lys Ala Glu Phe Ser Val Tyr Trp Ala Asp Ile Leu Ser Gln Lys Lys
 885 890 895
 Ser Tyr Ser Arg Asn Val Thr Ser His Gly Leu Ser Glu Arg Tyr Thr
 900 905 910
 Gln Gln Ile Gly Ser Tyr Phe Ile Val Ser Phe Lys Tyr Arg Phe Asn
 915 920 925
 Arg Gln Leu
 930

<210> 10286

<211> 278

<212> PRT

<213> B.fragilis

<400> 10286

Ile Asn Leu Leu Leu Glu Ala Lys Gln Tyr Cys Ile Asp Leu Val Tyr
 1 5 10 15
 Tyr Asn Gly Leu Lys Lys Glu Leu Lys Val Arg Leu Arg His Ala Gln
 20 25 30
 Ala Ile Ala Asp Ala Tyr Arg Gln Arg Leu Asp Arg Gly Asp Ala Ser
 35 40 45
 Ile Leu Glu Tyr Asn Lys Val Gln Leu Asn Leu Ser Thr Val Gln Gly
 50 55 60
 Glu Met Ser Arg Ile Glu Val Glu Arg Asn Ala Leu Leu Ser Glu Leu
 65 70 75 80
 Lys Arg Leu Asn Gly Gly Met Asp Val Ile Phe Glu Ala Ser Asn Tyr
 85 90 95
 Ser Pro Ala Ser Leu Pro Val Asn Phe Glu Asp Trp Tyr Leu Ser Ala
 100 105 110
 Gln Gln Lys Asn Pro Leu Leu Gln Tyr Val Lys Gln Gln Ile Glu Val
 115 120 125
 Ser Lys Glu Gln Val Lys Leu Gly Lys Ala Met Thr Leu Pro Lys Phe
 130 135 140
 Ser Ala Gly Tyr Ser Leu Glu Arg Thr Leu Gly Gln Lys Tyr Gln Gly
 145 150 155 160
 Ile Ser Val Gly Ile Ser Ile Pro Leu Trp Glu Asn Lys Asn Arg Val
 165 170 175

Lys Gln Ala Lys Ala Gly Val Val Ala Ala Gln Ala Arg Glu Gln Asp
 180 185 190
 Ser Lys Gln Gln Phe Tyr Asp Arg Leu Arg Asn Leu Tyr Met Arg Ala
 195 200 205
 Ser Gly Leu Gln Gln Thr Ala Ile Ala Tyr Arg Glu Ser Leu Lys Ala
 210 215 220
 Leu Asn Asn Thr Ala Leu Leu Met Lys Ala Leu Asp Val Gly Glu Ile
 225 230 235 240
 Ser Leu Leu Asn Tyr Ile Val Glu Ile Gly Leu Tyr Tyr Asp Thr Val
 245 250 255
 Asn Gln Thr Leu Ala Ala Glu Arg Asp Phe Glu Lys Ala Leu Ala Asp
 260 265 270
 Leu Ser Ala Val Glu Leu
 275

<210> 10287

<211> 249

<212> PRT

<213> B.fragilis

<400> 10287

Gln Thr Ile Gly Ser Met Phe Asn Leu Asn Ile Asn Phe Met Lys Lys
 1 5 10 15
 Gln Leu Val Ile Phe Ile Leu Leu Gly Ile Ile Ala Ile Pro Ser Ser
 20 25 30
 Val Lys Ala Gln Lys Leu Lys Val Ser Leu Ser Ala Gly Leu Ser Lys
 35 40 45
 Ser Ile Leu Asn Ser Asp Val Ser Asn Leu Val Asn Thr Arg Tyr Asp
 50 55 60
 Thr Lys Thr Gly Val Ala Thr Arg Val Asn Leu Glu Tyr Asn Phe Phe
 65 70 75 80
 Lys Asp Phe Ile Val Gly Thr Gly Leu Gly Phe Ile Gln Lys Asn Tyr
 85 90 95
 Glu Tyr Lys Lys Thr Asp Asn Ile Thr Gly Thr His Thr Leu Tyr Lys
 100 105 110
 Asn Asn Phe Met Asp Ile Pro Leu Asn Val Gly Leu Tyr Leu Phe Asn
 115 120 125
 Asn Pro His Lys Glu Asn Gly Ile Trp Leu Lys Val Gln Gly Gly Val
 130 135 140
 Phe Tyr Glu Tyr Phe Thr Arg Met His Arg Lys Gly Glu Tyr Pro Ile
 145 150 155 160
 Phe Ala Gln Leu Gln Glu Asp Gly Ser Tyr Ile Lys Ala Gln Val Asn
 165 170 175
 Glu Thr Tyr Asp Phe Lys Arg Asn Glu Asn Asn Leu Lys Arg Asn Leu
 180 185 190
 Phe Gly Ile Glu Gly Thr Gly Glu Val Gly Tyr Ser Phe Asn Arg Ile
 195 200 205
 Asp Val Phe Ala Ser Tyr Thr Tyr Gln Tyr Gly Leu Thr Asp Ile Tyr
 210 215 220
 Lys Ala Lys Thr Ser Ser Asn Arg Lys Ser Lys Arg Ile Ser Asn Ile
 225 230 235 240
 Ile Ser Leu Gly Val Ala Tyr Lys Phe
 245

<210> 10288

<211> 228

<212> PRT

<213> B.fragilis

<400> 10288

Lys Lys Ile Ile Tyr Lys Leu Tyr Lys Lys Lys Thr Glu Met Tyr Asn
 1 5 10 15
 Lys Ile Arg Phe Asp Thr Phe Met Leu Met Cys Phe Phe Met Ile Thr
 20 25 30
 Ile Leu Gly Leu Ser Ala Cys Asp Ser Asp Glu Lys Ile Thr Gln Glu
 35 40 45
 Pro Pro Ser Gln Thr Tyr Val Lys Lys Ala Lys Glu Ile Leu Ala Gly
 50 55 60
 Asp Ile Val Leu Ser Thr Arg Ala Thr Met Asn Gly Val Asp Lys Thr
 65 70 75 80
 Leu Leu Lys Ser Gly Cys Pro Thr Lys Phe Asn Phe Ser Trp Arg Glu
 85 90 95
 Asp Gly Met Met Ile Leu Asn Leu Ser Asp Phe Ser Val Gly Ala Met
 100 105 110
 Pro Phe Ala Ile Ser Phe Lys Cys Ala Thr Lys Ile Met Gln Leu Asn
 115 120 125
 Ser Trp Glu Gln Asp Glu Tyr Pro Gly Asp Gly Trp Ile Lys Phe Val
 130 135 140
 Gly Thr Asp Gly Asn Val Thr Thr Ser Gly Asp Asp Ala Glu Asp Asn
 145 150 155 160
 Gln Glu Gly Ser Gly Ala Arg Val Asp Gly Tyr Leu Asn Val Asn Thr
 165 170 175
 Asn Gln Ile Glu Phe Ile Val Asp Tyr Asn Met Met Asn Val Arg Thr
 180 185 190
 Glu Thr Phe Leu Gln Thr Ile Asp Lys Thr Arg Ile Asp Arg Phe Lys
 195 200 205
 Glu Glu Phe Ala Gln Tyr Glu Lys Asp Leu Glu Glu Ala Lys Lys Asp
 210 215 220
 Gln Gly Lys Ala
 225

<210> 10289

<211> 475

<212> PRT

<213> B.fragilis

<400> 10289

Cys Asn Glu Met Asn Asn Leu Arg Asn Tyr Leu Gly Leu Ser Ala Leu
 1 5 10 15
 Thr Met Gly Leu Cys Leu Met Ser Cys Asn Asp Asp Asn Thr Pro Ser
 20 25 30
 Tyr Ser Gln Thr Thr Met Lys Asn Ser Glu Leu Lys Thr Ile Leu Gln
 35 40 45
 Gln Lys Gly Tyr Gln Phe Asn Glu Gln Gly Asn Leu Leu Leu Asp Asp
 50 55 60
 Leu Ala Asn Asn Thr Thr Leu Asp Leu Ser Gly Thr Lys Leu Ser
 65 70 75 80
 Asn Leu Ser Glu Leu Asp Ile Leu Pro Asn Leu Thr Glu Val Lys Leu
 85 90 95
 Ser Asp Asn Asp Tyr Gly Pro Val Phe Asp Phe Ser Lys Leu Pro Lys
 100 105 110
 Gln Ile Thr Gly Ile Asp Leu Thr Gly Asn Asp Ile Tyr Asp Tyr Asp
 115 120 125
 Asn Leu Val Asn Val Val Val Glu Glu Asn Gly Asn Glu Thr Val Thr
 130 135 140
 Asn Leu His Asp Ile Thr Lys Leu Tyr Leu Pro Arg Thr Ala Lys Asp
 145 150 155 160
 Asn Ile Lys Asp Leu Val Arg Phe Tyr Ile Lys Asn Lys Asp Ala Ile


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<210> 10290
<211> 77
<212> PRT
<213> B.fragilis
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<210> 10291
<211> 394

<212> PRT

<213> B.fragilis

<400> 10291

Leu Val Asn Met Lys His Glu Arg Pro Cys Leu Val Ala Ser Gly Ser
 1 5 10 15
 Asp Trp Leu Gln Glu Val Leu Arg Arg Leu Leu Val Trp Val Val Val
 20 25 30
 Leu Ser Ser Gly Thr Leu Met Ala Tyr Ala Gly Asn Leu Asp Ile Ser
 35 40 45
 Gln Thr Lys Val Ile Thr Gly Thr Val Thr Glu Lys Glu Thr Gly Asp
 50 55 60
 Pro Leu Ile Gly Val Asn Val Ser Val Lys Gly Thr Ser Lys Gly Thr
 65 70 75 80
 Ile Thr Asn Leu Asn Gly Gln Tyr Ser Val Asp Val Asn Ser Asp Lys
 85 90 95
 Asp Ile Leu Val Phe Ser Phe Ile Gly Lys Ala Thr Gln Glu Lys Ala
 100 105 110
 Val Lys Gly Leu Ser His Ile Asp Val Val Met Ala Asp Asp Ala Thr
 115 120 125
 Met Leu Gly Glu Val Val Ile Gln Thr Gly Tyr Met Thr Gln Arg Lys
 130 135 140
 Ala Asp Leu Thr Gly Ser Val Ala Met Ala Asn Thr Ser Asp Leu Ala
 145 150 155 160
 Gln Asn Pro Ser Thr Asn Ala Leu Lys Ser Leu Gln Gly Lys Leu Pro
 165 170 175
 Gly Val Phe Ile Thr Thr Asp Gly Ser Pro Gly Gly Asn Ala Ser Ile
 180 185 190
 Gln Ile Arg Gly Leu Thr Ser Leu Asn Ala Gln Pro Asn Pro Leu Ile
 195 200 205
 Val Leu Asp Gly Leu Ala Gly Asp Tyr Asn Leu Arg Asp Ile Asn Pro
 210 215 220
 Ala Asn Ile Glu Ser Ile Gln Val Leu Lys Asp Ala Ala Ser Ala Ser
 225 230 235 240
 Ile Tyr Gly Ser Arg Ala Ala Gly Gly Val Ile Ile Ile Glu Thr Lys
 245 250 255
 Lys Gly Lys Lys Gly Glu Ser Lys Ile Ser Tyr Glu Gly Arg Val Gln
 260 265 270
 Phe Ser Lys Trp Val Asn Lys Pro Asp Leu Leu Asn Thr Asp Glu Tyr
 275 280 285
 Gly Arg Ala Ile Trp Gln Ala Tyr Ala Asn Asp Asp Lys Leu Gly Glu
 290 295 300
 Ile Lys Gln Ser Val Arg Phe Phe Asp Tyr Asp Trp Ser Tyr Asp Ser
 305 310 315 320
 Asn Gly Tyr Pro Val Leu Asn Ser Val Lys Pro Val Glu Trp Leu Asn
 325 330 335
 Thr Ala Gln Thr Met Arg Ser Ala Asp Thr Asn Trp Ile Asp Glu Ile
 340 345 350
 Ser Arg Thr Gly Val Ser Gln Asn His Gln Ile Ser Val Ser Ser Gly
 355 360 365
 Thr Asp Lys Ser Arg Thr Phe Phe Asn Leu Gly Tyr Glu Asn Thr Glu
 370 375 380
 Gly Ile Gln Ile Glu Thr Phe Trp Lys Asn
 385 390

<210> 10292

<211> 63

<212> PRT

<213> B.fragilis

<400> 10292

Arg	Gln	Val	Ser	Ser	Leu	His	Cys	Asp	Thr	Pro	Met	Val	Tyr	Arg	Gly
1				5					10					15	
Ala	Ser	Gly	Leu	His	Glu	Thr	Ser	Ser	Pro	Asp	Ser	Ile	Ser	Pro	Ser
		20						25					30		
Lys	Lys	Ser	Ile	Arg	Phe	Met	Val	Gly	Tyr	Tyr	Ile	Lys	Gly	Ser	Gly
		35					40					45			
Gly	Lys	Tyr	Asn	Asn	Phe	Pro	Pro	Glu	Ser	Pro	Thr	Cys	Leu	Val	
	50					55					60				

<210> 10293

<211> 393

<212> PRT

<213> B.fragilis

<400> 10293

Glu	Met	Glu	Thr	Phe	Tyr	Arg	Thr	His	Ala	Tyr	Leu	Val	Glu	His	Thr
1				5					10					15	
Asn	Ala	Pro	Val	Arg	Arg	Asp	Leu	Met	Asp	Glu	Ile	Asn	Trp	Ser	Asp
		20						25					30		
Arg	Leu	Ile	Gly	Ile	Lys	Gly	Thr	Arg	Gly	Val	Gly	Lys	Thr	Thr	Phe
	35						40					45			
Leu	Leu	Gln	Tyr	Ala	Lys	Glu	Lys	Phe	Gly	Thr	Asp	Arg	Ser	Cys	Leu
	50					55					60				
Phe	Ile	Asn	Met	Asn	Asn	Phe	Tyr	Phe	Ser	Gly	His	Ser	Ile	Val	Asp
65					70					75					80
Phe	Ala	Asn	Glu	Phe	Gln	Lys	Arg	Gly	Gly	Lys	Val	Leu	Leu	Ile	Asp
				85					90					95	
Gln	Val	Phe	Lys	His	Pro	Asp	Trp	Ser	Arg	Glu	Leu	Arg	Met	Cys	Tyr
			100					105					110		
Asp	Arg	Phe	Pro	Asn	Leu	Lys	Ile	Val	Phe	Thr	Gly	Ser	Ser	Val	Met
	115						120					125			
Arg	Leu	Lys	Glu	Glu	Asn	Leu	Glu	Leu	Arg	Asp	Ile	Val	Lys	Ser	Tyr
	130					135					140				
Asn	Leu	Arg	Gly	Phe	Ser	Phe	Arg	Glu	Phe	Leu	Asn	Leu	Gln	Thr	Gly
145					150					155					160
Met	Lys	Phe	Arg	His	Tyr	Thr	Leu	Glu	Glu	Ile	Leu	Ser	Ser	His	Glu
				165					170					175	
Gln	Ile	Ala	Lys	Gly	Val	Leu	Ser	Lys	Val	Arg	Pro	Leu	Asp	Tyr	Phe
			180					185					190		
Gln	Asp	Tyr	Leu	His	His	Gly	Phe	Tyr	Pro	Phe	Phe	Leu	Glu	Lys	Arg
		195					200					205			
Asn	Phe	Ser	Glu	Asn	Leu	Leu	Lys	Thr	Met	Asn	Met	Met	Val	Glu	Val
	210					215					220				
Asp	Ile	Leu	Leu	Ile	Lys	Gln	Ile	Glu	Leu	Lys	Tyr	Leu	Ser	Lys	Ile
225					230					235					240
Lys	Lys	Leu	Leu	Tyr	Leu	Leu	Ala	Val	Asp	Gly	Pro	Lys	Ala	Pro	Asn
				245					250					255	
Val	Ser	Gln	Leu	Ala	Ser	Asp	Ile	Gln	Thr	Ser	Arg	Ala	Thr	Val	Met
		260						265					270		
Asn	Tyr	Ile	Lys	Tyr	Leu	Ala	Asp	Ala	Arg	Leu	Ile	Asn	Leu	Val	Tyr
	275						280					285			
Pro	Lys	Gly	Glu	Glu	Phe	Pro	Lys	Lys	Pro	Ser	Lys	Ile	Met	Leu	His
	290					295					300				
Asn	Pro	Asn	Leu	Met	Tyr	Ser	Ile	Tyr	Pro	Val	Lys	Val	Glu	Glu	Gln
305					310					315					320
Asp	Val	Leu	Asp	Thr	Phe	Phe	Val	Asn	Thr	Met	Trp	Lys	Asp	His	Lys
				325					330					335	

10292 10293 393 PRT B.fragilis
 1 5 10 15 20 25 30 35 40 45 50 55 60
 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335

Val His Lys Gly Asp Lys Asn Thr Ser Phe Met Val Asp Glu Val Met
 340 345 350
 Pro Phe Lys Ile Cys Cys Glu Gly Ala Lys Ile Lys Asn Asn Pro Gly
 355 360 365
 Val Thr Tyr Ala Leu His Lys Ala Glu Ile Gly Arg Gly Asn Gln Ile
 370 375 380
 Pro Leu Trp Met Phe Gly Phe Leu Tyr
 385 390

<210> 10294

<211> 492

<212> PRT

<213> B.fragilis

<400> 10294

Glu Asp Arg Ala Gly Arg Gly Thr Ser Leu Leu Phe Leu Phe Leu Leu
 1 5 10 15
 Ser Leu Leu Pro Leu His Ala Gln Thr Ser Pro Lys His Glu Val Arg
 20 25 30
 Ala Ala Trp Ile Thr Ala Val Tyr Gly Leu Asp Trp Pro Arg Thr Lys
 35 40 45
 Ala Thr Thr Pro Ala Gly Ile Arg Arg Gln Lys Glu Glu Leu Ile Asp
 50 55 60
 Ile Leu Asp Arg Leu Lys Glu Ala Asn Phe Asn Thr Val Leu Phe Gln
 65 70 75 80
 Thr Arg Thr Arg Gly Asp Val Leu Tyr Arg Ser Asp Ile Glu Pro Phe
 85 90 95
 Asn Ser Ile Leu Thr Gly Lys Thr Gly Gly Asp Pro Gly Tyr Asp Pro
 100 105 110
 Leu Ala Phe Ala Val Glu Glu Cys His Lys Arg Gly Met Glu Cys His
 115 120 125
 Ala Trp Met Val Thr Ile Pro Leu Gly Gly Lys Lys His Val Ala Ser
 130 135 140
 Leu Gly Lys Gln Ser Val Thr Arg Arg Glu Arg Asp Ile Cys Val Pro
 145 150 155 160
 Tyr Lys Asn Glu Tyr Phe Leu Asn Pro Gly His Pro Ala Thr Lys Glu
 165 170 175
 Tyr Leu Met Lys Leu Val Arg Glu Val Val Ser Arg Tyr Asp Val Asp
 180 185 190
 Gly Val His Phe Asp Tyr Leu Arg Tyr Pro Glu Asn Ala Pro Arg Phe
 195 200 205
 Pro Asp Ser Tyr Asp Phe Arg Arg Tyr Gly Lys Gly Arg Thr Leu Ala
 210 215 220
 Gln Trp Arg Arg Asp Asn Leu Thr Asp Ile Val Arg Tyr Ile Tyr Asn
 225 230 235 240
 Gly Val Lys Ala Met Lys Pro Trp Val Lys Val Ser Thr Cys Pro Val
 245 250 255
 Gly Lys Tyr Arg Asp Thr Ser Arg Tyr Ser Ser Lys Gly Trp Asn Ala
 260 265 270
 Phe Phe Thr Val Tyr Gln Asp Pro Gln Gly Trp Leu Gly Glu Gly Ile
 275 280 285
 Gln Asp Gln Ile Tyr Pro Met Met Tyr Phe Arg Gly Asn Gly Phe Tyr
 290 295 300
 Pro Phe Ala Leu Asp Trp Gln Glu Gln Ser Asn Gly Arg His Ile Val
 305 310 315 320
 Pro Gly Leu Gly Ile Tyr Phe Leu His Pro Asp Glu Gly Asn Trp Thr
 325 330 335
 Thr Glu Glu Val Glu Arg Gln Met His Phe Ile Arg Ser Asn Arg Leu
 340 345 350

10294 492 PRT B.fragilis

Ala Gly Glu Ala His Tyr Arg Val Lys Tyr Leu Met Asp Asn Thr Gln
 355 360 365
 Gly Val Tyr Asp Leu Leu Leu Asp His Phe Tyr Gln Tyr Pro Ala Leu
 370 375 380
 Gln Pro Pro Met Pro Trp Ile Asp Asn Val Ser Pro Thr Ala Pro Ser
 385 390 395 400
 Ala Leu Lys Ala Val Ser Ala Gly Asp Gly Tyr Thr Arg Leu Asn Trp
 405 410 415
 Lys Ala Ala Thr Asp Asn Asp Lys Gln Asn Ala Pro Met Tyr Val Val
 420 425 430
 Tyr Ala Ser Asp Thr Tyr Pro Val Asp Ile Thr Asn Pro Glu Asn Ile
 435 440 445
 Leu Val Gln Asn Leu Arg Asp Thr His Tyr Ile Tyr Ala Pro Ile Arg
 450 455 460
 Pro Trp Thr Ala Arg Lys Tyr Phe Ala Val Thr Ala Val Asp Arg Cys
 465 470 475 480
 Gly Asn Glu Ser Lys Ala Ala Gln Gln Glu Glu Lys
 485 490

<210> 10295

<211> 301

<212> PRT

<213> B.fragilis

<400> 10295

Lys Leu Ile His Thr Met Asn Ser Ile Ile Val Gly Met Gly Glu Ala
 1 5 10 15
 Leu Trp Asp Val Leu Pro Glu Gly Lys Lys Ile Gly Gly Ala Pro Ala
 20 25 30
 Asn Phe Ala Tyr His Val Ser Gln Phe Gly Phe Asp Ser Arg Val Val
 35 40 45
 Ser Ala Val Gly Asn Asp Glu Leu Gly Asp Glu Ile Leu Glu Ile Phe
 50 55 60
 Arg Glu Lys Gln Leu Lys His Gln Leu Glu Arg Val Asn Tyr Pro Thr
 65 70 75 80
 Gly Thr Val Gln Val Thr Leu Asp Asn Gly Gly Val Pro Cys Tyr Asp
 85 90 95
 Ile Lys Glu Gly Val Ala Trp Asp Asn Ile Pro Phe Thr Asp Asp Leu
 100 105 110
 Lys Arg Leu Ala Leu Ser Thr Arg Ala Val Cys Phe Gly Ser Leu Ala
 115 120 125
 Gln Arg Asp Glu Val Ser Arg Ala Thr Ile Asn Arg Phe Leu Asp Thr
 130 135 140
 Met Pro Asp Met Glu Gly Gln Leu Lys Ile Phe Asp Ile Asn Leu Arg
 145 150 155 160
 Gln Asn Phe Tyr Thr Lys Glu Val Leu Arg Glu Ser Phe Arg Lys Cys
 165 170 175
 Asn Val Leu Lys Ile Asn Asp Glu Glu Ile Leu Ile Ser Arg Met
 180 185 190
 Phe Gly Tyr Pro Gly Ile Asp Leu Gln Asp Lys Cys Trp Ile Leu Leu
 195 200 205
 Ala Lys Tyr Asn Leu Lys Met Leu Ile Leu Thr Cys Gly Thr Asn Gly
 210 215 220
 Ser Tyr Val Phe Thr Pro Gly Thr Val Ser Phe Gln Glu Thr Pro Lys
 225 230 235 240
 Val Pro Val Ala Asp Thr Val Gly Ala Gly Asp Ser Phe Thr Ala Ala
 245 250 255
 Phe Cys Ser Ser Val Leu Lys Gly Lys Ser Ile Pro Glu Ala His Arg
 260 265 270

10295 301 PRT B.fragilis 10295

Leu Ala Val Glu Val Ser Ala Tyr Val Cys Thr Gln Ser Gly Ala Met
 275 280 285
 Pro Val Leu Pro Glu Ala Leu Arg Asn Arg Leu Asn Asp
 290 295 300

<210> 10296

<211> 768

<212> PRT

<213> B.fragilis

<400> 10296

Thr Lys Asn Lys Pro Asn Lys Arg Thr Thr His Arg Met Lys Ser Met
 1 5 10 15
 Arg Ser Ile His Ser Leu Ile Arg Cys Cys Met Ile Leu Leu Leu Leu
 20 25 30
 Thr Ser Cys Tyr Ser Lys Glu Glu Arg Arg Val Leu Val Ile His Ser
 35 40 45
 Tyr Glu Lys Asp Tyr Gln Gly Tyr Ala Glu Phe Asn Lys Leu Ile Lys
 50 55 60
 Lys Glu Phe Ala Lys Ala His Ile Pro Val Glu Leu Thr Phe Phe Tyr
 65 70 75 80
 Leu Asn Cys Glu Ile Asn Asn Glu Gln Gln Glu Ile Asp Lys Ile Asn
 85 90 95
 Asn Phe Leu Asp Ser Ile Ser Lys Trp Lys Pro Glu Val Leu Leu Val
 100 105 110
 Asn Asp Asp Gln Ala Thr Tyr Ser Leu Leu Glu Thr His His Pro Leu
 115 120 125
 Leu Lys Gly Ile Pro Ile Val Phe Ser Gly Val Asn Tyr Pro Asn Trp
 130 135 140
 Glu Leu Ile Gly Gln Tyr Asn Asn Val Thr Gly Phe His Asp Lys Ile
 145 150 155 160
 Asp Phe Arg Lys Asn Leu Glu Met Val His Lys Leu Thr Gly Lys Asn
 165 170 175
 His Ile Tyr Thr Ile Leu Asp Phe Thr Phe Leu Asp Arg Lys Val Arg
 180 185 190
 Asn Asp Ile Asp Asn Gln Leu Lys Ser Thr Asp Ile Ile Ser Asn Leu
 195 200 205
 Asp Trp His Leu Asp Lys Asn Asp Thr Arg Lys Glu Ala Glu Lys Gly
 210 215 220
 His Ile Ile Ile Asn Ala Leu Ser Ala Arg Asn Leu Ser Lys Asn Gln
 225 230 235 240
 Asn Lys Asp Gln Thr Lys Gly Gly Asp Phe Ile Trp Ser Ile Ser Lys
 245 250 255
 Tyr Ser Thr Leu Pro Tyr Leu Gln Thr Lys Phe Asp Tyr Thr Thr Val
 260 265 270
 Thr Met Ala Ser Leu Ser Thr Arg Gln Arg Phe Thr Thr Ile Asn Glu
 275 280 285
 Leu Phe Asp Cys Gly Arg Asp Phe Leu Gly Gly Tyr Ile Thr Pro Met
 290 295 300
 His Ile Gln Val Glu Glu Ser Val His Ala Ala Arg Ile Leu Asn
 305 310 315 320
 Gly Glu Asn Val Ala Asp Ile Pro Ile Gln Glu Ser Ala Lys Gly Tyr
 325 330 335
 Phe Ile Asp Trp Asn Ala Met Gln Lys Glu His Leu Thr Ile Ala Asp
 340 345 350
 Ile Pro His Glu Tyr Thr Ile Ile Asn Ile Pro Phe Lys Thr Arg His
 355 360 365
 Pro Ile Val Trp Trp Phe Ala Leu Leu Gly Ser Ile Thr Ala Ile Val
 370 375 380

Ser Leu Leu Ser Gly Ile Thr Tyr Leu Tyr Trp Arg Glu Thr Lys Arg
 385 390 395 400
 Lys Arg Ser Ile Leu Tyr Glu Leu Glu Asp Glu Lys Glu Ser Leu Ala
 405 410 415
 Leu Ala Val Glu Gly Ser Asp Thr Tyr Ala Trp Arg Leu Lys Asp Asp
 420 425 430
 Thr Met Val Phe Glu Tyr Ala Phe Trp Lys Asn Leu Gly Met Ala Pro
 435 440 445
 His Pro Leu Thr Ile Asp Gly Phe Leu Ser Phe Val Asp Ala Asp Tyr
 450 455 460
 Leu Asp Thr Thr Gln Ala Leu Leu Thr Lys Asn Ala Thr Asn Gly Lys
 465 470 475 480
 His Phe Ile Lys Leu Lys Cys Asp Phe Asn Gly Thr Gly Tyr Gln Trp
 485 490 495
 Trp Glu Leu Arg Cys Ser Thr Met Lys Ser Ala Leu Gly Gly Gln Lys
 500 505 510
 Thr Thr Gly Leu Leu Leu Asn Ile Glu Asp Tyr Lys Lys Arg Glu Gln
 515 520 525
 Glu Leu Ile Glu Ala Arg Lys Met Ala Glu Lys Ala Glu Leu Lys Glu
 530 535 540
 Ser Phe Leu Ala Asn Ile Ser His Glu Ile Arg Thr Pro Leu Asn Ala
 545 550 555 560
 Ile Val Gly Phe Ser Thr Leu Leu Ala Ser Pro Asp Asp Thr Asp Ile
 565 570 575
 Thr Pro Glu Glu Lys Glu Gln Tyr Ile Asp Thr Ile Asn Arg Asn Ser
 580 585 590
 Glu Leu Leu Leu Lys Leu Ile Asn Asp Ile Leu Glu Leu Ser Arg Ile
 595 600 605
 Glu Ser Gly Tyr Met Ser Phe Asp Cys Asp Asp Tyr Pro Leu Asp Ala
 610 615 620
 Leu Ile Arg Asp Thr Tyr Gln Thr His Lys Ile Leu Ile Pro Gly Gln
 625 630 635 640
 Leu His Phe Leu Leu Glu Glu Gly Glu Lys Gly Leu Ile Val His Val
 645 650 655
 Asp Lys Asn Arg Leu Val Gln Val Ile Thr Asn Phe Leu Asn Asn Ala
 660 665 670
 Ser Lys Phe Thr Arg Glu Gly Ser Ile Lys Leu Gly Trp Ser Tyr Met
 675 680 685
 Pro Gln Thr Glu Glu Val Glu Ile Tyr Val Glu Asp Thr Gly Ile Gly
 690 695 700
 Ile Pro Gln Ser Glu Gln Lys Met Ile Phe Gly Arg Phe Tyr Lys Gln
 705 710 715 720
 Asn Glu Phe Ala Gln Gly Thr Gly Leu Gly Leu Ser Ile Cys Lys Leu
 725 730 735
 Ile Ile Glu Lys Leu Gln Gly Arg Leu Ser Leu Arg Ser Glu Ala Gly
 740 745 750
 Thr Gly Ser Arg Phe Ser Ile Phe Phe Ser Cys Lys Lys Gln Ser Ile
 755 760 765

<210> 10297

<211> 282

<212> PRT

<213> B.fragilis

<400> 10297

Asn His Ser Lys Cys Asn Arg Ile Met Ile Asn Ile Gly Gln Tyr Ile
 1 5 10 15
 Glu Thr Leu Ile Asn Trp Met Met Ile His Phe Ser Thr Phe Phe Asp
 20 25 30

Ala Leu Asn Leu Gly Ile Gly Ser Phe Ile Asn Gly Phe Gln His Ile
 35 40 45
 Leu Phe Gly Ile Pro Phe Tyr Leu Thr Ile Ala Ala Met Val Leu Leu
 50 55 60
 Ala Trp Ala Lys Ala Gly Arg Gly Val Ala Val Phe Thr Leu Leu Gly
 65 70 75 80
 Leu Leu Leu Ile Tyr Gly Met Gly Phe Trp Glu Ala Thr Met Gln Thr
 85 90 95
 Leu Ala Leu Val Leu Ser Ser Thr Cys Leu Ala Leu Ile Val Gly Val
 100 105 110
 Pro Ile Gly Val Trp Thr Ala Asn Ser Asn Arg Ala Glu Lys Val Ile
 115 120 125
 His Pro Ile Leu Asp Leu Met Gln Thr Met Pro Ala Phe Val Tyr Leu
 130 135 140
 Ile Pro Ala Val Leu Phe Phe Gly Leu Gly Val Val Pro Gly Val Phe
 145 150 155 160
 Ala Thr Ile Ile Phe Ala Met Pro Pro Val Ile Arg Leu Thr Gly Leu
 165 170 175
 Gly Ile Arg Gln Val Pro Lys Asn Val Val Glu Ala Ser Arg Ser Phe
 180 185 190
 Gly Ala Thr Arg Trp Gln Leu Leu Tyr Lys Val Gln Leu Pro Leu Ala
 195 200 205
 Leu Pro Thr Ile Leu Thr Gly Val Asn Gln Thr Ile Met Met Ser Leu
 210 215 220
 Ser Met Val Val Ile Ala Ala Met Ile Ala Ala Gly Gly Leu Gly Glu
 225 230 235 240
 Ile Val Leu Lys Gly Ile Thr Gln Met Lys Ile Gly Leu Gly Phe Glu
 245 250 255
 Gly Gly Ile Ala Val Val Ile Leu Ala Ile Ile Leu Asp Arg Ile Thr
 260 265 270
 Gln Gly Met Val Arg Arg Lys Asp Lys Lys
 275 280

<210> 10298

<211> 285

<212> PRT

<213> B.fragilis

<400> 10298

Asp Met Arg Lys Tyr Arg Ile Ile Gly Ser Leu Leu Leu Leu Ala Val
 1 5 10 15
 Met Cys Val Ala Cys Asn Pro Asp Ser Gly Lys Lys Lys Ile Ser Ile
 20 25 30
 Ala Tyr Ala Asn Trp Leu Glu Gly Ile Ala Met Ser His Leu Ala Lys
 35 40 45
 Val Val Leu Glu Glu Lys Gly Tyr Glu Val Glu Leu Leu Asn Ala Asp
 50 55 60
 Val Ala Pro Val Phe Ala Ser Val Ser Arg Lys Lys Ala Asp Val Phe
 65 70 75 80
 Met Asp Ala Trp Leu Pro Val Thr Met Lys Asp Tyr Ile Asp Gln Tyr
 85 90 95
 Gly Asp Gln Ile Glu Phe Ile Gly Glu Val Tyr Asp Ser Ala Arg Val
 100 105 110
 Gly Leu Val Val Pro Gln Tyr Val Thr Ile Asp Ser Ile Gly Glu Leu
 115 120 125
 Ala Ala Tyr Lys Gly Gln Phe Ser Ser Glu Ile Val Gly Ile Asp Ala
 130 135 140
 Gly Ala Gly Ile Met Lys Thr Thr Asp Lys Ala Ile Gly Asp Tyr Gly
 145 150 155 160


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Leu Asp Gly Tyr Lys Leu Leu Thr Ser Ser Ser Ser Thr Met Leu Ala
      165                      170                      175
Ser Leu Gln Lys Ala Met Glu Lys Glu Ala Trp Ile Val Ile Thr Gly
      180                      185                      190
Trp Thr Pro His Trp Met Phe Asp Arg Tyr Pro Leu Lys Phe Leu His
      195                      200                      205
Asp Pro Lys Gly Thr Tyr Gly Asn Val Glu Ser Ile Tyr Val Val Gly
      210                      215                      220
Trp Lys Gly Phe Thr Glu Lys Asp Pro Phe Ala Ala Lys Phe Phe Ser
      225                      230                      235                      240
Asn Ile Lys Phe Thr Thr Glu Glu Ile Ser Ser Leu Met Lys Ala Leu
      245                      250                      255
Lys Asp Ala Arg Met Asp Glu Glu Asp Leu Val Arg Lys Trp Arg Asp
      260                      265                      270
Glu His Arg Glu Leu Val Glu Ser Trp Ile Pro Glu Ser
      275                      280                      285

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<210> 10299

<211> 909

<212> PRT

<213> B.fragilis

<400> 10299

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Pro Thr Met Asn Arg Ile Leu Phe Leu Leu Gly Leu Met Leu Ser Gly
1      5      10      15
Leu Leu Val Ser Cys Ser Pro Asp Ala Pro Arg Tyr Thr Ile Gly Val
      20      25      30
Ser Gln Cys Ser Asp Asp Thr Trp Arg His Lys Met Asn Asp Glu Ile
      35      40      45
Gln Arg Glu Ala Leu Phe Tyr Gly Gly Val Lys Val Glu Thr Arg Thr
      50      55      60
Ala His Asp Asp Ser Arg Arg Gln Ile Glu Asp Ile Arg Tyr Phe Ile
      65      70      75      80
Arg Gln Lys Val Asp Leu Leu Ile Val Ala Ala Asn Glu Gly Met Ala
      85      90      95
Leu Thr Pro Val Val Glu Glu Ala Phe Asp Lys Gly Ile Pro Val Ile
      100     105     110
Met Val Asp Arg Arg Ile Leu Ser Asp Lys Tyr Thr Ala Tyr Ile Gly
      115     120     125
Ala Asp Asn Tyr Glu Leu Gly Lys Ala Val Gly Asn Tyr Ile Ala His
      130     135     140
Arg Leu Lys Gly Arg Gly Lys Val Val Glu Leu Ser Gly Leu Val Gly
      145     150     155     160
Ser Thr Pro Ala Ile Glu Arg His Gln Gly Phe Met Ser Ala Ile Ser
      165     170     175
Gln Tyr Pro Asp Met Thr Leu Leu Ala Ser Glu Asp Ala Gly Trp Leu
      180     185     190
Gln Gln Pro Ala Glu Ala Lys Met Asp Ser Leu Leu Gln Arg Phe Pro
      195     200     205
Glu Ile Asp Ala Val Tyr Gly Met Asn Asp Arg Met Ala Ala Gly Ala
      210     215     220
Phe Arg Ala Ala Gly Arg Arg Gly Arg Glu Lys Glu Met Ile Phe Val
      225     230     235     240
Gly Ile Asp Ala Leu Pro Gly Lys Gly Asn Gly Val Glu Leu Val Leu
      245     250     255
Asp Ser Val Leu Asp Ala Thr Phe Ile Tyr Pro Thr Glu Gly Asp Lys
      260     265     270
Val Val Gln Leu Ala Met Asp Ile Leu Glu Lys Lys Pro Phe Glu Arg
      275     280     285

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Glu	Thr	Lys	Leu	Lys	Thr	Ala	Val	Val	Asp	Ala	Val	Asn	Ala	His	Val
290						295					300				
Met	Glu	Leu	Gln	Thr	Asn	His	Ile	Gly	Glu	Leu	Asp	Gly	Lys	Ile	Glu
305					310					315					320
Thr	Leu	Asn	Asp	Arg	Val	Gly	Ile	Tyr	Leu	Ser	Arg	Val	Ala	Thr	Gln
				325					330					335	
Arg	Ile	Val	Leu	Tyr	Gly	Gly	Leu	Ile	Ile	Leu	Leu	Leu	Ile	Val	Gly
			340					345					350		
Leu	Leu	Ile	Val	Val	Tyr	Lys	Ser	Leu	Arg	Ser	Lys	Asn	Ser	Leu	Asn
		355					360					365			
Arg	Glu	Leu	Ser	Arg	Gln	Lys	Glu	Gln	Leu	Glu	Glu	Gln	Arg	Asp	Gln
		370				375					380				
Leu	Ile	Glu	Leu	Ser	His	Gln	Leu	Glu	Glu	Ala	Thr	His	Ala	Lys	Leu
385					390					395					400
Val	Phe	Phe	Thr	Asn	Ile	Ser	His	Asp	Phe	Arg	Thr	Pro	Leu	Thr	Leu
				405					410					415	
Val	Ala	Asp	Pro	Val	Glu	Gln	Leu	Leu	Ala	Asp	Pro	Ser	Leu	Glu	Gly
			420					425					430		
Asp	Arg	Arg	Arg	Met	Leu	Leu	Leu	Val	Gln	Arg	Asn	Val	Gln	Ile	Leu
		435					440					445			
Leu	Arg	Leu	Val	Asn	Gln	Ile	Leu	Asp	Phe	Arg	Arg	Tyr	Glu	Thr	Gly
		450				455					460				
Lys	Met	Glu	Phe	Thr	Pro	Val	Pro	Leu	Asp	Leu	Leu	Gln	Cys	Phe	Val
465					470					475					480
Gly	Trp	Asn	Asp	Ser	Phe	Gln	Ala	Ala	Ala	Arg	Arg	Lys	His	Ile	His
				485					490					495	
Phe	Ser	Phe	Asp	Ser	Val	Pro	Asp	Thr	Asp	Tyr	His	Thr	Gln	Ala	Asp
			500					505					510		
Ala	Glu	Lys	Leu	Glu	Arg	Ile	Tyr	Phe	Asn	Leu	Leu	Ala	Asn	Ala	Phe
		515					520					525			
Lys	Phe	Thr	Pro	Glu	Asn	Gly	Lys	Val	Thr	Val	Arg	Leu	Ala	Ala	Leu
	530					535					540				
Gln	Lys	Asp	Gly	Ala	Pro	Phe	Phe	Arg	Phe	Thr	Val	Ala	Asn	Thr	Gly
545					550					555					560
Ser	Leu	Ile	Ser	Ala	Glu	His	Ile	Arg	Ser	Ile	Phe	Asp	Arg	Phe	Tyr
				565					570					575	
Lys	Ile	Asp	Arg	His	His	Thr	Gly	Ser	Gly	Ile	Gly	Leu	Ala	Leu	Val
			580					585					590		
Lys	Ala	Phe	Val	Glu	Ile	His	Gly	Gly	Ser	Ile	Ser	Val	Glu	Ser	Asp
		595					600					605			
Glu	Arg	Leu	Gly	Thr	Val	Phe	Thr	Val	Asp	Leu	Pro	Val	Arg	Thr	Cys
		610				615					620				
Glu	Glu	Gly	Ala	Cys	Val	Val	Thr	Ala	Pro	Met	Glu	Glu	Ser	Ala	Pro
625					630					635					640
Asp															

755	760	765
Leu Leu Thr Arg Ile Arg	Asn Leu Ile Glu Ser Arg	Gln Arg Met Lys
770	775	780
Gln Phe Phe Gly Asp Arg	Gln Thr Leu Ala Lys Glu	Asp Ile Cys Asp
785	790	795
Met Asp Lys Asp Phe Val	Glu Arg Phe Lys Ser Leu	Ile Glu Val Lys
805	810	815
Met Gly Asp Ser Glu Leu	Asn Val Glu Asp Leu	Gly Lys Glu Met Gly
820	825	830
Leu Ser Arg Val Gln Leu	Tyr Arg Lys Ile Lys Ser	Leu Thr Asn Tyr
835	840	845
Ala Pro Asn Glu Leu Leu	Arg Met Ala Arg Leu	Lys Lys Ala Ala Ser
850	855	860
Leu Leu Ala Ser Ser Asp	Met Thr Ile Ala Glu	Val Gly Tyr Glu Val
865	870	875
Gly Phe Thr Ser Pro Ser	Tyr Phe Ala Lys Cys Tyr	Lys Glu Gln Phe
885	890	895
Gly Glu Ser Pro Thr Glu	Phe Leu Lys Arg Ser	Gly Leu
900	905	

<210> 10300

<211> 214

<212> PRT

<213> B.fragilis

<400> 10300

Thr Lys Met Asn Arg Phe His His	Arg Val Thr Gln Ser Leu Thr Glu
1 5 10 15	
Phe Lys Phe Leu Val His Arg Met	Phe Lys Arg Lys Ile Phe Ser Val
20 25 30	
Arg Leu Cys Val Thr Leu Trp Cys	Pro Pro Lys Asn Gly Ile Ile Met
35 40 45	
Asn Ile Thr Ile Arg Pro Thr Arg	Leu Glu Glu Leu Gly Gln Val Met
50 55 60	
Pro Phe Tyr Glu Arg Ala Arg Arg	Phe Met Ala Thr Asn Gly Asn Ala
65 70 75 80	
Asn Gln Trp Ile Asn Gly Tyr Pro	Ser Pro Asp Asp Ile Arg Gln Asp
85 90 95	
Ile Glu Asn Gly Ser Ser Tyr Val	Phe Val Asn Glu Asn Gln Glu Leu
100 105 110	
Glu Gly Cys Phe Ala Phe Ile Arg	Gly Glu Asp Pro Asn Tyr Lys Val
115 120 125	
Ile Lys Asp Gly Ala Trp Leu Asn	Asp Ala Pro Tyr Gly Val Ile His
130 135 140	
Arg Ile Ala Ser Gly Gly Arg Val	Lys Gly Leu Met Asp Leu Cys Leu
145 150 155 160	
Glu Trp Cys Ser Ser His Cys Pro	Asn Leu Arg Val Asp Thr His Arg
165 170 175	
Asp Asn Lys Val Leu Gln Asn Ile	Leu Leu Lys Asn Gly Phe Thr Tyr
180 185 190	
Cys Gly Ile Ile Tyr Val Lys Asn	Gly Thr Glu Arg Leu Ala Tyr Gln
195 200 205	
Arg Thr Ala Val Thr Arg	
210	

<210> 10301

<211> 281

<212> PRT

<213> B.fragilis

<400> 10301

Arg His Val Asn Pro Gly Cys Tyr Phe Gly Gly Ser Ala Thr Gln Tyr
 1 5 10 15
 Phe Ile Gly Asp Phe Asp Gly Glu Lys Phe Val Cys Asp Asn Lys Pro
 20 25 30
 Glu Thr Val Lys Trp Leu Asp Trp Gly Lys Asp His Tyr Ala Thr Val
 35 40 45
 Cys Phe Ser Asn Thr Gly Asp Arg Thr Ile Ala Val Pro Trp Met Ser
 50 55 60
 Asn Trp Gln Tyr Ala Asn Ile Val Pro Thr Arg Gln Phe Arg Ser Ala
 65 70 75 80
 Asn Ala Leu Pro Arg Glu Leu Ser Leu Tyr Thr Gln Asp Gly Asp Ile
 85 90 95
 Tyr Met Ala Ala Ala Pro Val Glu Glu Thr Lys Ser Leu Arg Lys Glu
 100 105 110
 Ser Arg Glu Ile Pro Ala Phe Glu Val Gly Asp Ala Tyr His Val Asp
 115 120 125
 Ser Leu Leu Ser Asp Asn Lys Gly Ala Tyr Glu Ile Glu Leu Glu Leu
 130 135 140
 Ala Ala Gly Ser Ala Glu Ile Met Gly Leu Lys Leu Phe Asn Glu Lys
 145 150 155 160
 Gly Glu Asn Val Asp Ile Tyr Ile Ser Leu Pro Glu Lys Lys Leu Val
 165 170 175
 Met Asp Arg Thr Lys Ser Gly Ile Val Asp Phe Gly Lys Asp Ser Ala
 180 185 190
 Pro His Ala Ile Glu Ala His Asp Arg Arg Lys Gln Asn Ser Ile Asn
 195 200 205
 Tyr Val Asp Asp Phe Ala Leu Gly Thr Trp Ala Pro Val Gln Lys Ala
 210 215 220
 Gly Asn Tyr Lys Leu Asp Ile Phe Val Asp Lys Cys Ser Val Glu Ile
 225 230 235 240
 Phe Leu Asn Gly Gly Lys Ile Ala Met Thr Asn Leu Ile Phe Pro Thr
 245 250 255
 Thr Pro Tyr Asn Gln Met Ser Phe Tyr Ser Arg Gly Gly Ala Phe Lys
 260 265 270
 Val Asp Arg Cys Lys Ile Tyr Arg Leu
 275 280

<210> 10302

<211> 390

<212> PRT

<213> B.fragilis

<400> 10302

His Ile Met Glu Asn Thr Lys Asn Asn Ser Tyr Met Lys Leu Ile Pro
 1 5 10 15
 Val Met Leu Cys Phe Phe Ala Met Gly Phe Val Asp Leu Val Gly Ile
 20 25 30
 Ala Ser Asn Tyr Val Lys Ala Asp Leu Gly Leu Thr Asp Ser Gln Ala
 35 40 45
 Asn Ile Phe Pro Ser Leu Val Phe Phe Trp Phe Leu Ile Phe Ser Val
 50 55 60
 Pro Thr Gly Met Leu Met Asn Arg Ile Gly Arg Lys Lys Thr Val Leu
 65 70 75 80
 Leu Ser Leu Val Ile Thr Phe Ala Ser Leu Leu Leu Pro Val Phe Gly
 85 90 95
 Asp Ser Tyr Leu Leu Met Leu Val Ser Phe Ser Leu Leu Gly Ile Gly
 100 105 110

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Asn Ala Leu Met Gln Thr Ser Leu Asn Pro Val Leu Ser Asn Ile Val
  115                      120                      125
Ser Gly Glu Arg Leu Ala Ser Thr Leu Thr Phe Gly Gln Phe Val Lys
  130                      135                      140
Thr Ile Ala Ser Phe Leu Ala Pro Tyr Ile Ala Met Trp Gly Ala Ile
  145                      150                      155                      160
Glu Ala Ile Pro Thr Phe Asp Leu Gly Trp Arg Val Leu Phe Pro Ile
                      165                      170                      175
Tyr Met Val Val Ala Val Val Ala Ile Leu Leu Leu Asn Ala Thr Gln
                      180                      185                      190
Ile Thr Glu Glu Pro Glu Glu Gly Lys Pro Ser Thr Phe Gly Gln Cys
                      195                      200                      205
Leu Ala Leu Leu Gly Lys Pro Phe Ile Leu Leu Ser Phe Leu Gly Ile
                      210                      215                      220
Met Cys His Val Gly Ile Asp Val Gly Thr Asn Thr Thr Ala Pro Lys
  225                      230                      235                      240
Ile Leu Met Glu Arg Leu Gly Met Thr Leu Ala Asp Ala Gly Phe Ala
                      245                      250                      255
Thr Ser Leu Tyr Phe Ile Phe Arg Thr Ala Gly Cys Phe Leu Gly Ala
                      260                      265                      270
Phe Ile Leu Gln Lys Met Ala Ala Lys Thr Phe Phe Ala Ile Ser Val
                      275                      280                      285
Leu Cys Met Leu Ala Ala Met Phe Gly Leu Phe Val Phe Gln Asp Gln
                      290                      295                      300
Ala Met Ile Tyr Val Cys Ile Ala Leu Ile Gly Phe Gly Asn Ser Asn
  305                      310                      315                      320
Val Phe Pro Ile Ile Phe Ser Gln Ala Met Leu Tyr Met Pro Asp Lys
                      325                      330                      335
Lys Asn Glu Val Ser Gly Leu Met Ile Met Gly Leu Phe Gly Gly Thr
                      340                      345                      350
Ile Phe Pro Leu Ala Met Gly Val Ala Ser Asp Ala Val Gly Gln Ser
                      355                      360                      365
Gly Ala Val Ala Val Met Leu Val Gly Val Leu Tyr Leu Met Phe Tyr
                      370                      375                      380
Thr Trp Arg Ile Lys Lys
  385                      390

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<210> 10303

<211> 124

<212> PRT

<213> B.fragilis

<400> 10303

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Arg Asn Ser Leu Tyr Lys Ser Asn Thr Ser Met Lys Asp Tyr Lys Glu
  1                      5                      10                      15
Asn Lys Ser Asn Leu Ser Glu Thr Phe Cys Asn Glu Val Tyr Ser Val
  20                      25                      30
Val Arg Glu Ile Pro Ala Gly Ser Val Thr Thr Tyr Gly Asp Ile Ala
  35                      40                      45
Ala Leu Leu Gly Met Pro Gln Tyr Ser Arg Met Val Gly Arg Ala Leu
  50                      55                      60
Arg Gln Val Pro Ala Gly Leu Asn Leu Pro Cys His Arg Val Val Asn
  65                      70                      75                      80
Ala Ile Gly Arg Leu Val Pro Gly Trp Asp Glu Gln Arg Arg Leu Leu
                      85                      90                      95
Asp Ala Glu Gly Val Ser Phe Arg Lys Asn Gly Cys Val Asp Leu Arg
                      100                      105                      110
Leu His Arg Trp Arg Asp Asp Ser Val Leu Ala Asp
                      115                      120

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<210> 10304
 <211> 412
 <212> PRT
 <213> B.fragilis

<400> 10304

Thr	Leu	Leu	Cys	Met	Ser	Lys	Ile	Thr	Ile	Lys	Asp	Leu	Tyr	Leu	Ile
1			5						10					15	
Phe	Gly	Asn	Asp	Lys	Gln	His	Ala	Leu	Arg	Met	Leu	Lys	Glu	Glu	Lys
		20					25					30			
Ser	Lys	Ser	Glu	Ile	Leu	Lys	Ala	Thr	Gly	Cys	Thr	Val	Ala	Val	Lys
		35					40					45			
Asp	Ala	Asn	Leu	Ser	Ile	Arg	Glu	Gly	Glu	Ile	Phe	Val	Ile	Met	Gly
	50					55					60				
Leu	Ser	Gly	Ser	Gly	Lys	Ser	Thr	Leu	Leu	Arg	Cys	Ile	Asn	Arg	Leu
65					70					75				80	
Ile	Lys	Pro	Thr	Ser	Gly	Glu	Val	Ile	Ile	Asn	Gly	Arg	Asp	Ile	Ser
			85						90					95	
Asn	Val	Thr	Asp	Lys	Glu	Leu	Leu	Arg	Ile	Arg	Arg	Lys	Glu	Leu	Ala
		100						105					110		
Met	Val	Phe	Gln	His	Phe	Gly	Leu	Leu	Pro	His	Arg	Ser	Val	Leu	His
		115					120						125		
Asn	Ile	Ala	Phe	Gly	Leu	Glu	Leu	Gln	Gly	Val	Lys	Lys	Gln	Glu	Arg
	130					135					140				
Glu	Gln	Arg	Ala	Met	Glu	Ser	Met	Gln	Leu	Val	Gly	Leu	Lys	Gly	Tyr
145					150					155					160
Glu	Asn	Gln	Met	Val	Gly	Glu	Leu	Ser	Gly	Gly	Met	Gln	Gln	Arg	Val
			165						170					175	
Gly	Leu	Ala	Arg	Ala	Leu	Ala	Asn	Asp	Pro	Glu	Val	Leu	Leu	Met	Asp
		180						185				190			
Glu	Ala	Phe	Ser	Ala	Leu	Asp	Pro	Leu	Ile	Arg	Ile	Gln	Met	Gln	Asp
	195						200					205			
Glu	Leu	Leu	Thr	Leu	Gln	Ser	Lys	Met	Lys	Lys	Thr	Ile	Val	Phe	Ile
	210					215					220				
Thr	His	Asp	Leu	Asn	Glu	Ala	Ile	Lys	Leu	Gly	Asp	Arg	Ile	Ala	Ile
225				230						235					240
Met	Lys	Asp	Gly	Glu	Val	Val	Gln	Val	Gly	Thr	Ser	Glu	Glu	Ile	Leu
			245						250					255	
Thr	Glu	Pro	Ala	Asn	Ala	Tyr	Val	Glu	Arg	Phe	Val	Gln	Ser	Val	Asp
		260						265				270			
Arg	Ser	Lys	Ile	Ile	Thr	Ala	Ala	Ser	Val	Met	Val	Asp	Lys	Pro	Leu
		275					280					285			
Val	Ala	Arg	Leu	Lys	Lys	Glu	Gly	Pro	Glu	Val	Leu	Ile	Arg	Lys	Met
	290					295					300				
Leu	Glu	Arg	Asn	Leu	Thr	Val	Leu	Pro	Val	Val	Asp	Val	Asn	Asn	Val
305				310						315					320
Leu	Val	Gly	Glu	Val	Arg	Leu	Lys	Asp	Leu	Leu	Arg	Leu	Arg	Gln	Asp
			325						330					335	
Gln	Val	Lys	Ser	Ile	Glu	Ser	Val	Val	Arg	Glu	Glu	Val	His	Ser	Val
		340						345					350		
Leu	Gly	Asp	Thr	Ile	Leu	Glu	Asp	Ile	Leu	Pro	Leu	Met	Thr	Lys	Thr
		355					360					365			
Asn	Ser	Pro	Ile	Trp	Val	Val	Asn	Glu	Thr	Arg	Glu	Phe	Gln	Gly	Val
	370					375					380				
Val	Pro	Leu	Ser	Ser	Leu	Ile	Tyr	Glu	Val	Thr	Gly	Lys	Asn	Lys	Gln
385					390					395					400
Glu	Ile	Asn	Glu	Ile	Ile	Gln	Asn	Ala	Ile	Glu	Leu				
			405						410						

10304
 412
 PRT
 B.fragilis

<210> 10305
 <211> 102
 <212> PRT
 <213> B.fragilis

<400> 10305
 Ala Leu Ala Gly Ser Val Arg Ile Ser Ser Glu Val Pro Thr Cys Thr
 1 5 10 15
 Thr Ser Pro Ser Phe Met Ile Ala Ile Arg Ser Pro Asn Leu Met Ala
 20 25 30
 Ser Phe Lys Ser Trp Val Ile Asn Thr Met Val Phe Phe Ile Leu Asp
 35 40 45
 Cys Lys Val Ser Asn Ser Ser Cys Ile Cys Met Arg Ile Lys Gly Ser
 50 55 60
 Arg Ala Glu Lys Ala Ser Ser Ile Ser Ser Thr Ser Gly Ser Leu Ala
 65 70 75 80
 Asn Ala Arg Ala Lys Pro Thr Arg Cys Cys Ile Pro Pro Asp Ser Ser
 85 90 95
 Pro Thr Ile Trp Phe Ser
 100

<210> 10306
 <211> 192
 <212> PRT
 <213> B.fragilis

<400> 10306
 His Gln Ile Leu Asn Ile Met Asp Tyr Glu Lys Leu Glu Gln Leu Lys
 1 5 10 15
 Arg Leu His Asp Ser Gly Ala Leu Asn Asp Glu Glu Phe Glu Lys Glu
 20 25 30
 Lys Lys Lys Ile Leu Asp Glu Glu Ala Thr Ala Lys Pro Thr Ala Val
 35 40 45
 Leu Pro Met Gly Leu Thr Glu Asn Ala Tyr Leu Ala Leu Met Asn Phe
 50 55 60
 Ala Met Phe Ile Pro Tyr Val Gly Trp Ile Ala Pro Ile Val Phe Trp
 65 70 75 80
 Ile Met Gly Lys Glu Asn Ser Ile Leu Val Asn Arg Gln Gly Lys Tyr
 85 90 95
 Ile Leu Asn Trp Tyr Ile Ser Trp Phe Leu Tyr Gly Ile Ala Leu Thr
 100 105 110
 Val Leu Phe Val Ile Phe Met Phe Ser Gly Ile Leu Ser Ile Asn Asp
 115 120 125
 Met Asp Tyr Ala Asn Asp Gln Thr Ser Pro Leu Ala Val Leu Leu Gly
 130 135 140
 Ile Phe Gly Gly Gly Ala Gly Ile Leu Leu Leu Ile Leu Gly Ile
 145 150 155 160
 Gly Cys Phe Leu Cys Leu Leu Phe Pro Ile Ile Gly Gly Ile Lys Gly
 165 170 175
 Leu Asn Gly Lys Thr Trp Lys Tyr Pro Leu Ser Ile Pro Phe Leu Lys
 180 185 190

<210> 10307
 <211> 398
 <212> PRT
 <213> B.fragilis

<400> 10307

Leu Met Leu Met Thr Asn Leu Leu Tyr Leu Phe Asn Pro Asp Gln Asp
 1 5 10 15
 Leu Ala Leu Ala Ser Gly Glu Val Asn Tyr Met Pro Pro Ala Ser Ala
 20 25 30
 Arg Arg Met Ala Glu Glu Leu Ala Leu Leu Pro Val Trp Phe Ala Asp
 35 40 45
 Gly Pro Cys Ser Val Leu Ala Pro Ser Ala Tyr Asn Gln Ser Phe Leu
 50 55 60
 Glu Glu Met Leu Asp Leu Phe Pro Leu Pro Ala Ser Leu Arg Thr Gln
 65 70 75 80
 Ala Glu Asp Phe Ser Glu Val Arg Ser Val Val Pro Trp Gly Trp Asn
 85 90 95
 Pro Ala Leu Arg Lys Arg Leu Leu Ser Leu Gly Val Pro Asp Ala Ala
 100 105 110
 Leu Pro Ser Met Glu Asp Ile Gly Arg Leu Arg Asp Leu Ser His Arg
 115 120 125
 Leu Gln Ala Val Arg Leu Leu Ser Gly Leu Gln Val Asp Glu Val Phe
 130 135 140
 Cys Gly Glu Ser Cys Tyr Leu Thr Ala Leu Ser Asp Cys Arg Ala Phe
 145 150 155 160
 Val Glu Ser Leu Glu Arg Cys Leu Leu Lys Ala Pro Leu Ser Gly Ser
 165 170 175
 Gly Lys Gly Leu Asn Trp Cys Lys Gly Ala Phe Thr Pro Leu Ile Glu
 180 185 190
 Arg Trp Cys Ala Arg Val Ile Glu Gln Gln Gly Gly Val Val Gly Glu
 195 200 205
 Pro Ile Tyr Asn Lys Val Glu Asp Phe Ala Met Glu Phe Tyr Ser Asp
 210 215 220
 Gly Lys Gly Arg Ile Ile Phe Ala Gly Tyr Ser Leu Phe Arg Thr Asn
 225 230 235 240
 Ala Gly Gly Ala Tyr Glu Gly Asn Arg Leu Leu Pro Asp Ala Glu Ile
 245 250 255
 Glu Arg Arg Leu Ser Ala Tyr Val Pro Val Ala Ala Leu His Arg Leu
 260 265 270
 Arg Glu Glu Leu Gln Arg Arg Leu Ser Val Ser Leu Gly Thr Glu Tyr
 275 280 285
 Ala Gly Tyr Leu Gly Val Asp Met Met Ile Cys Arg Phe Ala Leu Leu
 290 295 300
 Pro Glu Phe Arg Ile His Pro Cys Val Glu Ile Asn Leu Arg Met Asn
 305 310 315 320
 Met Gly Leu Val Ser Arg Met Leu Tyr Asp Arg Tyr Val Arg Pro Gly
 325 330 335
 Ala Gly Gly Thr Phe Arg Ile Ser Tyr His Pro Ser Asp Gly Gln Ala
 340 345 350
 Leu Gln Glu His Asp Ala Met Thr Val Ala His Pro Leu His Thr Arg
 355 360 365
 Asn Gly Arg Val Val Lys Gly Tyr Leu Pro Leu Val Pro Val Arg Lys
 370 375 380
 Ser Ser Arg Tyr Arg Ala Tyr Ile Leu Val Glu Thr Gly Gly
 385 390 395

<210> 10308

<211> 1193

<212> PRT

<213> B.fragilis

<400> 10308

Ile Thr Tyr Leu Asn Ile Ile Phe Ile Met Thr Lys Gln Lys Lys Phe
 1 5 10 15

Ile	Thr	Cys	Asp	Gly	Asn	Gln	Ala	Ala	His	Ile	Ser	Tyr	Met	Phe	
			20					25				30			
Ser	Glu	Val	Ala	Ala	Ile	Tyr	Pro	Ile	Thr	Pro	Ser	Ser	Thr	Met	Ala
		35					40					45			
Glu	Tyr	Val	Asp	Glu	Trp	Ala	Ala	Ala	Gly	Arg	Lys	Asn	Ile	Phe	Gly
		50				55					60				
Glu	Thr	Val	Leu	Val	Gln	Glu	Met	Gln	Ser	Glu	Gly	Gly	Ala	Ala	Gly
65					70					75					80
Ala	Val	His	Gly	Ser	Leu	Gln	Ala	Gly	Ala	Leu	Thr	Thr	Thr	Tyr	Thr
			85						90					95	
Ala	Ser	Gln	Gly	Leu	Leu	Leu	Met	Ile	Pro	Asn	Met	Tyr	Lys	Ile	Ala
			100					105					110		
Gly	Glu	Phe	Leu	Pro	Cys	Val	Phe	His	Val	Ser	Ala	Arg	Thr	Leu	Ala
		115					120					125			
Ser	His	Ala	Leu	Cys	Ile	Phe	Gly	Asp	His	Gln	Asp	Val	Met	Ser	Ala
		130				135					140				
Arg	Gln	Thr	Gly	Phe	Ala	Met	Leu	Ala	Glu	Gly	Ser	Val	Gln	Glu	Val
145					150					155					160
Met	Asp	Leu	Ala	Gly	Val	Ala	His	Leu	Ala	Thr	Ile	Lys	Ala	Arg	Val
			165						170					175	
Pro	Phe	Met	Asn	Phe	Phe	Asp	Gly	Phe	Arg	Thr	Ser	His	Glu	Ile	Gln
			180					185					190		
Lys	Ile	Glu	Met	Leu	Glu	Asn	Glu	Asp	Leu	Ala	Pro	Leu	Val	Asp	Gln
		195					200					205			
Glu	Ala	Leu	Ala	Glu	Phe	Arg	Ala	Arg	Ala	Leu	Asn	Pro	Met	Asn	Pro
		210				215					220				
Val	Ala	Arg	Gly	Met	Ala	Glu	Asn	Pro	Asp	His	Phe	Phe	Gln	His	Arg
225					230					235					240
Glu	Ser	Cys	Asn	Asn	Tyr	Tyr	Glu	Ala	Val	Pro	Ala	Ile	Val	Glu	Glu
			245						250					255	
Tyr	Met	Asn	Glu	Ile	Ser	Lys	Ile	Thr	Gly	Arg	Lys	Tyr	Gly	Leu	Phe
			260					265					270		
Asp	Tyr	Tyr	Gly	Ala	Glu	Asp	Ala	Glu	Arg	Val	Ile	Ile	Ala	Met	Gly
		275					280					285			
Ser	Val	Thr	Glu	Ala	Ala	Arg	Glu	Ala	Ile	Asp	Tyr	Leu	Thr	Ser	Gln
		290				295					300				
Gly	Glu	Lys	Val	Gly	Leu	Val	Ala	Val	His	Leu	Tyr	Arg	Pro	Phe	Ser
305					310					315					320
Ala	Lys	His	Phe	Leu	Ala	Ala	Val	Pro	Lys	Thr	Ala	Lys	Thr	Ile	Ala
			325						330					335	
Val	Leu	Asp	Arg	Thr	Lys	Glu	Pro	Gly	Ala	Asn	Gly	Glu	Pro	Leu	Tyr
			340					345					350		
Leu	Asp	Val	Lys	Asp	Cys	Phe	Tyr	Gly	Ala	Glu	Asn	Ala	Pro	Val	Ile
		355					360					365			
Val	Gly	Gly	Arg	Tyr	Gly	Le									

										485								490								495																						
Val	Ala	Cys	His	Val	Gln	Ala	Tyr	Leu	His	Met	Tyr	Asp	Val	Thr	Arg																																	
																500											505											510										
Gly	Leu	Arg	Lys	Asn	Gly	Ser	Phe	Leu	Leu	Asn	Thr	Ile	Trp	Glu	Gly																																	
																515											520											525										
Glu	Glu	Leu	Ala	Lys	Asn	Leu	Pro	Asn	Lys	Val	Lys	Lys	Tyr	Phe	Ala																																	
																530											535											540										
Gln	Asn	Asn	Ile	Ser	Val	Tyr	Tyr	Ile	Asn	Ala	Thr	Gln	Ile	Ala	Gln																																	
545																550											555											560										
Glu	Ile	Gly	Leu	Gly	Asn	Arg	Thr	Asn	Thr	Ile	Leu	Gln	Ser	Ala	Phe																																	
																565											570											575										
Phe	Arg	Ile	Thr	Gly	Val	Ile	Pro	Val	Asp	Gln	Ala	Val	Glu	Gln	Met																																	
																580											585											590										
Lys	Lys	Phe	Ile	Val	Lys	Ser	Tyr	Gly	Lys	Lys	Gly	Glu	Asp	Val	Val																																	
																595											600											605										
Asn	Lys	Asn	Tyr	Ala	Ala	Val	Asp	Arg	Gly	Gly	Glu	Tyr	Lys	Thr	Leu																																	
																610											615											620										
Thr	Val	Asp	Pro	Ala	Trp	Ala	Asn	Leu	Pro	Asp	Asp	Ala	Lys	Val	Glu																																	
625																630											635											640										
Asn	Asn	Asp	Pro	Ala	Phe	Ile	Asn	Glu	Val	Val	Arg	Pro	Ile	Asn	Ala																																	
																645											650											655										
Gln	Asp	Gly	Asp	Leu	Leu	Pro	Val	Ser	Ala	Phe	Lys	Gly	Ile	Glu	Asp																																	
																660											665											670										
Gly	Thr	Trp	Tyr	Gln	Gly	Thr	Ser	Lys	Tyr	Glu	Lys	Arg	Gly	Val	Ala																																	
																675											680											685										
Ala	Phe	Val	Pro	Glu	Trp	Asn	Ala	Glu	Asn	Cys	Ile	Gln	Cys	Asn	Lys																																	
																690											695											700										
Cys	Ala	Tyr	Val	Cys	Pro	His	Ala	Ser	Ile	Arg	Pro	Phe	Val	Leu	Asp																																	
705																710											715											720										
Ala	Glu	Glu	Gln	Lys	Gly	Ala	Asn	Phe	Glu	Met	Leu	Lys	Ala	Val	Gly																																	
																725											730											735										
Lys	Gln	Phe	Asp	Gly	Met	Thr	Phe	Arg	Ile	Gln	Val	Asp	Val	Leu	Asp																																	
																740											745											750										
Cys	Leu	Gly	Cys	Gly	Asn	Cys	Ala	Asp	Ile	Cys	Pro	Gly	Asn	Pro	Lys																																	
																755											760											765										
Lys	Gly	Gly	Lys	Ala	Leu	Thr	Met	Lys	His	Leu	Glu	Ser	Gln	Leu	Ala																																	
																770											775											780										
Gln	Ala	Asp	Asn	Trp	Thr	Tyr	Cys	Ala	Asp	Asn	Val	Lys	Ser	Lys	Gln																																	
785																790											795											800										
His	Leu	Val	Asp	Ile	Lys	Ala	Asn	Val	Lys	Asn	Ser	Gln	Phe	Ala	Thr																																	
																805											810											815										
Pro	Leu	Phe	Glu	Phe	Ser	Gly	Ala	Cys	Ser	Gly	Cys	Gly	Glu	Thr	Pro																																	
																820											825											830										
Tyr	Val	Lys	Leu	Ile	Ser	Gln	Leu	Tyr	Gly	Asp	Arg	Glu	Met	Val	Ala																																	
																835											840											845										
Asn	Ala	Thr	Gly	Cys	Ser	Ser	Ile	Tyr	Ser	Gly	Ser	Val	Pro	Ser	Thr																																	
																850											855											860										
Pro	Tyr	Thr	Thr	Asn																																												

Glu Leu Lys Gly Leu Thr Gln Tyr Leu Val Lys Arg Ser Gln Trp Ile
 965 970 975
 Ile Gly Gly Asp Gly Ala Ser Tyr Asp Ile Gly Tyr Gly Gly Leu Asp
 980 985 990
 His Val Ile Ala Ser Gly Lys Asp Val Asn Ile Leu Val Leu Asp Thr
 995 1000 1005
 Glu Val Tyr Ser Asn Thr Gly Gly Gln Ser Ser Lys Ala Thr Pro Val
 1010 1015 1020
 Gly Ala Ile Ala Lys Phe Ala Ala Ser Gly Lys Arg Val Arg Lys Lys
 1025 1030 1035 1040
 Asp Leu Gly Leu Met Ala Thr Thr Tyr Gly Tyr Val Tyr Val Ala Gln
 1045 1050 1055
 Ile Ala Met Gly Ala Asp Gln Ala Gln Thr Leu Lys Ala Ile Arg Glu
 1060 1065 1070
 Ala Glu Ala Tyr Pro Gly Pro Ser Leu Ile Ile Ala Tyr Ala Pro Cys
 1075 1080 1085
 Ile Asn His Gly Leu Lys Ala Gly Met Gly Lys Ser Gln Glu Glu Glu
 1090 1095 1100
 Glu Lys Ala Val Lys Cys Gly Tyr Trp His Leu Trp Arg Tyr Asn Pro
 1105 1110 1115 1120
 Ala Leu Glu Ala Glu Gly Lys Asn Pro Phe Thr Leu Asp Ser Lys Glu
 1125 1130 1135
 Pro Asn Trp Asp Asp Phe Lys Gly Phe Leu Lys Gly Glu Val Arg Tyr
 1140 1145 1150
 Ala Ser Val Met Lys Gln Tyr Pro Ala Glu Ala Glu Glu Leu Phe Gln
 1155 1160 1165
 Ala Ala Glu Asp Asn Ala Lys Trp Arg Tyr Asn Asn Tyr Lys Arg Leu
 1170 1175 1180
 Ala Asn Gln Ala Trp Gly Ala Ala Glu
 1185 1190

<210> 10309

<211> 281

<212> PRT

<213> B.fragilis

<400> 10309

Gln Leu Ser Leu Arg Met Leu Arg Pro Asn Arg Ala Tyr Thr Leu Val
 1 5 10 15
 Ala Asn Thr Gly Lys Gln Ile Arg Tyr Gly Glu Leu Phe Asn Arg Leu
 20 25 30
 Ser Gly Tyr Asp Val Ile Phe Leu Gly Glu Leu His Asn Cys Pro Ile
 35 40 45
 Thr His Trp Leu Glu Phe Glu Ile Thr Arg Ser Ile Tyr Asn Ile His
 50 55 60
 Lys Asp Gln Leu Met Leu Gly Ala Glu Met Phe Glu Ser Asp Asn Gln
 65 70 75 80
 Leu Ile Phe Asp Glu Tyr Met Gln Gln Lys Ile Ser Tyr Asp Arg Phe
 85 90 95
 Glu Ala Glu Ala Arg Leu Trp Asp Asn Tyr Arg Thr Asp Tyr Tyr Pro
 100 105 110
 Val Val Phe Phe Ala Lys Glu His His Ile Pro Phe Ile Ala Thr Asn
 115 120 125
 Ile Pro Arg Arg Tyr Ala Asn Ile Val Lys Asn Lys Gly Phe Glu Ala
 130 135 140
 Leu Asp Ser Leu Ser Glu Glu Ala Lys Arg Tyr Ile Ala Pro Leu Pro
 145 150 155 160
 Ile Asp Phe Glu Tyr Asp Glu Ala Gln Ser Ala Ala Ala Phe Ser Met
 165 170 175

Met Asn Met Met Gly Gly Arg Arg Ala Gly Asp Asn Arg Lys Leu Ala
 180 185 190
 Gln Ala Gln Ala Ile Lys Asp Ala Thr Met Gly Trp Phe Ile Ala Arg
 195 200 205
 Asn Ile Lys Asn Lys Phe Leu His Ile Asn Gly Ser Tyr His Ser Asn
 210 215 220
 Arg Gln Gly Gly Ile Ile Pro Tyr Leu Leu Arg Tyr Arg Pro Asn Thr
 225 230 235 240
 Ser Ile Val Thr Val Thr Ser Val Arg Gln Glu Ser Ile Arg Lys Arg
 245 250 255
 Leu His Asn Gly Asp Gly Arg Phe Asn Ser Pro Arg Asp Ser Ser Ser
 260 265 270
 Leu Val Lys Thr Lys Thr Gly Thr Tyr
 275 280

<210> 10310

<211> 280

<212> PRT

<213> B.fragilis

<400> 10310

Ser Ser Leu Arg His Arg Gly Ser Phe Gln Pro Arg Gly Glu Asp Ser
 1 5 10 15
 Asp Thr Lys Asn Pro Ala Val Ala Ala Gly Thr Thr Leu Leu Phe
 20 25 30
 Gly Val Pro Asn Ile Ile Ser Glu Gln Lys Gln Thr Gln Asp Leu Thr
 35 40 45
 Gly Tyr Arg Pro Arg Lys Ala His Thr Tyr Asp Tyr Ala Gln Thr Lys
 50 55 60
 Gly Asp Glu Leu Leu Gly Thr Asn Ala Cys Val Val Phe Arg Ser Ala
 65 70 75 80
 Glu Ala Asn Leu Asn Tyr Met Glu Ala Cys Tyr Glu Lys Thr Gly Ser
 85 90 95
 Leu Asp Ala Lys Ala Gln Lys Tyr Trp Lys Ala Leu Arg Thr Arg Ala
 100 105 110
 Gly Val Asp Asp Tyr Ala Lys Thr Ile Ala Ala Thr Asp Leu Ser
 115 120 125
 Lys Glu Asn Asp Leu Ala Val Tyr Ser Gly Ser Lys Met Val Asp Val
 130 135 140
 Thr Leu Tyr Asn Ile Arg Arg Glu Arg Arg Cys Glu Phe Ile Gly Glu
 145 150 155 160
 Gly Met Arg Trp Asp Asp Leu Lys Arg Trp Arg Ser Trp Asp Gln Leu
 165 170 175
 Leu Thr Lys Pro Tyr Ile Ile Glu Gly Ile Asn Phe Trp Asp Ala Ala
 180 185 190
 Tyr Lys Asp His Lys Asp Ile Lys Asp Asp Gly Thr Leu Asp Ala Asn
 195 200 205
 Val Ser Pro Lys Ser Asp Ser Lys Tyr Leu Arg Pro Leu Arg Arg Thr
 210 215 220
 Ser Ile Asn Asn Glu Leu Tyr Asp Gly Leu Thr Trp Arg Lys Ala Phe
 225 230 235 240
 Tyr Leu Asp Pro Ile Gly Ile Glu Asp Met Ser Leu Thr Ala Thr Asn
 245 250 255
 Pro Glu Asp Ile Asn Thr Thr Gln Leu Tyr Gln Asn Pro Tyr Trp Pro
 260 265 270
 Met Thr Ala Gly Lys Ala Leu Glu
 275 280

<210> 10311

<400> 10311

1				5					10						15	
Glu	Met	Lys	Lys	Gln	Leu	Arg	Ser	Ser	Phe	Ser	Thr	Gln	Gly	Arg	Arg	
			20					25					30			
Met	Ala	Gly	Ala	Arg	Ala	Leu	Trp	Ala	Ala	Asn	Gly	Met	Lys	Lys	Glu	
		35					40					45				
Gln	Leu	Gly	Lys	Pro	Ile	Ile	Ala	Ile	Val	Asn	Ser	Phe	Thr	Gln	Phe	
		50				55					60					
Val	Pro	Gly	His	Val	His	Leu	His	Glu	Ile	Gly	Gln	Leu	Val	Lys	Lys	
65					70					75					80	
Glu	Ile	Glu	Lys	Leu	Gly	Cys	Phe	Ala	Glu	Glu	Phe	Asn	Thr	Ile	Ala	
			85					90						95		
Ile	Asp	Asp	Gly	Ile	Ala	Met	Gly	His	Asp	Gly	Met	Leu	Tyr	Ser	Leu	
			100					105					110			
Pro	Ser	Arg	Asp	Ile	Ile	Ala	Asp	Ser	Val	Glu	Tyr	Met	Val	Asn	Ala	
		115					120					125				
His	Lys	Ala	Asp	Ala	Met	Val	Cys	Ile	Ser	Asn	Cys	Asp	Lys	Ile	Thr	
		130				135					140					
Pro	Gly	Met	Leu	Met	Ala	Ala	Met	Arg	Leu	Asn	Ile	Pro	Thr	Val	Phe	
145					150					155					160	
Val	Ser	Gly	Gly	Pro	Met	Glu	Ala	Gly	Glu	Leu	Asp	Gly	Gln	His	Leu	
			165						170					175		
Asp	Leu	Ile	Asp	Ala	Met	Ile	Lys	Ser	Ala	Asp	Glu	Ser	Val	Ser	Asp	
			180					185					190			
Glu	Glu	Val	Ser	Lys	Ile	Glu	Asn	Arg	Ala	Cys	Pro	Thr	Cys	Gly	Cys	
		195					200					205				
Cys	Ser	Gly	Met	Phe	Thr	Ala	Asn	Ser	Met	Asn	Cys	Leu	Asn	Glu	Ala	
		210				215					220					
Ile	Gly	Leu	Ala	Leu	Pro	Gly	Asn	Gly	Thr	Ile	Val	Ala	Thr	His	Ala	
225					230					235					240	
Asn	Arg	Thr	Gln	Leu	Phe	Lys	Asp	Ala	Ala	Lys	Leu	Ile	Val	Glu	Asn	
			245						250					255		
Thr	Tyr	Lys	Tyr	Tyr	Arg	Asp	Gly	Asp	Glu	Ser	Val	Leu	Pro	Arg	Ser	
		260					265					270				
Ile	Ala	Thr	Arg	Glu	Ala	Phe	Leu	Asn	Ala	Met	Thr	Leu	Asp	Ile	Ala	
		275					280					285				
Met	Gly	Gly	Ser	Thr	Asn	Thr	Val	Leu	His	Leu	Leu	Ala	Ile	Ala	His	
		290				295					300					
Glu	Ala	Glu	Ala	Asp	Phe	Lys	Met	Asp	Asp	Ile	Asp	Met	Leu	Ser	Arg	
305					310					315					320	
Lys	Ser	Pro	Cys	Leu	Cys	Lys	Val	Ala	Pro	Asn	Thr	Gln	Lys	Tyr	His	
			325						330					335		
Ile	Gln	Asp	Val	Asn	Arg	Ala	Gly	Gly	Ile	Met	Gly	Ile	Met	Gly	Gln	
			340					345								

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<210> 10312
<211> 569
<212> PRT
<213> B.fragilis
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Tyr 1	Met	Ser	Lys	Asp 5	Ile	Ile	Ser	Gly	Gly 10	Glu	Ala	Leu	Met	Arg 15	Ser
Leu	Glu	Tyr	His 20	Gly	Val	Lys	Thr	Ile 25	Phe	Gly	Tyr	Pro	Gly 30	Gly	Ser
Ile	Met	Pro 35	Val	Phe	Asp	Ala	Leu 40	Tyr	Asp	His	Arg	Glu 45	Thr	Leu	Asn
His	Ile 50	Leu	Val	Arg	His	Glu 55	Gln	Gly	Ala	Ala	His 60	Ala	Ala	Gln	Gly
Phe 65	Ala	Arg	Ala	Ser	Gly 70	Glu	Val	Gly	Val	Cys 75	Leu	Val	Thr	Ser	Gly 80
Pro	Gly	Ala	Thr	Asn 85	Thr	Ile	Thr	Gly	Ile 90	Ala	Asp	Ala	Met	Ile 95	Asp
Ser	Thr	Pro 100	Ile	Val	Val	Ile	Ala	Gly 105	Gln	Val	Gly	Thr	Ala 110	Phe	Leu
Gly	Thr	Asp 115	Ala	Phe	Gln	Glu	Val 120	Asp	Leu	Val	Gly	Ile 125	Thr	Gln	Pro
Ile 130	Thr	Lys	Trp	Ser	Tyr	Gln 135	Ile	Arg	Arg	Ala	Glu 140	Asp	Val	Pro	Trp
Ala 145	Val	Ala	Arg	Ala	Phe 150	Tyr	Ile	Ala	Lys	Ser	Gly 155	Arg	Pro	Gly	Pro 160
Val	Val	Leu	Asp	Phe 165	Ala	Lys	Asn	Ala	Gln 170	Val	Glu	Lys	Ala	Glu 175	Tyr
Met	Pro	Ala 180	Lys	Leu	Asp	Phe	Ile	Arg 185	Ser	Tyr	Val	Pro 190	Val	Pro	Glu
Thr	Asp	Pro 195	Glu	Ala	Val	Lys	Ala 200	Ala	Ala	Glu	Leu	Ile 205	Asn	Gly	Ala
Glu	Arg 210	Pro	Leu	Val	Leu	Val 215	Gly	Gln	Gly	Val	Glu 220	Leu	Gly	Asn	Ala

Gln Gln Glu Leu Arg Ala Phe Ile Glu Lys Ala Asp Met Pro Ala Gly
 225 230 235 240
 Cys Thr Leu Leu Gly Leu Ser Ala Leu Pro Thr Glu His Pro Leu Asn
 245 250 255
 Lys Gly Met Leu Gly Met His Gly Asn Leu Gly Pro Asn Met Asn Thr
 260 265 270
 Asn Lys Cys Asp Val Leu Ile Ala Val Gly Met Arg Phe Asp Asp Arg
 275 280 285
 Val Thr Gly Asn Leu Ala Thr Tyr Ala Lys Gln Ala Lys Val Ile His
 290 295 300
 Phe Asp Ile Asp Pro Ala Glu Ile Asn Lys Asn Val His Ala Asp Val
 305 310 315 320
 Ala Gly Leu Gly Asn Cys Lys Glu Thr Leu Ser Ala Val Thr Ala Leu
 325 330 335
 Leu Gln Pro Asn Glu His Lys Glu Trp Leu Asp Ser Phe Leu Pro Tyr
 340 345 350
 Glu Gln Val Glu Glu Glu Lys Val Ile Arg Pro Glu Leu His Pro Met
 355 360 365
 Gly Asp Thr Leu Ser Met Gly Glu Val Val Arg Ala Val Ser Asp Ala
 370 375 380
 Thr Asn His Glu Ala Ile Leu Val Thr Asp Val Gly Gln Asn Gln Met
 385 390 395 400
 Met Ser Ala Arg Tyr Phe Lys Tyr Ser Lys Asp Arg Ser Met Ile Thr
 405 410 415
 Ser Gly Gly Leu Gly Thr Met Gly Phe Gly Leu Pro Ala Ala Ile Gly
 420 425 430
 Ala Thr Phe Gly Arg Pro Asp Arg Thr Val Cys Val Phe Met Gly Asp
 435 440 445
 Gly Gly Leu Gln Met Asn Ile Gln Glu Leu Gly Thr Ile Met Glu Gln
 450 455 460
 Lys Ala Pro Val Lys Ile Ile Val Ser Asn Asn Asn Phe Leu Gly Asn
 465 470 475 480
 Val Arg Gln Trp Gln Ala Met Phe Phe Asn Arg Lys Tyr Ser Phe Thr
 485 490 495
 Pro Met Leu Asn Pro Asp Tyr Ile Lys Ile Ala Ser Ala Tyr Asp Ile
 500 505 510
 Pro Ala Lys Arg Val Phe Thr Arg Glu Glu Leu Ala Asp Ala Ile Asp
 515 520 525
 Glu Met Ile Ala Thr Asp Gly Pro Phe Leu Leu Glu Ala Cys Val Ile
 530 535 540
 Glu Lys Gly Asn Val Leu Pro Met Thr Pro Pro Gly Gly Ser Phe Asn
 545 550 555 560
 Pro Met Leu Val Gly Met Leu Ile Ser
 565

<210> 10313

<211> 235

<212> PRT

<213> B.fragilis

<400> 10313

Asp Gly Ser Arg Tyr Val Met Ala Ala Asp Gly Ala Asp Gly Leu Val
 1 5 10 15
 Asn Gly Thr Val Cys Gly Leu Lys Ala Ser Leu Ala Val Asp Val Gln
 20 25 30
 Gly Tyr Ala Tyr Arg Val Val Lys Ile Gly Ser Leu Tyr Trp Met Gly
 35 40 45
 Glu Asn Leu Lys Thr Thr Gln Phe Asn Asp Gly Thr Pro Ile Pro Thr
 50 55 60

Gly Phe Ala Thr Ser Met Asp Trp Gly Ile Gln Cys Gly Lys Gly Leu
 65 70 75 80
 Pro Ala Cys Gln Val Asp Arg Ala Val Asn Ala Asn Ala Pro Gly Ala
 85 90 95
 Met Gln Tyr Arg Asn Leu Tyr Gly Val Leu Tyr Asn Gln Phe Ala Met
 100 105 110
 Lys Gly Asn Ile Ala Pro Gln Gly Trp His Val Pro Ser Lys Ala Glu
 115 120 125
 Leu Gln Ala Leu Val Asp Phe Val Gly Ala Asp Ala Arg Lys Leu Lys
 130 135 140
 Ser Thr Ala Val Gly Lys Gly Ile Gly Asn Trp Leu Glu Asp Thr Gly
 145 150 155 160
 Ile Glu Ala Asn Asn Leu Thr Gly Phe Thr Ala Leu Pro Ala Asn Thr
 165 170 175
 Val Asn Gly Gly Asn Gly Ser Thr Gly Ala Gln Glu Thr Thr Gly Gln
 180 185 190
 Trp Trp Ser Thr Glu Thr Ser Tyr Arg Ile Arg Met Ser Tyr Lys Ser
 195 200 205
 Asn Ser Val Glu Leu Leu Thr Ser Gly Asn Ala Leu Ala Gly Glu Gly
 210 215 220
 Asn Ser Ile Arg Cys Val Arg Asp Ala Asn Tyr
 225 230 235

<210> 10314

<211> 80

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (80)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10314

Pro Asn Val Gly Trp Asn Ala Asn Lys Leu Gly Ile Met Asp Lys Thr
 1 5 10 15
 Leu Cys Leu Ser His Gly Ala Trp Lys Asp Pro Pro Leu Ala Leu Ser
 20 25 30
 Met Ala Ile Ala Cys Phe Trp Cys Glu Asn Trp Tyr Ser Val His Asn
 35 40 45
 Ser His Pro Ile Ile Thr Asn Ser Glu Asn Ile Lys Met Tyr Lys Pro
 50 55 60
 Cys Gly Cys Pro Asn Gly Val Asn Pro Thr Leu Thr Ile Ile Cys Xaa
 65 70 75 80

<210> 10315

<211> 718

<212> PRT

<213> B.fragilis

<400> 10315

Leu Leu Ala Met Arg Trp Arg Val Lys Val Thr Ala Phe Val Val Ser
 1 5 10 15
 Gly Met Gln Ile Ile Asn Leu Thr Leu Met Asn Met Asn His Ile Ile
 20 25 30
 Lys Leu Leu Phe Leu Cys Leu Phe Phe Ala Thr Ala Cys Ser Gln Glu
 35 40 45
 Glu Met Asn Glu Val Leu Lys Asn His Ala Glu Met Glu Gly Gln Val
 50 55 60

Asn	Ser	Ile	Glu	Glu	Leu	Cys	Lys	Asn	Met	Asn	Arg	Asp	Ile	Val	Ala
65					70					75					80
Leu	Lys	Leu	Ile	Ile	Asn	Ser	Ser	Glu	Ser	Gly	Asp	Tyr	Ile	Thr	Gly
				85					90					95	
Phe	Lys	Glu	Leu	Ala	Asp	Gly	Ser	Gly	Tyr	Thr	Ile	Ser	Phe	Phe	Lys
				100				105					110		
Ser	Gly	Thr	Ile	Val	Ile	Lys	Asn	Gly	Glu	Lys	Gly	Asp	Asp	Gly	Lys
				115			120					125			
Lys	Gly	Glu	Asp	Gly	Gln	Asp	Gly	Gln	Asn	Gly	Gln	Asn	Gly	Thr	Asp
						135					140				
Gly	Lys	Asp	Gly	Gln	Asp	Gly	Thr	Asp	Gly	Lys	Asp	Gly	Gln	Asp	Gly
145					150					155					160
Ile	Asp	Gly	Gln	Asp	Gly	Gln	Asp	Gly	Thr	Asp	Gly	Lys	Asp	Gly	Gln
				165					170					175	
Asp	Gly	Thr	Asp	Gly	Lys	Asp	Gly	Gln	Asp	Gly	Thr	Asp	Gly	Lys	Asp
				180				185					190		
Gly	Gln	Asp	Gly	Thr	Asp	Gly	Thr	Asp	Gly	Pro	Glu	Gly	Asp	Lys	Gly
				195			200					205			
Gln	Asn	Gly	Thr	Ala	Pro	Val	Val	Thr	Met	Lys	Met	Asp	Thr	Asp	Gly
						215					220				
His	Leu	Tyr	Trp	Ala	Ile	Lys	Asn	Ala	Asp	Gly	Thr	Ser	Ser	Phe	Leu
225					230					235					240
Leu	Asp	Asn	Asn	Gly	Gln	Lys	Val	Arg	Ala	Ser	Gly	Thr	Asp	Gly	Ile
				245					250					255	
Val	Pro	Val	Ile	Gly	Val	Asn	Ala	Ala	Gly	Tyr	Trp	Thr	Leu	Asp	Tyr
				260				265					270		
Gly	Ser	Gly	Pro	Val	Glu	Leu	Lys	Asp	Ala	Ala	Gly	Asn	Pro	Met	Lys
				275			280					285			
Ala	Lys	Gly	Ala	Ser	Gly	Asp	Pro	Met	Phe	Arg	Lys	Val	Val	Ser	Glu
						295					300				
Asp	Gly	Tyr	Ile	Val	Phe	Tyr	Leu	Thr	Asp	Gly	Thr	Ile	Phe	Lys	Val
305					310					315					320
Pro	Glu	Trp	Gly	Gly	Ala	Gln	Val	Glu	Leu	Ala	Ala	Ser	Gly	Val	Thr
				325					330					335	
Tyr	Phe	His	Arg	Ser	Glu	Ser	Leu	Thr	Phe	Thr	Phe	Thr	Cys	Ser	Gly
				340				345					350		
Val	Asn	Lys	Ser	Ile	Ala	Pro	Val	Cys	Thr	Ala	Pro	Val	Gly	Trp	Thr
				355			360					365			
Val	Thr	Ala	Gln	Tyr	Thr	Ser	Asp	Thr	Thr	Gly	Glu	Met	Thr	Val	Ile
						375				380					
Ala	Pro	Asp	Lys	Ser	Ser	Ala	Asp	Gly	Ala	Leu	Ser	Gly	Thr	Ala	Ile
385					390					395					400
Leu	Glu	Leu	Thr	Ala	Lys	Asp	Gly	Lys	Lys	Leu	Ser	Ala	Thr	Leu	Gly
				405					410					415	
Val	Thr	Leu	Leu	Leu											

530	535	540
Val Met Lys Ile Gly Thr Gln Tyr Trp Met Ala Asp Asn Leu Arg Thr		
545	550	555
Ile Thr Asn Ser Ala Gly Val Ile Ser Ser Glu Trp Arg Lys Asp Ala		
565	570	575
Asn Pro Arg Tyr Ala Val Tyr Gly Phe Pro Ala Gly Ile Thr Glu Asp		
580	585	590
Ser Arg Thr Ile Arg Asn Gln Tyr Gly Leu Leu Tyr Asn Ala Gly Val		
595	600	605
Phe Ser Gly Ser Thr Ser Leu Val Thr Glu Gly Trp Lys Ile Pro Asn		
610	615	620
His Leu Gly Asp Trp Asp Lys Leu Arg Asn Phe Leu Gly Gly Asp Ser		
625	630	635
Lys Val Ala Glu Ala Leu Ser Ile Ala Gly Phe Val Gly Lys Pro Gly		
645	650	655
Gly Arg Arg Asn Ala Asp Glu Pro Phe Ala Phe Gln Glu Lys Asp Glu		
660	665	670
Val Gly Tyr Trp Trp Phe Ser Ser Val Asp Gly His Asn Cys Trp Ala		
675	680	685
Leu Ser Ile Asn Pro Ser Asn Val Ser Val Pro Gln Ser Thr Asn Thr		
690	695	700
Tyr Ser Arg Gly Tyr Gly Phe Ser Ile Arg Phe Ile Arg Gln		
705	710	715

<210> 10316

<211> 397

<212> PRT

<213> B.fragilis

<400> 10316

Leu Ile Ile Val Asn Met Lys Asn Ile Ile Gly Ile Leu Gly Val Phe		
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Ile Leu Ala Ile Ser Cys Ser Gly Gly Lys Lys Glu Ser Ala Asp Ala		
20	25	30
Gly Leu Glu Leu Thr Glu Asp Ser Val Val Tyr Leu Leu Ala Asp Asn		
35	40	45
Val Thr Leu Gly Ile Lys Ala Leu Phe Pro Phe Ile Asp Lys Asp Gly		
50	55	60
His Glu Tyr Leu Thr Phe Gln Asn Gln Leu Glu Pro Glu Ile Cys Val		
65	70	75
Tyr Asp Leu Gln Ser Gly Glu Phe Val Lys Ser Ile Phe Phe Asp Arg		
85	90	95
Glu Gly Ala Asn Gly Val Gly Met Phe Gly Gly Tyr His Ile Ile Asp		
100	105	110
Phe Asp Glu Ile Tyr Leu Pro Ser Leu Gln Gln Ser Lys Val Phe Val		
115	120	125
Met Glu Glu Ser Gly Lys Lys Arg Glu Ile Ile Thr Glu Lys Thr		
130	135	140
Asp Asp Gly Ile Pro Leu Leu Pro Phe Gly Ala Ile Thr Phe Ala Tyr		
145	150	155
Arg Pro Ile Tyr Phe Asn Asn Arg Lys Met Tyr Ile Pro Gln Thr Ile		
165	170	175
Asn Met Arg Leu Gly Asn Lys Val Met Glu Lys Ser Pro Val Tyr Val		
180	185	190
Val Val Asp Thr Val Lys Asn Val Leu Ser Pro Phe Pro Ile Lys Phe		
195	200	205
Pro Pro Ile Met Ser Ser Asp Asp Val Thr Lys Pro Ser Leu Gly Asn		
210	215	220
Glu Leu Ser Tyr Ser Cys Cys Leu Asn Asp Lys Asp Gln Phe Val Phe		

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<210> 10317
<211> 305
<212> PRT
<213> B.fragilis
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<400> 10317																
Arg	Tyr	Ser	Lys	Thr	Leu	Lys	Thr	Leu	Leu	Tyr	Ile	Leu	Val	Phe	Ser	
1				5					10					15		
Leu	Cys	Tyr	Thr	Asn	Ala	Tyr	Cys	Gln	Ser	Ile	Pro	Arg	Glu	Val	Thr	
			20					25					30			
Leu	Asp	Glu	Val	Ile	Asn	Arg	Leu	Ser	Leu	Glu	Ser	Ser	Ser	Ala	Ly	
			35				40					45				
Ile	Glu	Leu	Leu	Asn	Phe	Gln	Asn	Asp	Leu	Leu	Arg	Tyr	Glu	Asn	Tyr	
	50					55					60					
Lys	Lys	Ser	Phe	Leu	Pro	Ala	Phe	Val	Leu	Asn	Phe	Asn	Pro	Ile	Asn	
65					70					75					80	
Phe	Asn	Arg	Ser	Leu	Arg	Leu	Leu	Gln	Gln	Pro	Ile	Asp	Gly	Ser	Tyr	
				85					90					95		
Ser	Tyr	Val	Glu	Asp	Asn	Ser	Asn	Asn	Thr	Asn	Phe	Gly	Thr	Thr	Val	
			100					105					110			
Arg	Gln	Lys	Ile	Ser	Ile	Thr	Gly	Gly	Glu	Leu	Ser	Ile	Gly	Ser	Asn	
			115					120					125			
Ile	Asn	Tyr	Leu	Asn	Glu	Phe	Ser	Arg	Lys	Gln	Asn	Ser	Phe	Ser	Thr	
	130					135					140					
Asn	Pro	Phe	Phe	Ile	Ser	Tyr	Ser	Gln	Gln	Leu	Trp	Gly	Gly	Gly	Lys	
145					150					155					160	
Leu	Gln	Arg	Leu	Glu	Asn	Lys	Ile	Glu	Arg	Ala	Lys	Asn	Glu	Val	Ala	
				165					170					175		
Val	Lys	Gln	Tyr	Cys	Ser	Asn	Ile	Ala	Gln	Ile	Gln	Gln	Gln	Ala	Leu	
			180					185					190			
Thr	Leu	Tyr	Leu	Ser	Ala	Ile	Leu	Ser	Lys	Met	Asp	Ser	Glu	Leu	Ala	
			195				200					205				
Ile	Asp	Ile	Lys	Gln	Ser	Asn	Asp	Thr	Leu	Leu	His	Ile	Ala	Glu	Ile	
	210					215					220					
Lys	Leu	Arg	Asn	Gly	Ser	Ile	Thr	Glu	Tyr	Asp	Tyr	Lys	Gln	Met	Glu	
225					230					235					240	
Leu	Gln	Ser	Leu	Asn	Leu	Gln	Tyr	Met	Tyr	Glu	Asn	Ala	Val	Lys	His	

<400> 10320															
Phe	Arg	Thr	Asp	Ile	Lys	Met	Thr	Ala	Gln	Glu	Phe	Phe	Lys	Asn	Asp
1				5					10					15	
Leu	Phe	Ala	Thr	Asn	Ala	Gly	Val	Glu	Leu	Ile	Glu	Ile	Arg	Glu	Gly
			20					25					30		
Tyr	Ser	Lys	Ala	Lys	Leu	Glu	Ile	Lys	Pro	Glu	His	Leu	Asn	Ala	Gly
		35					40					45			
Gln	Arg	Thr	Gln	Gly	Gly	Ala	Ile	Phe	Thr	Leu	Ala	Asp	Leu	Ala	Leu

50		55		60
Ala Ala Ala Ala Asn Ser His Gly Thr Leu Ala Phe Ser Leu Ser Ser				
65		70		75
Asn Ile Thr Phe Leu Arg Ala Ser Gly Pro Gly Asp Thr Leu Tyr Ala				80
		85		90
Glu Ala Arg Glu Arg Tyr Thr Gly Arg Ser Thr Gly Tyr Tyr Gln Ile				95
		100		105
Asp Val Thr Asp Gln Glu Gly Arg Leu Ile Ala Thr Phe Glu Ser Ser				110
		115		120
Val Phe Arg Lys Lys Asp Glu Val Pro Phe Thr Leu				125
		130		135
				140

<210> 10321
 <211> 304
 <212> PRT
 <213> B.fragilis

<400> 10321
Ala Gln Ser Arg Thr Asn Leu Lys Asn Arg Asn Gln Met Lys Thr Arg
1 5 10 15
Arg Lys Arg Pro Glu Ile Val Lys Thr Gln Thr Val Ala Ala Ala Ile
20 25 30
Arg Arg Lys Glu Trp Ile Cys Leu Ile Ile Ala Leu Leu Phe Ala Phe
35 40 45
Pro Ser Ser Gly Asn Ala Gln Cys Glu Ala Lys Asn Asp Ala Phe Lys
50 55 60
Ser Gly Glu His Val Met Tyr Glu Leu Tyr Phe Asn Trp Lys Phe Ile
65 70 75 80
Trp Lys Lys Val Gly Leu Ala Ser Leu Thr Thr Asn Ser Thr Thr Tyr
85 90 95
His Ser Glu Pro Ala Tyr Arg Val Asn Leu Leu Ala Ile Ser Ser Lys
100 105 110
Glu Ala Asp Phe Phe Phe Lys Met Arg Asp Thr Leu Thr Ser Val Met
115 120 125
Thr Glu Lys Leu Glu Pro Arg Tyr Phe Arg Lys Gly Ala Glu Glu Gly
130 135 140
Lys Arg Tyr Thr Val Asp Glu Ala Arg Phe Ser Phe Arg Glu Gly Met
145 150 155 160
Cys Tyr Val Asn Gln Lys Arg Val Arg Lys Asp Gly Ser Ile Thr Glu
165 170 175
Thr Glu Gln Ser Asp Asn Arg Cys Ile Tyr Asp Met Leu Thr Ile Leu
180 185 190
Ala Gln Ala Arg Ser Phe Asp Pro Lys Glu Tyr Thr Ile Gly Gln Arg
195 200 205
Ile Gln Phe Pro Met Ala Thr Gly Arg Arg Val Glu Glu Gln Thr Leu
210 215 220
Ile Tyr Arg Gly Ile Lys Lys Ile Thr Ala Glu Asn Asp Thr Thr Tyr
225 230 235 240
Arg Cys Leu Ile Phe Ser Leu Val Glu Tyr Asn Lys Lys Gly Lys Glu
245 250 255
Lys Glu Val Ile Thr Phe Tyr Val Thr Asp Asp Arg Asn His Leu Pro
260 265 270
Val Arg Leu Asp Met His Leu Asn Phe Gly Ser Ala Lys Ala Phe Leu
275 280 285
Lys Ser Val Ser Gly Tyr Arg His Pro Gln Thr Ser Ile Val Thr Lys
290 295 300

<210> 10322
 <211> 320

<212> PRT

<213> B.fragilis

<400> 10322

His	Lys	Arg	Ile	Lys	Ala	His	Gln	Thr	Asp	Tyr	Val	Ser	Phe	Ile	Leu
1				5					10					15	
Tyr	Leu	Leu	Ala	Ser	Cys	Leu	Gly	Asp	Ile	Pro	Lys	Thr	Thr	Thr	Phe
			20					25					30		
Ala	Pro	Ser	Lys	Pro	Lys	Gln	Lys	Arg	Leu	Met	Lys	Tyr	Lys	Leu	Leu
			35				40					45			
Val	Leu	Asp	Leu	Asp	Gly	Thr	Leu	Thr	Asn	Ala	Lys	Lys	Glu	Ile	Thr
	50					55					60				
Pro	Arg	Asn	Arg	Glu	Ala	Leu	Ile	Arg	Val	Gln	Gln	Gln	Gly	Val	Lys
65					70					75					80
Leu	Ile	Leu	Ala	Ser	Gly	Arg	Pro	Thr	Phe	Gly	Ile	Ala	Pro	Leu	Ala
				85					90					95	
Asp	Glu	Leu	Arg	Met	Lys	Glu	Phe	Gly	Gly	Phe	Ile	Leu	Ser	Tyr	Asn
			100					105					110		
Gly	Gly	Glu	Ile	Ile	Asp	Trp	Ser	Thr	Gly	Glu	Ile	Val	Tyr	Ala	Asn
		115					120						125		
Val	Leu	Pro	Asp	Glu	Val	Ile	Pro	Arg	Leu	Tyr	Glu	Cys	Ala	Thr	Arg
	130					135						140			
Asn	Gln	Leu	Pro	Ile	Leu	Thr	Tyr	Asp	Arg	Gln	Tyr	Ile	Ile	Thr	Glu
145					150					155					160
Tyr	Pro	Asp	Asp	Val	Tyr	Val	Arg	Lys	Glu	Ala	Phe	Leu	Asn	Lys	Met
				165					170					175	
Gln	Ile	Tyr	Pro	Ser	Lys	Asp	Phe	Leu	Lys	Asp	Ile	Arg	Leu	Pro	Leu
			180				185						190		
Pro	Lys	Cys	Leu	Ile	Val	Gly	Glu	Pro	His	Arg	Leu	Ile	Pro	Ile	Glu
			195				200					205			
Ala	Glu	Leu	Ser	Val	Glu	Leu	Gln	Gly	Gln	Leu	Ser	Val	Tyr	Arg	Ser
	210					215						220			
Glu	Pro	Phe	Phe	Leu	Glu	Leu	Val	Pro	Gln	Gly	Ile	Asp	Lys	Ala	Gln
225					230					235					240
Ser	Leu	Ser	Val	Leu	Leu	Asn	Lys	Leu	Asn	Met	Asn	Arg	Glu	Glu	Ile
				245					250					255	
Val	Ala	Val	Gly	Asp	Gly	Tyr	Asn	Asp	Leu	Ser	Met	Ile	Gln	Phe	Ala
		260					265						270		
Gly	Leu	Gly	Val	Ala	Met	Gly	Asn	Ala	Gln	Glu	Pro	Val	Lys	Lys	Ala
		275					280					285			
Ala	Asp	Tyr	Ile	Thr	Leu	Ser	Asn	Glu	Glu	Asp	Gly	Val	Ala	Ala	Val
	290					295					300				
Val	Asn	Lys	Phe	Phe	Thr	Lys	Ala	Pro	Glu	Lys	Gly	Glu	Thr	Thr	Ala
305					310					315					320

<210> 10323

<211> 495

<212> PRT

<213> B.fragilis

<400> 10323

Ile	Ser	Asn	Val	Met	Glu	His	Gln	Leu	Thr	Ile	Tyr	Asn	Thr	Leu	Asp
1				5					10					15	
Arg	Lys	Lys	Glu	Leu	Phe	Val	Pro	Leu	His	Ala	Pro	His	Val	Gly	Met
			20					25					30		
Tyr	Val	Cys	Gly	Pro	Thr	Val	Tyr	Gly	Asp	Ala	His	Leu	Gly	His	Ala
		35				40						45			
Arg	Pro	Ala	Ile	Thr	Phe	Asp	Val	Leu	Phe	Arg	Tyr	Leu	Thr	Arg	Leu
	50					55					60				

Gly	Tyr	Lys	Val	Arg	Tyr	Val	Arg	Asn	Ile	Thr	Asp	Val	Gly	His	Leu
65					70					75					80
Glu	His	Asp	Ala	Asp	Glu	Gly	Glu	Asp	Lys	Ile	Ala	Lys	Lys	Ala	Arg
				85					90					95	
Leu	Glu	Gln	Leu	Glu	Pro	Met	Glu	Val	Val	Gln	Tyr	Tyr	Leu	Asn	Arg
			100					105					110		
Tyr	His	Lys	Ala	Met	Glu	Ala	Leu	Asn	Val	Leu	Pro	Pro	Ser	Ile	Glu
	115						120					125			
Pro	His	Ala	Ser	Gly	His	Ile	Ile	Glu	Gln	Ile	Glu	Leu	Val	Lys	Lys
	130					135					140				
Ile	Leu	Asp	Ala	Gly	Tyr	Ala	Tyr	Glu	Ser	Gln	Gly	Ser	Val	Tyr	Phe
145					150					155					160
Asp	Val	Ala	Lys	Tyr	Asn	Lys	Asp	His	His	Tyr	Gly	Lys	Leu	Ser	Gly
				165					170					175	
Arg	Asn	Leu	Asp	Asp	Val	Leu	Asn	Thr	Thr	Arg	Glu	Leu	Asp	Gly	Gln
			180					185					190		
Glu	Glu	Lys	His	Asn	Pro	Ala	Asp	Phe	Ala	Leu	Trp	Lys	Arg	Ala	Gln
		195					200					205			
Pro	Glu	His	Ile	Met	Arg	Trp	Pro	Ser	Pro	Trp	Gly	Asp	Gly	Phe	Pro
	210					215					220				
Gly	Trp	His	Ala	Glu	Cys	Thr	Ala	Met	Gly	Arg	Lys	Tyr	Leu	Gly	Glu
225					230					235					240
His	Phe	Asp	Ile	His	Gly	Gly	Gly	Met	Asp	Leu	Ile	Phe	Pro	His	His
			245						250					255	
Glu	Cys	Glu	Ile	Ala	Gln	Ser	Val	Ala	Ser	Gln	Gly	Asp	Asp	Met	Val
		260						265					270		
His	Tyr	Trp	Met	His	Asn	Asn	Met	Ile	Thr	Ile	Asn	Gly	Thr	Lys	Met
	275						280					285			
Gly	Lys	Ser	Leu	Gly	Asn	Phe	Ile	Thr	Leu	Asp	Glu	Phe	Phe	Ser	Gly
	290				295					300					
Ser	His	Lys	Leu	Leu	Thr	Gln	Ala	Tyr	Ser	Pro	Met	Thr	Ile	Arg	Leu
305					310					315					320
Phe	Ile	Leu	Gln	Ala	His	Tyr	Arg	Ser	Pro	Val	Asp	Phe	Ser	Asn	Glu
			325						330					335	
Ala	Leu	Gln	Ala	Ala	Glu	Lys	Gly	Leu	Ser	Arg	Leu	Met	Glu	Ala	Val
		340						345					350		
Asp	Ser	Leu	Glu	Lys	Ile	Thr	Pro	Ala	Ala	Thr	Ser	Asn	Val	Asp	Val
	355						360					365			
Lys	Ser	Leu	Arg	Thr	Lys	Cys	Phe	Glu	Ala	Met	Asn	Asp	Asp	Leu	Asn
	370					375					380				
Thr	Pro	Ile	Val	Ile	Ser	His	Leu	Phe	Asp	Gly	Ala	Lys	Met	Ile	Asn
385					390					395					400
Asn	Ile	Ile	Ala	Gly	Asn	Asn	Thr	Ile	Ser	Ala	Asp	Asp	Leu	Lys	Asp
			405						410					415	
Leu	Lys	Glu	Val	Phe	His	Thr	Phe	Cys	Phe	Asp	Ile	Leu	Gly	Leu	Lys
		420						425					430		
Glu	Glu	Ile	Gly	Ser	Ser	Asp	Gly	Arg	Glu	Ala	Ala	Tyr	Gly	Lys	Val
	435						440					445			
Val	Asp	Met	Leu	Leu	Glu	Gln	Arg	Val	Lys	Ala	Lys	Ala	Asn	Lys	Asp
	450					455					460				
Trp	Ala	Thr	Ser	Asp	Leu	Ile	Arg	Asn	Glu	Leu	Thr	Ala	Leu	Gly	Phe
465					470					475					480
Glu	Ile	Lys	Asp	Thr	Lys	Asp	Gly	Phe	Glu	Trp	Lys	Leu	Asn	Lys	
				485					490					495	

<210> 10324

<211> 214

<212> PRT

<213> B.fragilis

<400> 10324

Pro Thr Leu Pro Ile Met Ala Leu Lys Glu Lys Ile Lys Gln Asn Pro
 1 5 10 15
 Ala Leu Lys Gln Ala Val His Arg Phe Ile Met His Pro Val Lys Thr
 20 25 30
 Arg Pro Asn Trp Trp Ile Arg Ile Phe Ser Phe Leu Tyr Leu Lys Arg
 35 40 45
 Gly Lys Gly Ser Val Ile Tyr Arg Ser Val Arg Gln Asp Leu Pro Pro
 50 55 60
 Phe Asn Leu Phe Ser Leu Gly Lys Tyr Ser Val Val Glu Asp Phe Ser
 65 70 75 80
 Cys Leu Asn Asn Ala Val Gly Asp Leu Ile Ile Gly Glu Tyr Thr Arg
 85 90 95
 Ile Gly Leu Gly Asn Thr Ile Ile Gly Pro Ala Thr Ile Gly Asn His
 100 105 110
 Val Asn Leu Ala Gln Asn Val Thr Val Thr Gly Leu Asn His Asn Tyr
 115 120 125
 Gln Asp Thr Gly Lys Arg Ile Asp Glu Gln Gly Val Ser Thr Gln Pro
 130 135 140
 Ile Thr Ile Glu Asp Asp Val Trp Val Gly Ala Asn Ser Val Ile Leu
 145 150 155 160
 Pro Gly Val Thr Leu Gly Lys His Cys Val Val Ala Ala Gly Ser Val
 165 170 175
 Val Ser Arg Ser Ile Pro Pro Tyr Ser Val Cys Ala Gly Ser Pro Ala
 180 185 190
 Lys Val Val Lys Gln Phe Asn Pro Glu Ser Arg Thr Trp Glu Lys Thr
 195 200 205
 Val Ser Lys Asn Gly Lys
 210

<210> 10325

<211> 62

<212> PRT

<213> B.fragilis

<400> 10325

Asn Tyr Pro Pro His Ile Arg Lys Ala Ile Lys Ala Phe Leu Tyr Tyr
 1 5 10 15
 Leu Lys Ile Pro Lys Asn Thr Ile Phe Phe Leu Pro Lys Lys Leu Ser
 20 25 30
 Ile Thr Tyr Ser Phe Phe Thr Phe Lys Asn Leu Tyr Leu Ile Glu Asn
 35 40 45
 His Leu Lys Ile Phe Tyr Tyr Leu Lys Ser Leu Ser Asn Thr
 50 55 60

<210> 10326

<211> 73

<212> PRT

<213> B.fragilis

<400> 10326

Arg His Ser Leu Pro Thr Gly Ile Ile Ala Thr Lys Tyr Ser Asp Gly
 1 5 10 15
 Phe Phe Leu Pro Ser Arg Lys Thr Asn Leu Ile Ser Ile Ala Leu Ile
 20 25 30
 Ala Thr Ala Leu Leu Cys Tyr Asp Trp Ser Leu Ser Leu Lys Trp Trp
 35 40 45
 Ser Leu Leu Tyr Ile Leu Met Phe Ile Ile Cys Leu Ala Ile Pro Asp

50 55 60
 Tyr Leu Val Arg Gln Lys Thr Lys Lys
 65 70

<210> 10327
 <211> 453
 <212> PRT
 <213> B.fragilis

<400> 10327

Ile	Thr	Val	Pro	Ser	Arg	Gly	Gln	Glu	Gly	Arg	Leu	Leu	Thr	His	Tyr
1				5					10					15	
Ser	Lys	Thr	Ser	Met	Asn	Lys	Arg	Cys	Leu	Leu	Thr	Ile	Leu	Leu	Gly
			20					25					30		
Gly	Cys	Ala	Ala	Met	Gly	Ala	Phe	Ala	Gln	Gln	His	Ala	Thr	Gly	Lys
		35					40					45			
Lys	Thr	Glu	Met	Ser	Val	Asp	Leu	Asn	Pro	Val	Val	Val	Thr	Gly	Thr
	50					55					60				
Gly	Thr	His	Gln	Arg	Leu	Lys	Asn	Thr	Pro	Ala	Pro	Val	Glu	Val	Val
65					70					75				80	
Thr	Ala	Asn	Glu	Ile	Lys	Lys	Ala	Gly	Ile	Thr	Asp	Phe	Gln	Gln	Ala
				85					90					95	
Met	Thr	Met	Leu	Val	Pro	Ser	Leu	Ser	Phe	Ser	Thr	Asn	Ser	Met	Gly
			100					105					110		
Ser	Tyr	Leu	Met	Met	Asn	Gly	Leu	Ser	Asn	Lys	Tyr	Val	Leu	Ile	Leu
		115					120					125			
Ile	Asn	Gly	Arg	Lys	Leu	Thr	Gly	Asp	Thr	Ala	Asn	Asn	Ile	Asp	Leu
	130					135					140				
Ser	Arg	Ile	Asp	Met	Ser	Arg	Val	Lys	Arg	Ile	Glu	Val	Leu	Asp	Gly
145					150					155				160	
Ala	Gly	Ser	Ser	Leu	Tyr	Gly	Ser	Asp	Ala	Ile	Ala	Gly	Val	Ile	Asn
				165					170					175	
Ile	Ile	Thr	Asn	Glu	Pro	Lys	Glu	Leu	Met	Gln	Val	Thr	Ser	Thr	Thr
		180						185					190		
Arg	Tyr	Glu	Asp	His	Arg	Gln	Leu	Thr	Gln	Met	Val	Asn	Ala	Asp	Ile
	195						200					205			
Ala	Thr	Glu	Lys	Phe	Gly	Ser	Tyr	Thr	Ser	Tyr	Lys	His	Glu	Gln	Ser
	210					215					220				
Ala	Gly	Trp	Gln	Asn	Ser	Asp	Leu	Ala	Tyr	Val	Thr	Asp	Lys	Lys	Gly
225					230					235				240	
Asn	Val	Ser	Thr	Val	Pro	Thr	Val	Ser	Ala	Thr	Ser	Asn	Gly	Phe	His
				245					250					255	
Ser	Asn	Leu	Val	Asn	Gln	Lys	Phe	Thr	Phe	Glu	Pro	Thr	Glu	Lys	Leu
		260						265					270		
Ser	Phe	Tyr	Ala	Asn	Gly	Gly	Tyr	Tyr	Trp	Lys	Leu	Thr	Asp	Arg	Pro
	275						280					285			
Val	Tyr	Thr	Ala	Asp	Ile	Asp	Gly	Gly	Ser	Lys	Tyr	Asp	Leu	His	Tyr
	290				295						300				
Glu	Ser	Tyr	Asn	Phe	Gly	Leu	Gly	Gly	Arg	Tyr	Lys	Ile	Asn	Lys	Arg
305				310					315					320	
Ser	Ser	Ile	Gln	Leu	Asp	Leu	Met	Asn	Asp	Asn	Tyr	Met	Gln	Asn	Tyr
				325					330					335	
Lys	Tyr	Thr	Val	Ala	Asp	Asp	Lys	Asn	Lys	Ile	Ala	Ile	Gly	Asp	Tyr
		340						345					350		
Ala	Lys	Thr	Lys	Glu	Gln	His	Phe	Tyr	Asp	Ala	Glu	Leu	Lys	Gly	Ile
	355						360					365			
Phe	Asn	Phe	Ala	Lys	Asn	Asn	Met	Thr	Val	Leu	Gly	Val	Asp	Tyr	Arg
	370				375						380				
Ser	Glu	Ser	Leu	Asp	Arg	Pro	Ser	Ala	Arg	Val	Asp	Lys	Ser	Val	Tyr

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<210> 10328
<211> 77
<212> PRT
<213> B.fragilis
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<210> 10329
<211> 210
<212> PRT
<213> B.fragilis
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<400>	10329															
Ser	Lys	Glu	Thr	Ile	Asn	Val	Lys	Leu	Asn	Phe	Lys	Arg	Glu	Phe	Met	
1				5					10					15		
Lys	Arg	Lys	Leu	Met	Leu	Leu	Leu	Thr	Cys	Leu	Phe	Met	Gly	Ile	Gly	
			20					25					30			
Leu	Val	Thr	Ala	Gln	Thr	Gln	Lys	Val	Thr	Gly	Val	Val	Ile	Ser	Glu	
			35				40					45				
Glu	Asp	Gly	Gln	Pro	Val	Val	Gly	Ala	Ser	Val	Leu	Ala	Lys	Gly	Thr	
	50					55					60					
Thr	Val	Gly	Val	Ile	Thr	Asp	Val	Asp	Gly	Lys	Phe	Thr	Leu	Ser	Gly	
65					70					75					80	
Ile	Pro	Ser	Ser	Ala	Lys	Thr	Leu	Gln	Ile	Ser	Tyr	Ile	Gly	Met	Gln	
				85					90					95		
Thr	Ala	Glu	Val	Ala	Ile	Ala	Pro	Val	Ile	Lys	Val	Ile	Leu	Lys	Thr	
			100					105					110			
Asp	Ala	Lys	Ala	Leu	Asp	Glu	Val	Val	Val	Thr	Ala	Met	Gly	Ile	Ser	
		115					120					125				
Lys	Glu	Lys	Lys	Ala	Leu	Gly	Tyr	Ala	Val	Gln	Asp	Val	Lys	Gly	Asp	
	130					135					140					
Lys	Leu	Thr	Gln	Ala	Ser	Ser	Ser	Asn	Leu	Ser	Ser	Ala	Leu	Gln	Gly	
145					150					155				160		
Lys	Val	Ser	Gly	Val	Glu	Ile	Ser	Pro	Ser	Ser	Gly	Met	Pro	Gly	Ala	
				165					170					175		
Ser	Ser	Lys	Met	Thr	Ile	Arg	Gly	Ser	Arg	Ser	Phe	Thr	Gly	Asp	Asn	
			180					185					190			
Thr	Pro	Leu	Tyr	Val	Val	Val	Phe	Thr	Lys	Gly	Val	His	Pro	Thr	Val	
			195				200					205				

Phe Ile
210

<210> 10330
<211> 68
<212> PRT
<213> B.fragilis

<400> 10330
Cys Arg Cys Tyr Gln Ser His Ala Leu Gln Val Tyr Ala Glu Ile Glu
1 5 10 15
Lys Lys Glu Leu Gly Leu Val Gln Pro Gly Lys Gln Asn Ser Leu Asp
20 25 30
Leu Phe Lys Asp Ser Phe Glu Asn Lys Thr Lys Ala Leu Asn Leu Leu
35 40 45
Ile Phe Ser His Glu Ile Pro Lys Thr Ser Leu Lys Glu Ser Pro Lys
50 55 60
Arg Asn Phe Phe
65

<210> 10331
<211> 614
<212> PRT
<213> B.fragilis

<220>
<221> UNSURE
<222> (570), (587)
<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10331
Lys Gln Thr Leu Ser Asp Thr Ser Ser Pro Val Val Arg Asn Cys Ser
1 5 10 15
Met Ser Ser Thr Ile Asn Gly Cys Gly Val Trp Met Cys Ser Asp His
20 25 30
Thr Ile Phe Ile Gly Gly Thr Gly Gly Leu Ser Ser Phe Leu Glu Lys
35 40 45
Asp Leu Asn Lys Glu Tyr Pro Lys Pro Lys Leu Tyr Phe Ser Ser Leu
50 55 60
Ser Val Asn Asn Ala Arg Ile Ser Pro Asp Asp Lys Ser Arg Ile Leu
65 70 75 80
Thr Glu Gly Leu Pro Phe Val Arg Glu Ile Asn Leu Asn Ala Thr Gln
85 90 95
Asn Asn Leu Thr Val Glu Phe Ala Ser Ser Asn Tyr Val Asp Ile Leu
100 105 110
Asn Asn Thr Trp Tyr Glu Tyr Gln Leu Glu Gly Phe Asp Lys Gln Trp
115 120 125
Ser Leu Thr Ser Gln Thr Ser Leu Lys Tyr Thr Asn Leu Asp Pro Gly
130 135 140
Asp Tyr Val Leu His Val Arg Gln Lys Gly Asn Ser Leu Lys Met Arg
145 150 155 160
Lys Ala Gln Glu Ile Leu Leu Gln Ile His Ile Asn Thr Pro Trp Tyr
165 170 175
Leu Thr Trp Trp Ala Trp Leu Ser Tyr Ile Thr Ile Ser Ile Ser Val
180 185 190
Thr Tyr Phe Ile Trp Arg Glu Lys Ser Ser Arg Arg Thr Leu Ala Met
195 200 205
Ser Leu Glu Lys Glu Arg Ile Glu Lys Glu His Ile Glu Glu Met Asn
210 215 220

Gln Ala Lys Leu Arg Phe Phe Thr Asn Val Ser His Glu Phe Arg Thr
 225 230 235 240
 Pro Leu Thr Leu Ile Ile Ser Gln Val Glu Leu Met Leu Gln Lys Asn
 245 250 255
 Thr Ile Pro Pro Ser Leu His Asn Ser Ile Phe Arg Ile Arg Lys His
 260 265 270
 Ala Gln Gln Met Lys Leu Leu Ile Ser Glu Leu Leu Asp Phe Arg Lys
 275 280 285
 Phe Asp Gln Asn Tyr Ile Gln Leu Lys Leu Ser Glu Gln Ser Leu Asn
 290 295 300
 Thr Phe Leu Glu Glu Val Tyr Leu Ser Phe Ser Ala Tyr Ala Ser Gln
 305 310 315 320
 Lys Ser Ile Ser Tyr His Leu Lys Leu Leu Glu Gln Asp Ile Ser Ile
 325 330 335
 Trp Ile Asp Asp Trp Gln Met Arg Lys Val Leu Phe Asn Leu Leu Ser
 340 345 350
 Asn Ala Phe Lys His Val Pro Asp Lys Gly Glu Ile Ser Ile Leu Thr
 355 360 365
 Ser Thr Thr Pro Asp Gln Val Val Ile Ala Val Lys Asp Ser Gly Asn
 370 375 380
 Gly Ile Ser Lys Glu Glu Gln Glu Arg Ile Phe Asp Arg Phe Tyr Gln
 385 390 395 400
 Ala Asp Asn Arg Asn Lys Ala Ile His Val Gly Thr Gly Ile Gly Leu
 405 410 415
 Ala Leu Thr Lys Ser Ile Ile Gln Leu His His Gly Thr Ile Glu Val
 420 425 430
 Glu Ser Glu Leu Asn Glu Gly Ser Cys Phe Ile Val Lys Leu Pro Lys
 435 440 445
 Thr Arg Asp Cys Phe Glu Lys Asp Thr Glu Val Val Phe Leu Glu Ser
 450 455 460
 Pro Glu Lys Glu Pro Met Val Gln Glu Asn Thr Ile Pro Asp Glu Asn
 465 470 475 480
 Phe Met Lys Lys Asp Asp Ser Thr Phe Glu Thr Pro Leu Ile Asp Glu
 485 490 495
 Arg Glu Gly Lys Arg Lys Val Leu Leu Val Glu Asp Asn Val Glu Leu
 500 505 510
 Leu Gln Val Leu Lys Glu Ile Phe Ser Ser Leu Tyr Gln Val Val Thr
 515 520 525
 Ala Ala Asn Gly Glu Glu Gly Leu Lys Gln Ala Phe Ala Glu Val Pro
 530 535 540
 Asp Leu Ile Val Ser Asp Val Met Met Pro Val Met Thr Gly Thr Glu
 545 550 555 560
 Met Cys Leu Lys Ile Lys Asn Asn Ile Xaa Leu Cys His Ile Pro Val
 565 570 575
 Val Leu Leu Thr Ala Leu Asp Thr Val Asp Xaa Asn Ile Glu Gly Leu
 580 585 590
 Pro Arg Gly Ala Asp Asp Tyr Ile Thr Gln Pro Phe Asn Ala Lys Asn
 595 600 605
 Leu Ile Thr Pro Cys Lys
 610

<210> 10332

<211> 145

<212> PRT

<213> B.fragilis

<400> 10332

Glu Asp Ser Thr Ile Ser Val Gly Ile Glu Arg Gly Lys Val Tyr Thr
 1 5 10 15

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<210> 10333
<211> 60
<212> PRT
<213> B.fragilis
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<210> 10334
<211> 193
<212> PRT
<213> B.fragilis
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<400> 10334																
Ser	Arg	Gln	Asn	Ile	Lys	Glu	Asp	Ser	Pro	Met	Lys	Leu	Leu	Leu	Pro	
1			5						10					15		
Leu	Leu	Leu	Phe	Cys	Leu	Pro	Phe	Asn	Gly	Ser	Asn	Gly	Gly	Lys	Glu	
			20					25					30			
Leu	Leu	Asp	Lys	Ala	Leu	Asp	Arg	Cys	Glu	Arg	Leu	Glu	Thr	Leu	Glu	
		35					40					45				
Asn	Tyr	Arg	Asp	Ile	Leu	Ser	Arg	Tyr	Gly	Val	Ser	Asp	Lys	Ile	Pro	
	50					55					60					
Leu	Ala	Cys	Pro	Leu	Lys	Asp	Arg	Phe	Arg	Lys	Ser	Ser	Gly	Phe	Gly	
65					70					75					80	
Ile	Arg	Ile	His	Pro	Ile	Thr	Gly	Lys	Arg	Ser	Phe	His	Ser	Gly	Ile	
				85					90					95		
Asp	Met	Ala	Val	Gly	Leu	Ala	Ala	Pro	Val	Tyr	Ala	Thr	Ala	Ser	Gly	
			100					105					110			
Thr	Val	Ser	Phe	Ala	Gly	Arg	Lys	Gly	Gly	Tyr	Gly	Arg	Cys	Val	Ile	
		115					120					125				
Ile	Arg	His	Ser	Tyr	Gly	Phe	Glu	Thr	Leu	Tyr	Ala	His	Leu	Ala	Ala	
	130					135					140					
Tyr	Tyr	Thr	Thr	Glu	Gly	Gln	Lys	Val	Asp	Lys	Gly	Ala	Val	Ile	Ala	

145 150 155 160
Phe Ala Gly Ser Thr Gly Lys Ser Thr Gly Tyr His Leu His Tyr Glu
165 170 175
Ile Arg Lys Asn Gly Lys Pro Ile Lys Pro Tyr Trp Tyr Gly Tyr Asp
180 185 190
Asp

<210> 10335
<211> 117
<212> PRT
<213> B.fragilis

<400> 10335
Thr Ala His Arg Ser Val Ile Arg Arg Ile Ser Cys Gly Ser Thr Ser
1 5 10 15
Arg Met Pro Arg Ser Ala Lys Arg Arg Arg Tyr Ser Ser Ser Ser Arg
20 25 30
Thr Ser Cys Ser Leu Ser Ile Ile Pro Glu Glu Val Pro Ala His Glu
35 40 45
Ser Arg Thr Phe Thr Val Ala Met Asn Lys Phe Thr Ile Pro Asp Lys
50 55 60
Lys Arg Leu Ile Ile Glu Ile Gln Glu Arg Asn Gly Gly Arg His Phe
65 70 75 80
Leu Tyr Lys Leu Lys Asn Lys Ser Leu Leu Thr Ala Glu Glu Val Phe
85 90 95
Arg Ser Arg Lys Gln Gln Glu Thr Glu Asp Glu Ala Asp Lys Ile Leu
100 105 110
Arg Arg Ile Ala Arg
115

<210> 10336
<211> 117
<212> PRT
<213> B.fragilis

<400> 10336
Asn His Thr Gly Met Ala Met Thr Ile Glu Gln Glu Ile Glu Gln Leu
1 5 10 15
Val Leu Gln Cys Ile Ala Ser Asp Gly Leu Lys Ala Cys Pro Lys Asp
20 25 30
Leu Ala Phe Leu Glu Lys Tyr Gly Leu Lys Asn Leu Tyr Phe Phe Ser
35 40 45
Leu Glu Tyr Ala Met Glu Gly Thr Asp Thr Thr Val Leu Asp Ser Lys
50 55 60
Ala Lys Gly Leu Ile Arg Trp Tyr Leu Tyr Ser Thr Asp Phe Pro Leu
65 70 75 80
Leu Arg Gln Lys Tyr Glu Arg Glu Gly Lys Ala Glu Leu Met Lys Cys
85 90 95
Leu Tyr Leu Glu Glu Arg Tyr Phe Arg Lys Phe Leu Glu Ser Thr Gly
100 105 110
Gln Glu Glu Gly Leu
115

<210> 10337
<211> 64
<212> PRT
<213> B.fragilis

<400> 10337

Val	Val	Ala	Ala	Ala	Pro	Ser	Ser	Pro	Val	Val	Lys	Thr	Met	Ser	Asp
1				5					10					15	
Ser	Leu	Val	Glu	Arg	Lys	Gly	Ala	Ser	Asp	Glu	Gln	His	Arg	Lys	Leu
			20					25					30		
Leu	Tyr	Lys	Arg	Tyr	Gly	Arg	Leu	Thr	Phe	Arg	Glu	Gly	Lys	Ile	Ile
		35					40					45			
Phe	Leu	Asn	Ser	Arg	Cys	Pro	Ala	Phe	Tyr	Val	Lys	Lys	Glu	Glu	Lys
	50					55					60				

<210> 10338

<211> 515

<212> PRT

<213> B.fragilis

<400> 10338

Thr	Ser	Lys	Tyr	Cys	Thr	Ser	Met	Asp	Ser	Ile	Leu	Phe	Trp	Leu	Val
1				5					10					15	
Pro	Phe	Ala	Ser	Val	Leu	Ala	Leu	Cys	Phe	Ala	Leu	Tyr	Phe	His	Lys
			20					25					30		
Gln	Met	Met	Lys	Glu	Ser	Glu	Gly	Thr	Pro	Gln	Met	Ile	Lys	Ile	Ala
		35					40					45			
Ala	Ala	Val	Arg	Arg	Gly	Ala	Met	Ser	Tyr	Leu	Lys	Gln	Gln	Tyr	Lys
		50				55				60					
Ile	Val	Gly	Trp	Val	Phe	Leu	Gly	Leu	Val	Ile	Leu	Phe	Ser	Val	Met
65					70					75					80
Ala	Tyr	Gly	Phe	Gln	Val	Gln	Asn	Ala	Trp	Val	Pro	Ile	Ala	Phe	Leu
				85					90				95		
Thr	Gly	Gly	Phe	Phe	Ser	Gly	Leu	Ser	Gly	Phe	Leu	Gly	Met	Lys	Thr
			100					105					110		
Ala	Thr	Tyr	Ala	Ser	Ala	Arg	Thr	Ala	Asn	Ala	Ala	Arg	Thr	Ser	Leu
		115				120						125			
Asn	Ala	Gly	Leu	Arg	Ile	Ala	Phe	Arg	Ser	Gly	Ala	Val	Met	Gly	Leu
	130					135					140				
Val	Val	Val	Gly	Leu	Gly	Leu	Leu	Asp	Ile	Ser	Phe	Trp	Tyr	Leu	Leu
145					150					155					160
Leu	Asn	Trp	Ala	Ile	Pro	Ala	Asp	Val	Leu	Thr	Pro	Thr	His	Lys	Leu
			165						170					175	
Cys	Ile	Ile	Thr	Thr	Thr	Met	Leu	Thr	Phe	Gly	Met	Gly	Ala	Ser	Thr
			180					185					190		
Gln	Ala	Leu	Phe	Ala	Arg	Val	Gly	Gly	Gly	Ile	Tyr	Thr	Lys	Ala	Ala
		195					200					205			
Asp	Val	Gly	Ala	Asp	Leu	Val	Gly	Lys	Val	Glu	Ala	Gly	Ile	Pro	Glu
	210				215					220					
Asp	Asp	Pro	Arg	Asn	Pro	Ala	Thr	Ile	Ala	Asp	Asn	Val	Gly	Asp	Asn
225					230					235					240
Val	Gly	Asp	Val	Ala	Gly	Met	Gly	Ala	Asp	Leu	Tyr	Glu	Ser	Tyr	Cys
			245						250					255	
Gly	Ser	Ile	Leu	Ala	Thr	Ala	Ala	Leu	Gly	Ala	Ala	Ala	Phe	Ile	His
			260					265					270		
Thr	Gly	Asp	Thr	Val	Met	Gln	Phe	Lys	Ala	Val	Ile	Ala	Pro	Met	Leu
		275					280					285			
Ile	Ala	Ala	Ile	Gly	Ile	Ile	Leu	Ser	Ile	Ile	Gly	Ile	Phe	Ser	Val
	290					295					300				
Arg	Thr	Lys	Glu	Asn	Ala	Thr	Met	Lys	Asp	Leu	Leu	Gly	Ser	Leu	Ala
305					310					315					320
Trp	Gly	Thr	Asn	Leu	Ser	Ser	Ala	Leu	Ile	Val	Ala	Ala	Thr	Phe	Phe
			325						330					335	
Ile	Leu	Trp	Leu	Leu	Gln	Leu	Asp	Asn	Trp	Met	Trp	Ile	Ser	Cys	Ala

10337 10338 515 PRT B.fragilis
 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335

```

          340          345          350
Val Val Val Gly Leu Val Val Gly Ile Val Ile Gly Arg Ser Thr Glu
          355          360          365
Tyr Tyr Thr Ser Gln Ser Tyr Arg Pro Thr Gln Lys Leu Ser Glu Ser
          370          375          380
Gly Lys Thr Gly Pro Ala Thr Val Ile Ile Ser Gly Ile Gly Leu Gly
385          390          395          400
Met Leu Ser Thr Ala Ile Pro Val Val Ala Val Val Ile Gly Ile Ile
          405          410          415
Ala Ser Tyr Leu Leu Ala Ser Gly Phe Asp Phe Asn Asn Val Gly Met
          420          425          430
Gly Leu Tyr Gly Ile Gly Ile Ala Ala Val Gly Met Leu Ser Thr Leu
          435          440          445
Gly Ile Thr Leu Ala Thr Asp Ala Tyr Gly Pro Ile Ala Asp Asn Ala
          450          455          460
Gly Gly Asn Ala Glu Met Ser Ser Leu Gly Lys Glu Val Arg Lys Arg
465          470          475          480
Thr Asp Ala Leu Asp Ser Leu Gly Asn Thr Thr Ala Ala Thr Gly Lys
          485          490          495
Gly Phe Ala Ile Gly Ser Ala Ala Leu Thr Glu Leu Ala Leu Leu Ala
          500          505          510
Ser Tyr Ile
          515

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<210> 10339

<211> 299

<212> PRT

<213> B.fragilis

<400> 10339

```

Phe Pro Leu Ser Gln Pro Leu Arg Ala Lys Leu Lys Asp Tyr Ser Met
1          5          10          15
Phe Asp Lys Lys Phe Asn Phe Tyr Ile Ala Asn Asp Leu Gly Arg Asn
          20          25          30
Gly Tyr Tyr Asp Gln Lys Pro Ile Ala Glu Leu Met Gly Thr Met Gly
          35          40          45
Glu Glu Ile Gly Pro Glu Phe Val Leu Ala Ala Gly Asp Ile His His
          50          55          60
Phe Glu Gly Val Arg Ser Val Asn Asp Pro Leu Trp Met Thr Asn Phe
65          70          75          80
Glu Leu Ile Tyr Ser His Pro Glu Leu Met Ile Asp Trp Tyr Pro Val
          85          90          95
Leu Gly Asn His Glu Tyr Arg Gly Asn Thr Gln Ala Val Leu Asp Tyr
          100          105          110
Ser Gly Val Ser Arg Arg Trp Thr Met Pro Ala Arg Tyr Tyr Thr Lys
          115          120          125
Thr Phe Gly Glu Lys Gly Ala Thr Val Arg Ile Val Trp Ile Asp Thr
          130          135          140
Ala Pro Leu Ile Asp Lys Tyr Arg Asn Glu Ser Ala Thr Tyr Pro Asp
145          150          155          160
Ala Cys His Gln Asp Met Asn Gly Gln Leu Ala Trp Leu Asp Ser Val
          165          170          175
Leu Thr Val Ala Lys Glu Asp Trp Val Ile Val Ala Gly His His Pro
          180          185          190
Ile Tyr Ala Glu Thr Pro Lys Asp Gln Ser Glu Arg Ser Asp Leu Gln
          195          200          205
Ser Arg Leu Asp Pro Ile Leu Arg Lys His Lys Val Asp Met Tyr Ile
          210          215          220
Cys Gly His Ile His Asn Phe Gln His Ile Arg Val Pro Gly Ser Asp

```


225		230		235		240									
Ile	Asp	Tyr	Ile	Val	Asn	Ser	Ala	Gly	Ser	Leu	Ala	Arg	Lys	Val	Lys
			245						250					255	
Pro	Ile	Glu	Gly	Thr	Gln	Phe	Cys	Asn	Pro	Glu	Pro	Gly	Phe	Ser	Val
			260					265					270		
Cys	Ser	Ile	Asp	Lys	Gln	Glu	Leu	Asn	Leu	Arg	Met	Ile	Asp	Lys	Lys
		275					280					285			
Gly	Asn	Ile	Leu	Tyr	Thr	Val	Thr	Arg	Lys	Lys					
	290					295									

<210> 10340

<211> 163

<212> PRT

<213> B.fragilis

<400> 10340

Gly	Leu	Val	Leu	Thr	Ser	Ala	Asp	Pro	Tyr	Arg	Pro	Ala	Val	Lys	Thr
1				5					10					15	
Thr	Arg	Ile	Lys	Thr	Pro	Lys	Asn	Glu	Val	Val	Thr	Ile	Pro	Asn	Ser
			20					25					30		
Phe	Ile	Met	Ser	Ser	His	Thr	Val	Asn	Tyr	Ser	Ala	Ser	Ala	Arg	Glu
		35					40					45			
Tyr	Gly	Leu	Ile	Ile	His	Ser	Glu	Val	Thr	Ile	Gly	Tyr	Asp	Val	Pro
	50					55				60					
Trp	Arg	Gln	Val	His	Gln	Leu	Leu	Ile	Glu	Ala	Ala	Leu	Asn	Thr	Pro
65					70					75					80
Gly	Val	Ile	Asp	Asp	Pro	Arg	Pro	Phe	Val	Leu	Glu	Thr	Ser	Leu	Ser
				85					90					95	
Asp	Trp	Tyr	Pro	Val	Tyr	Gln	Ile	Asn	Ala	Tyr	Ile	Arg	Glu	Ala	Asp
			100					105					110		
Lys	Leu	Ala	Gln	Ile	Tyr	Ser	Asp	Leu	His	Gln	Asn	Ile	Gln	Asp	Arg
		115					120					125			
Phe	Asn	Glu	Ala	Gly	Ile	Glu	Ile	Met	Ser	Pro	His	Tyr	Met	Ala	Met
	130					135					140				
Arg	Asp	Gly	Asn	Glu	Ser	Thr	Ile	Pro	Lys	Asp	Asp	Leu	Arg	Pro	Lys
145					150					155					160
Thr	Asp	Lys													

<210> 10341

<211> 333

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (270), (304), (309)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10341

Phe	Ile	Ile	Leu	Leu	Pro	Ile	Lys	Tyr	Glu	Lys	Ser	Leu	Phe	Ser	Ser
1				5					10					15	
Leu	Tyr	Ile	Thr	Leu	Ser	His	Ile	Ala	Ser	Val	Arg	Gly	Lys	Ser	Val
			20					25					30		
Ala	Tyr	Leu	Ile	Asn	Lys	Leu	Phe	Ser	Asn	Tyr	Phe	Pro	Glu	Ala	Leu
		35				40					45				
Gln	Ala	Gln	His	Ser	Tyr	Phe	Lys	Leu	Ile	Pro	Thr	Ser	Ser	Glu	Gly
	50					55				60					
Gly	Asp	Arg	Pro	Arg	Pro	Asp	His	Ser	Leu	Lys	Lys	Gln	Gln	Ile	Leu

```

65          70          75          80
Asn Ile Met Lys Ser Phe Lys Ile Met Leu Ile Thr Val Leu Ser Val
      85          90          95
Met Thr Leu Ser Cys Ser Glu Lys Thr Thr Thr Glu Ile Pro Glu Thr
      100         105         110
Glu Leu Lys Asn Ile Ser Cys Ser Thr Gln Leu Val Thr His Ser Ser
      115         120         125
Ala Gln Thr Arg Gly Ala Ala Pro Thr Thr Leu Asn Glu Asn Asp Phe
      130         135         140
Val Leu Tyr Ala Phe Lys Lys Asn Gly Glu Gly Asn Phe Ser Tyr Glu
      145         150         155         160
Glu Ala Lys His Glu Thr Ser Val Ile Asp Gly Gly Val Trp Lys Tyr
      165         170         175
Asn Ala Ala Phe Pro Val Gly Thr Tyr Lys Phe Ile Ala Phe Tyr Asn
      180         185         190
Leu Asp Glu Lys Asn Gln Ala Ala Leu Asn Thr Thr Ile Thr Gly Ile
      195         200         205
Ser Asn Gln Thr Trp Glu Asn Ile Leu Lys Ser Ile Val Ile Thr His
      210         215         220
Phe Pro Ser Ala Thr Asp Gln Tyr His Glu Asp Met Asn Glu Ile Phe
      225         230         235         240
Cys Gly Lys Thr Lys Asp Ala Ile Asp Ile Ser Ser Gly Val Gly Gly
      245         250         255
Asp Asp Asn Glu Ile Lys Ile Lys Leu Thr Leu Glu Arg Xaa Val Ser
      260         265         270
Arg Ile Asp Ile Lys Phe Ile Lys Val Ala Ser Asp Asp Asp His Ile
      275         280         285
Glu Val Pro Tyr Ala Thr Gly Asn Asn Phe Gly Gly Thr Ser Thr Xaa
      290         295         300
Ser Trp Thr Ser Xaa Ile Phe Thr Ser Ala Asn Val Pro Leu Lys Tyr
      305         310         315         320
Asn Pro Asn Gly Glu Asn Pro Asp Tyr Val Thr Gly Val
      325         330

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<210> 10342
<211> 300
<212> PRT
<213> B.fragilis

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<400> 10342
Leu Asn Ser Lys Ile Val Met Ala Lys Glu Ile Leu Phe Asn Ile Glu
1          5          10          15
Ala Arg Asp Gln Leu Lys Lys Gly Val Asp Ala Leu Ala Asn Ala Val
      20         25         30
Lys Val Thr Leu Gly Pro Lys Gly Arg Asn Val Ile Ile Glu Lys Lys
      35         40         45
Phe Gly Ala Pro His Ile Thr Lys Asp Gly Val Thr Val Ala Lys Glu
      50         55         60
Ile Glu Leu Thr Asp Ala Tyr Gln Asn Thr Gly Ala Gln Leu Val Lys
65         70         75         80
Glu Val Ala Ser Lys Thr Gly Asp Asp Ala Gly Asp Gly Thr Thr Thr
      85         90         95
Ala Thr Val Leu Ala Gln Ala Ile Ile Ala Glu Gly Leu Lys Asn Val
      100        105        110
Thr Ala Gly Ala Ser Pro Met Asp Ile Lys Arg Gly Ile Asp Lys Ala
      115        120        125
Val Ala Lys Val Val Asp Ser Ile Lys His Gln Ala Glu Lys Val Gly
      130        135        140
Asp Asn Tyr Asp Lys Ile Glu Gln Val Ala Thr Val Ser Ala Asn Asn

```

145		150		155		160									
Asp	Pro	Val	Ile	Gly	Lys	Leu	Ile	Ala	Asp	Ala	Met	Arg	Lys	Val	Ser
		165		170		175									
Lys	Asp	Gly	Val	Ile	Thr	Ile	Glu	Glu	Ala	Lys	Gly	Thr	Asp	Thr	Thr
		180		185		190									
Ile	Gly	Val	Val	Glu	Gly	Met	Gln	Phe	Asp	Arg	Gly	Tyr	Leu	Ser	Ala
		195		200		205									
Tyr	Phe	Val	Thr	Asn	Thr	Glu	Lys	Met	Glu	Cys	Glu	Met	Glu	Lys	Pro
		210		215		220									
Tyr	Ile	Leu	Ile	Tyr	Asp	Lys	Lys	Ile	Ser	Asn	Leu	Lys	Asp	Phe	Leu
		225		230		235									
Pro	Ile	Leu	Glu	Pro	Ala	Val	Gln	Ser	Gly	Arg	Pro	Leu	Leu	Gly	Ile
		245		250		255									
Ala	Glu	Asp	Val	Asp	Ser	Glu	Thr	Val	Ala	Thr	Leu	Val	Gly	Asn	Arg
		260		265		270									
Leu	Arg	Ser	Gln	Leu	Lys	Asn	Cys	Ala	Val	Lys	Ala	Arg	Gly	Phe	Gly
		275		280		285									
Asp	Arg	Arg	Lys	Lys	Met	Val	Glu	Lys	Phe	Pro	Phe				
		290		295		300									

<210> 10343

<211> 93

<212> PRT

<213> B.fragilis

<400> 10343

Lys	Val	Thr	Met	Asn	Ile	Lys	Pro	Leu	Ala	Asp	Arg	Val	Leu	Ile	Leu
1				5					10					15	
Pro	Ala	Pro	Ala	Glu	Glu	Lys	Thr	Ile	Gly	Gly	Ile	Ile	Ile	Pro	Asp
			20					25					30		
Thr	Ala	Lys	Glu	Lys	Pro	Leu	Lys	Gly	Glu	Val	Val	Ala	Val	Gly	His
			35				40					45			
Gly	Thr	Lys	Asp	Glu	Glu	Met	Val	Leu	Lys	Ala	Gly	Asp	Thr	Val	Leu
			50			55					60				
Tyr	Gly	Lys	Tyr	Ala	Gly	Thr	Glu	Leu	Glu	Val	Glu	Gly	Lys	Lys	Tyr
			65		70					75					80
Leu	Ile	Met	Arg	Gln	Ser	Asp	Val	Leu	Ala	Val	Leu	Gly			
				85				90							

<210> 10344

<211> 123

<212> PRT

<213> B.fragilis

<400> 10344

Ser	Thr	Cys	Ser	Pro	Cys	Trp	Ala	Phe	Thr	Val	Asp	Gly	Ser	Arg	Ala
1				5					10					15	
Cys	Ser	Leu	Asn	Val	Glu	Ala	Val	Pro	Thr	Glu	Gly	Thr	Tyr	Asp	Phe
			20					25					30		
Thr	Gly	Gly	Thr	Leu	Ser	Val	Asn	Glu	Gly	Ser	Gly	Thr	Val	Ser	Ser
			35				40					45			
Lys	Glu	Asn	Met	Leu	Leu	Leu	Leu	Pro	Gly	Arg	Leu	Glu	Glu	Arg	Arg
			50			55					60				
Ala	Gln	Ile	Arg	Tyr	Leu	Asp	Arg	Thr	Tyr	Asp	Trp	Tyr	Leu	Pro	Ala
			65		70					75					80
Asn	Thr	Phe	Glu	Ala	Gly	Lys	Arg	Tyr	Asp	Tyr	Ala	Leu	Thr	Leu	Ser
			85					90					95		
Lys	Glu	Gly	Val	Leu	Ile	Leu	Ser	Gly	Val	Ser	Ala	Arg	Pro	Trp	Glu
			100					105					110		

Thr Gly Gly Asp Tyr Thr Gly Thr Ile Gln Pro
 115 120

<210> 10345
 <211> 227
 <212> PRT
 <213> B.fragilis

<400> 10345
 Ser Gly Ile Thr Ser Gly Ser Ser Glu Arg Glu Leu Arg Ser Arg Tyr
 1 5 10 15
 Asn Ser Arg Leu Leu Pro Gly Glu Arg Lys Asn Leu Pro Cys Arg Lys
 20 25 30
 Arg Arg Lys Arg Lys Tyr Gly Pro Gly Ser Ala Lys Pro Trp Ile Val
 35 40 45
 Cys Pro Gly His Arg Pro Ala Gly Asp Ser Thr Arg Ser Gly Ser Ser
 50 55 60
 Gly Arg Lys Arg Gly Met Ser Ser Arg His Ser Cys Thr Pro His Arg
 65 70 75 80
 Pro Val Trp Ser Gly Ser Thr Leu Lys Met Gln Leu Ala Glu Asn Cys
 85 90 95
 Leu Thr Asp Asp Gly Gln Arg Ile Arg Lys Gly Thr Pro Val Phe Gly
 100 105 110
 Glu Val Thr Gly Ile Asp Gly Glu Arg Val Leu Val Lys Ile Thr Ser
 115 120 125
 Val Asn Leu Gly Gly Asn Ile Leu Pro Phe Glu Lys Gln Val Tyr Ser
 130 135 140
 Glu Asp Ala Ile Gln Gly Ile Tyr Val Pro Gly Asn Val Lys Ala Glu
 145 150 155 160
 Thr Ala Gln Glu Ala Gly Ala Ala Gly Ile Ser Gly Ala Asn Thr Asn
 165 170 175
 Ile Ser Gly Gly Phe Asp Met Gly Ser Gln Leu Val Ala Gly Ala Ala
 180 185 190
 Asn Ser Val Ile Asn Ala Thr Lys Ser Ala Ala Ser Lys Asn Ile Arg
 195 200 205
 Lys Val Lys Val Thr Ile Lys Thr Asn Tyr Arg Ile Leu Leu Arg Gln
 210 215 220
 Pro Lys Glu
 225

<210> 10346
 <211> 60
 <212> PRT
 <213> B.fragilis

<400> 10346
 Met Glu Thr Ala Phe Ala Gly Tyr Gly Met Asp Pro Asp Ala Lys Ala
 1 5 10 15
 Ala Ala Leu Pro Glu Pro Val Phe Gln Gly Thr Gly Glu Arg Asp Leu
 20 25 30
 Val Gly Tyr Ser Val Pro Gly Glu Tyr Ile Pro Val Val Phe Gln Cys
 35 40 45
 Leu Gln Ala Phe Ala Pro Val Gln Cys Leu Val Glu
 50 55 60

<210> 10347
 <211> 327
 <212> PRT
 <213> B.fragilis

<400> 10347

Leu Ile Ile Tyr Phe Phe Gln Met Lys Met Lys Thr Ser Phe Phe Leu
 1 5 10 15
 Ser Ala Val Met Ala Ala Gly Leu Leu Ala Ser Cys Ser Asn Ser Glu
 20 25 30
 Glu Val Phe Asn Glu Gln Val Thr Asp Gly Glu His Ser Gly Ala Gln
 35 40 45
 Leu Asn Ile Val Pro Thr Val Ser Ser Glu Ser Thr Glu Thr Arg Ala
 50 55 60
 Ser Phe Asp Pro Lys Thr Asp Trp Ala Ala Gly Asp Gly Ala Gly Leu
 65 70 75 80
 Phe Met Tyr Lys Val His Gly Trp Gly Asp Ala Tyr Pro Arg Tyr Asp
 85 90 95
 Ala Gln Asn Asn Lys Ser Thr Arg Gln Ala Asn Gly Trp Ser Gln Ala
 100 105 110
 Ser Pro Val Tyr Leu Leu Val Asp Lys Ala Thr Ile Trp Ala Tyr Tyr
 115 120 125
 Pro Tyr Asn Gln Ala Val Thr Asp Gly Thr Lys Ile Pro Val Pro Ile
 130 135 140
 Asn Val Gly Thr Ser Val Asp Tyr Met Trp Gly Lys Ser Thr Asn Gln
 145 150 155 160
 Val Ser Val Ile Glu Thr Asp Ala Arg Ile Pro Met Lys His Ala Leu
 165 170 175
 Ser Gln Phe Val Val Arg Leu Lys Val Ser Pro Glu Tyr His Asn Asp
 180 185 190
 Gly Asn Leu Thr Ser Ala Lys Leu Lys Ala Thr Ala Ser Lys Phe Ala
 195 200 205
 Thr Thr Gly Thr Met Asn Leu Asn Asp Gly Gly Lys Ile Thr Phe Gln
 210 215 220
 Pro Thr Ser Thr Glu Leu Thr Trp Ser Pro Asn Thr Thr Val Pro Ala
 225 230 235 240
 Gln Gly Gln Gln Ala Val Asp Tyr Ala Ala Ile Tyr Pro Met Thr
 245 250 255
 Leu Ala Ala Gly Glu Val Ser Leu Glu Val Val Ile Asp Gly Ala Thr
 260 265 270
 Tyr Thr Tyr Ala Ile Pro Gln Ile Thr Trp Glu Ala Gly Lys Arg Tyr
 275 280 285
 Ile Tyr Ser Ile Thr Met Arg Ser Asn Asp Ala Glu Ile Gly Gly Lys
 290 295 300
 Asn Gly Gln Ser Val Thr Ile Glu Gly Trp Thr Ser Thr Glu Glu Asp
 305 310 315 320
 Ile Thr Leu Val Pro Val Lys
 325

<210> 10348

<211> 224

<212> PRT

<213> B.fragilis

<400> 10348

Thr Asn Gly Tyr Lys Leu Tyr Asn Glu Thr Phe Met Lys Ala Thr Lys
 1 5 10 15
 Ser Ile Leu Asn Ile Gln Ser Ile Leu Lys Asp Phe Ser Gly Leu Ala
 20 25 30
 Glu Ala Arg Lys Ser Tyr Thr Leu Arg Thr Arg Leu Val Phe Ile Phe
 35 40 45
 Cys Gly Ile Thr Ile Ala Met Val Leu Phe Phe Ala His Ser Val Val
 50 55 60

Asn	Asn	Ala	Met	Asn	Lys	Ile	Leu	Val	Val	Asn	Glu	Gly	Gly	Glu	Phe
65					70					75					80
Val	His	Phe	Lys	Ser	Met	Gln	Gln	Asp	Leu	Leu	Tyr	Glu	Ser	Leu	Leu
				85					90					95	
Lys	Ser	His	Cys	Arg	Arg	Thr	Ala	Tyr	Phe	Leu	Asn	Ser	Phe	Asp	Arg
			100					105						110	
Leu	Ser	Leu	Gln	Glu	Asn	Arg	Ala	Arg	Ala	Leu	Phe	Leu	Val	Asn	Lys
		115					120							125	
Pro	Asp	Ala	Asn	Thr	Val	Phe	Ala	Lys	Tyr	Gln	Ala	Asp	Arg	Ala	Tyr
	130					135					140				
Gly	Asp	Ala	Leu	Glu	Leu	Gly	Val	Val	Tyr	Lys	Thr	Glu	Phe	Glu	Lys
145				150						155					160
Ile	Ile	Asp	Ile	Arg	Ala	Asp	Gly	Glu	Glu	Tyr	His	Val	Arg	Phe	Ser
			165					170						175	
Ser	Ile	Leu	Ser	Ile	Ile	Asn	Gly	Asp	Glu	Thr	Arg	Lys	Val	Arg	Ile
		180						185					190		
Leu	Ser	Glu	Gly	Thr	Ala	Ile	His	Ala	Thr	Pro	Arg	Phe	Pro	Glu	Asn
		195				200						205			
Thr	Ser	Gly	Phe	Phe	Phe	Arg	Thr	Tyr	Asp	Gln	Gln	Tyr	Glu	Leu	Leu
	210					215						220			

<210> 10349

<211> 397

<212> PRT

<213> B.fragilis

<400> 10349

Thr	Ala	Phe	Asn	Asn	Ile	Asn	Ile	Glu	Val	Lys	Phe	Asn	Met	Lys	Pro
1				5				10						15	
Asn	Lys	Ile	Tyr	Ile	Thr	Thr	Leu	Leu	Leu	Leu	Phe	Phe	Leu	Ser	Gly
		20					25						30		
Arg	Ala	Gln	Lys	Ile	Glu	Glu	Leu	Thr	Ala	Val	Pro	Leu	Gln	Ile	Gly
	35						40					45			
Tyr	Glu	Lys	Thr	Leu	His	Leu	Ile	Phe	Pro	Thr	Glu	Val	Lys	Tyr	Tyr
	50					55					60				
Ser	Ile	Gly	Gly	Asp	Tyr	Val	Ile	Gly	Glu	Lys	Val	Val	Asn	Cys	Pro
65				70					75					80	
Gly	Ile	Ile	Arg	Leu	Lys	Ala	Ala	Glu	Glu	Asn	Phe	Pro	Gly	Glu	Thr
			85					90						95	
Thr	Leu	Ser	Val	Val	Thr	Ala	Asp	Thr	Lys	Phe	Tyr	Ser	Tyr	Ser	Ile
		100						105						110	
Ser	Tyr	Asn	Ala	His	Pro	Ala	Gln	Ser	Tyr	Val	Arg	Ile	Gly	Gly	Glu
		115					120						125		
Ala	Pro	Thr	Pro	His	Thr	Leu	Pro	Val	Gly	Lys	Glu	Lys	Gln	Leu	Phe
	130					135					140				
Leu	Ile	Phe	Pro	Ala	Gly	Ile	Thr	Tyr	Val	Asp	Tyr	Gly	Ser	Thr	Asn
145				150						155					160
Val	Glu	Val	Asp	Lys	Ala	Glu	Gly	Val	Asp	Asn	Ile	Leu	Ala	Val	Lys
			165					170						175	
Ala	Val	Gln	Pro	Tyr	Lys	Glu	Asp	Thr	Asn	Ile	Ser	Val	Val	Leu	Glu
		180						185						190	
Gly	Gly	Lys	Phe	Tyr	Thr	Phe	Asp	Leu	Arg	Tyr	Val	Pro	Ala	Pro	Glu
		195					200					205			
Arg	Phe	Ser	Phe	Val	Ile	Asp	Lys	Glu	Asp	Thr	Gln	Arg	Val	Ala	Ile
	210					215					220				
Leu	Asp	Glu	Lys	Glu	Arg	Ser	Tyr	Gly	Gln	Lys	Glu	Arg	Ile	Arg	Glu
225				230						235					240
Ala	Val	Ala	Lys	Arg	Ala	Pro	Leu	Asp	Leu	Gly	Leu	Arg	Asp	Lys	Asn
			245						250					255	

10349 397
 B.fragilis
 PRT
 10349 397
 B.fragilis
 PRT

Ser Gly Met Glu Phe Glu Val Gly Asn Ile Phe Ile Asp Gly Asp Val
 260 265 270
 Leu Leu Leu Arg Met Thr Leu Thr Asn Arg Thr Gln Ile Gly Tyr Thr
 275 280 285
 Thr Asp Phe Met Arg Phe Tyr Ile Gln Asp Ala Lys Ile Arg Lys Lys
 290 295 300
 Thr Ala Val Gln Gln Leu Glu Gln Asn Ile Leu Phe Thr Phe Asp Tyr
 305 310 315 320
 Pro Glu Glu Ile Pro Ala His Glu Ser Arg Thr Phe Thr Val Ala Met
 325 330 335
 Asn Lys Phe Thr Ile Pro Asp Lys Lys Arg Leu Ile Ile Glu Ile Gln
 340 345 350
 Glu Arg Asn Gly Gly Arg His Phe Leu Tyr Lys Leu Lys Asn Lys Ser
 355 360 365
 Leu Leu Thr Ala Glu Glu Val Phe Arg Ser Arg Lys Gln Gln Glu Thr
 370 375 380
 Glu Asp Glu Ala Asp Lys Ile Leu Arg Arg Ile Ala Arg
 385 390 395

<210> 10350

<211> 75

<212> PRT

<213> B.fragilis

<400> 10350

Thr Thr Thr Lys Asn Lys Asn Tyr Asn Arg Met Glu Thr Ile Trp Glu
 1 5 10 15
 Lys Val Asp Tyr Leu Gly Arg Ile Leu Cys Cys Ile Ile Met Gly Ile
 20 25 30
 Ala Tyr Ile Leu Ile Met Ile Ala Pro Leu Tyr Ala Ser Arg His Glu
 35 40 45
 Gln Ser Gly Gln Arg Ser Asp Glu Lys Ala Ser Val Asp Gly Glu Glu
 50 55 60
 Lys Val Pro Asp Asn Gly Pro Glu Pro Glu Lys
 65 70 75

<210> 10351

<211> 810

<212> PRT

<213> B.fragilis

<400> 10351

Arg Arg Asn Lys Met Lys Glu Glu Glu Ala Tyr Ser Ile Leu Asp Ile
 1 5 10 15
 Ile Ser Glu Ser Asp Gly Gln Ser Val Ile Leu Thr Arg Ser Gly Ser
 20 25 30
 Ile Cys Ile Pro Phe Glu Leu Arg Gln Pro Glu Cys Tyr Ser Leu Ser
 35 40 45
 Pro Glu Asp Ile Asp Glu Arg Asp Gly Met Tyr Arg Glu Ala Phe Arg
 50 55 60
 His Met Pro Asp Gly Ala Tyr Val His Lys Gln Asp Val Phe Leu Lys
 65 70 75 80
 Lys Glu Tyr His Pro Gly Lys Gly Thr Gly Ser Phe Leu Asp Arg Ala
 85 90 95
 Asp Ala Arg His Phe Glu Gly Arg Leu Tyr Ile Asp His Thr Cys Ile
 100 105 110
 Leu His Phe Val Leu Ala Gly Leu Lys Ser Leu Glu Lys Ala Tyr Val
 115 120 125
 Ser Ser Pro Leu Ala Tyr Lys Glu His Leu His Arg Glu Asp Tyr Arg

	130					135					140				
Lys 145	Leu	Glu	Ala	Phe	Leu 150	Glu	Gly	Val	Asp	Asn 155	Ala	Val	Ser	Ile	Leu 160
Gln	Asn	Met	Arg	Gly 165	Asn	Ser	Val	Leu	Pro	Met 170	Ser	Cys	Glu	Gly	Ile 175
Ser	Gly	Phe	Thr 180	Arg	Ala	Tyr	Ser	Gly 185	Leu	Phe	Gly	Asp	Thr	Asp	Ala 190
Val	Val	Asp 195	Ile	His	Val	Asp	Gly 200	Ser	Leu	His	Val	Gly 205	Lys	Asn	His
Ala	Arg	Cys 210	Tyr	Ala	Val	Cys 215	Asp	Glu	Thr	Phe	Leu 220	Pro	Glu	Gly	Asn
Ile 225	Glu	Ser	Tyr	Val	Arg	Asp 230	Glu	Ser	Leu	Pro	Pro	Ala	Ala	Ser	Gln 240
Leu	Tyr	His	Pro	Leu 245	Met	Glu	Gln	Leu	Gly	Met	Tyr	Leu	Pro	Tyr	Asn 255
His	Ile	Val	Asn 260	Gln	Val	Ile	Tyr	Phe	Glu	Gly	Asn	Glu	Arg	Leu	Arg 270
Ser	Arg	Ile 275	Ala	Arg	Asn	Ile	Asp 280	Ile	Tyr	Gly	Ser	Asn	Ser	Ser	Met 285
Asn	Lys	Gly 290	Ile	Glu	Arg	Glu 295	Phe	Lys	Glu	Leu	Glu 300	Lys	Leu	Gln	Thr
Glu 305	Ile	Leu	Glu	Glu	Asn 310	Gln	Met	Leu	Val	Arg	Ser	Phe	Phe	Ser	Val 320
Cys	Val	Phe	Asp	Gly 325	Ser	Asp	Thr	Glu	Leu	Glu	Lys	Ala	Asp	Lys	Arg 335
Ile	Arg	Glu	Ile 340	Leu	Asn	Leu	Asn	Arg	Phe	Lys	Tyr	Tyr	Ile	Pro	Gly 350
Tyr	Gly	Asn 355	Leu	Ala	Arg	Met	His 360	Phe	Ala	Cys	Val	Pro	Gly	Gln	Ile 365
Ser	Leu	Met 370	Pro	Val	Glu	Tyr 375	Leu	Phe	Leu	Thr	Thr	Leu	Pro	Ile	Ala 380
Leu 385	Cys	Phe	Phe	Leu	Gln 390	Cys	Gly	Lys	Phe	Ser	Asn	Asp	Ala	Glu	Gly 400
Ile	Tyr	Val	His 405	Asp	Arg	Met	Tyr	Gln	Val	Pro	Leu	Arg	Lys	Asp	Ile 415
Trp	Asp	Ala	Ala 420	Lys	Lys	Arg	Val	Asn	Ala	Arg	Asn	Gly	Met	Val	Ile 430
Ala	Gly	Thr	Gly 435	Gly	Gly	Lys	Ser	Ala	Phe	Thr	Leu	Asn	Phe	Thr	Gln 445
Gln	Leu	Ile	Glu	Gln	Asp	Tyr 455	Thr	Thr	Ile	Val	Val	Glu	Phe	Gly	Asn 460
Ser 465	Phe	Ser	Gln	Leu	Cys 470	Lys	Leu	Tyr	Pro	Asp	Ile	Ser	Leu	His	Val 480
Asp	Tyr	Asp	Gly 485	Lys	Thr	Pro	Leu	Gly	Ile	Asn	Pro	Phe	Asp	Leu	Gln 495
Gly	Gly	Glu	Pro 500	Asp	Asn	Asn	Asp	Leu	Glu	Thr	Leu	Ser	Gly	Ile	Val 510
Gln	Arg	Tyr	Trp 515	Lys	His	Met	Phe 520	Thr	Lys	Asp	Glu	Ser	Glu	Lys	Glu 525
Val	Ala	Leu	Thr 530	Arg	Phe	Ile 535	Gln	Asp	Tyr	Tyr	Glu	His	Val	Arg	Gln 540
Gly 545	His	Asn	Phe	Glu	Ser	Phe 550	Tyr	Asn	Tyr	Val	Ile	Asp	Asn	Tyr	Asp 560
Glu	Ile	Leu	Glu	Arg 565	Lys	His	Ile	Pro	Gly	Thr	Tyr	Phe	Thr	Ile	Glu 575
Ser	Phe	Lys	Leu 580	Asn	Cys	Gly	Glu	Phe	Met	Pro	Gly	Gln	Arg	Tyr	Glu 590
Asn	Val	Cys 595	Lys	Asp	Met	Lys	Ile 600	Asp	Phe	Ser	Gly	Lys	Lys	Phe	Ile 605

Val Phe Glu Leu Thr Arg Ile Lys Gln Asp Arg Phe Leu Ser Asn Leu
 610 615 620
 Val Met Ser Met Ile Phe Thr Val Ile Gln Lys Lys Leu Leu Ser Asp
 625 630 635 640
 Arg Arg Lys Arg Gly Ile Leu Ile Phe Asp Glu Tyr Ala Glu Thr Ala
 645 650 655
 Gln Met Val Asp Thr Ala Thr Gly Ser Gly Ile His Ser Ser Val Ala
 660 665 670
 Phe Cys Tyr Gln Lys Ile Arg Lys Glu Asn Gly Ala Val Tyr Thr Ile
 675 680 685
 Val Gln Thr Pro Asp Gln Leu Pro Asp Asp Glu Asn Thr Lys Asn Ile
 690 695 700
 Ile Ser Asn Thr Asp Met Leu Phe Val Leu Pro Thr Lys Glu Val Ile
 705 710 715 720
 Tyr Arg Thr Ile Ile Asp Lys Phe Lys Leu Thr Gln Pro Gly Gln Ile
 725 730 735
 Ala Leu Met Lys Ser Met Arg Asn Asn Phe Ala Gly Ser Arg Pro Tyr
 740 745 750
 Ser Glu Cys Phe Met Arg Met Gly Glu Asn Tyr Ala Thr Val Thr Arg
 755 760 765
 Leu Glu Phe Ser Arg Glu Lys Phe Leu Ala Phe Gln Thr Glu Gly Glu
 770 775 780
 Ile Leu Ser Asp Leu Glu Asp Lys Thr Gly Ser Gly Lys Ser Met Gln
 785 790 795 800
 Glu Ala Ile Glu Glu Tyr Ile Asn Glu His
 805 810

<210> 10352

<211> 193

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (161)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10352

Ser Arg Gln Asn Ile Lys Glu Asp Ser Pro Met Lys Leu Leu Leu Pro
 1 5 10 15
 Leu Leu Leu Phe Cys Leu Pro Phe Asn Gly Ser Asn Gly Gly Lys Glu
 20 25 30
 Leu Leu Asp Lys Ala Leu Asp Arg Cys Glu Arg Leu Glu Thr Leu Glu
 35 40 45
 Asn Tyr Arg Asp Ile Leu Ser Arg Tyr Gly Val Ser Asp Lys Ile Pro
 50 55 60
 Leu Ala Cys Pro Leu Lys Asp Arg Phe Arg Lys Ser Ser Gly Phe Gly
 65 70 75 80
 Ile Arg Ile His Pro Ile Thr Gly Lys Arg Ser Phe His Ser Gly Ile
 85 90 95
 Asp Met Ala Val Gly Leu Ala Ala Pro Val Tyr Ala Thr Ala Ser Gly
 100 105 110
 Thr Val Ser Phe Ala Gly Arg Lys Gly Gly Tyr Gly Arg Cys Val Ile
 115 120 125
 Ile Arg His Ser Tyr Gly Phe Glu Thr Leu Tyr Ala His Leu Ala Ala
 130 135 140
 Tyr Tyr Thr Thr Glu Gly Gln Lys Val Asp Lys Gly Ala Val Ile Ala
 145 150 155 160
 Xaa Ala Gly Ser Thr Gly Lys Ser Thr Gly Tyr His Leu His Tyr Glu

165 170 175
 Ile Arg Lys Asn Gly Lys Pro Ile Lys Pro Tyr Trp Tyr Gly Tyr Asp
 180 185 190
 Asp

<210> 10353
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 10353
 Gln Lys Met Lys Ile Lys Val Tyr Lys His Ile Ala Met Phe Leu Leu
 1 5 10 15
 Pro Ala Ala Leu Thr Gly Cys Ser Gly Lys Glu Asp Ser Leu Pro Gly
 20 25 30
 Thr Gly Glu Ala Gly Leu Glu Ile Glu Asn Cys Phe Ser Arg Ser Thr
 35 40 45
 Gly Thr Asp Thr Gly His Val Pro Val Lys Asp Phe Gly Met Val Leu
 50 55 60
 Leu Asp Glu Thr Gly Gly Ser Tyr Thr Gly Val Ser Asn Pro Leu His
 65 70 75 80
 Val Thr Tyr Gly Glu Ser Trp Asn Phe Pro Gln Val Thr Leu Thr Gln
 85 90 95
 Lys Thr Cys Arg Leu Phe Ala Phe Ser Pro Phe Arg Ser Ile Pro Gly
 100 105 110
 Lys Glu Val Ala Val Ser Leu Ser Pro Gln Thr Asp Tyr Leu Ala Ser
 115 120 125
 Asp Glu Val Arg Leu Asp Trp Gln Asn Pro Gln Ala Ser Ile Glu Met
 130 135 140
 Lys His Leu Leu Ser Leu Leu Gly Ile Tyr Arg Arg Arg Glu Pro Gly
 145 150 155 160
 Met Gln Pro Glu Cys Gly Ser Arg Thr Asp Arg Gly His Ile Arg Leu
 165 170 175
 Tyr Arg Arg Tyr Ile Val Arg Lys Arg Gly Lys Arg His Arg Phe Phe
 180 185 190
 Gln Gly Glu His Ala Ala Ala Pro Ala Arg Gln Ala
 195 200

<210> 10354
 <211> 73
 <212> PRT
 <213> B.fragilis

<400> 10354
 Ala Ser Arg Phe Ile Glu Gln His His Ala Glu Val Leu Tyr Arg Asn
 1 5 10 15
 Met Ala Arg Ile Arg Thr Gly Thr Ala Ala Glu Thr Val Phe Tyr Leu
 20 25 30
 Lys Ser Arg Leu Ser Cys Pro Gly Glu Gly Ile Phe Leu Ala Gly Thr
 35 40 45
 Ala Arg Lys Gly Arg Arg Gln Lys Lys His Gly Tyr Val Phe Ile His
 50 55 60
 Phe Tyr Phe His Phe Leu Leu Phe Val
 65 70

<210> 10355
 <211> 140
 <212> PRT

<213> B.fragilis

<400> 10355

```

Leu Arg Val Asp Pro Glu Gln Gly Arg Gly Ala His Thr Leu Arg Cys
1          5          10          15
Glu Cys Pro Ser Leu Gly Asn Gly Arg Arg Leu Tyr Arg Asn His Thr
20          25          30
Thr Leu Lys Thr Thr Ile Met Lys Arg Lys Phe Leu Leu Ser Ala Phe
35          40          45
Leu Phe Ala Ser Thr Leu Arg Gly Tyr Ala Gln Asp Ala Arg Gly Ala
50          55          60
Met Asn Gln Ile Leu Asp Gly Tyr Thr Leu Pro Ile Phe Ala Ala Cys
65          70          75          80
Met Leu Val Gly Leu Ala Leu Gly Val Val Gln Gln Leu Asp Asn Ile
85          90          95
Ile Asp Lys Glu Asn Arg Gly Thr Arg Arg Asp Gly Leu Phe Ala Leu
100         105         110
Gly Trp Tyr Val Gly Phe Ser Leu Leu Ala Gly Val Val Ile Thr Ala
115         120         125
Ala Lys Ala Ala Ile Ser Gly Ile Lys Leu Thr Ile
130         135         140

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<210> 10356

<211> 62

<212> PRT

<213> B.fragilis

<400> 10356

```

Asn Arg Cys Asp Met Glu Thr Ile Gln Glu Ile Ile Asp Met Ile Lys
1          5          10          15
Glu Leu Ser Gly Arg Asp Ile Leu Phe Leu Ser Phe Tyr Cys Gly Phe
20          25          30
Ile Leu Ile Leu Ser Ile His Arg Ser Asp Glu Lys Ala Ser Val Asp
35          40          45
Glu Glu Glu Lys Val Pro Asp Asn Gly Pro Glu Pro Glu Lys
50          55          60

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<210> 10357

<211> 434

<212> PRT

<213> B.fragilis

<400> 10357

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Lys Arg Cys Asp Met Glu Thr Ile Gln Glu Ile Ile Asp Thr Ile Lys
1          5          10          15
Gln Trp Pro Ser Thr Ile Trp Trp Val Met Gly Ala Leu Phe Ile Ile
20          25          30
Ser Trp Phe Trp Asp Thr Pro Leu Arg Lys Lys Arg Asn Lys Asp Lys
35          40          45
Val Thr Asp Asp Lys Asn Asn Asn Leu Lys Ser Ser Asn Met Thr Asp
50          55          60
Lys Lys Glu Leu Arg Gly Asn Leu Met Lys Glu Gly Val Ile Leu Trp
65          70          75          80
Thr Val Phe Thr Gly Glu Gly Lys Ala Ala Leu Arg Met Asp Asn Glu
85          90          95
Ile His Ala Glu Asn Gly Lys Ile Gly His Gly Arg Leu Leu Ser Pro
100         105         110
Asp Val Pro Val Leu His Glu Ile Leu Thr Pro Asp Asn Ala Tyr Ser
115         120         125

```

Phe Leu Ser Leu Ser Glu Ile Gly Val Trp Ile Arg Ile Arg Met Arg
 130 135 140
 Leu Arg Tyr Pro Gly Ile Glu Asp Ser Ala Val Lys Gln Ser Glu Tyr
 145 150 155 160
 Glu Pro Glu Met Cys Phe Pro Ala Trp Ile Ala Gly Glu Lys Thr Gly
 165 170 175
 Arg Ile Ser Leu Phe Leu Gln Glu Pro Ser Thr Gly Ile Cys Ala Ile
 180 185 190
 Pro Asp Met Val Gly Ile Pro Gly Leu Pro Asp Leu Gln Pro Asp Ser
 195 200 205
 Val Pro Val Lys Val Glu Met Leu Ile Arg Lys Ala Ser Pro Leu Leu
 210 215 220
 Glu His Pro Glu Tyr Ser Glu Asp Ile Lys Lys Arg Ala Asp Arg Lys
 225 230 235 240
 Ser Asn Leu Met Lys Glu Gly Val Leu Val Trp Ile Met Phe Thr Ala
 245 250 255
 Gly Glu Lys Ala Val Leu Tyr Ala Asn Asp Arg Ile His Phe Thr Glu
 260 265 270
 Asp Gly Lys Tyr Val Pro Gly Lys Leu Leu Ser Ser Asp Ile Ser Pro
 275 280 285
 Phe His Gln Ile Tyr Asp Trp Asp Val Gln Tyr Pro Trp Ile Arg Ser
 290 295 300
 Lys Pro Glu Ile Ser Val Arg Tyr Arg Ile Arg Leu Arg Tyr Pro Gly
 305 310 315 320
 Ala Asn Asp Ala Gly Ile Glu Gln Ser Glu Tyr Glu Pro Glu Ala Cys
 325 330 335
 Phe Pro Ala Trp Ile Val Pro Gln Glu Gly Gly Gln Thr Gly Leu Cys
 340 345 350
 Leu Glu Glu Pro Ser Thr Gly Gln Tyr Phe Ile Pro Asp Met Thr Gly
 355 360 365
 Leu Pro Gly Leu Pro Glu Leu Gln Pro Asp Gly Ile Pro Leu Arg Val
 370 375 380
 Glu Leu Leu Ile Arg Gln Ala His Trp Ile Ser Asp Val Ala Asp Pro
 385 390 395 400
 Ala Tyr Leu Lys Ile Ser Tyr Ser Ala Ser Leu Lys Ala Phe Ser
 405 410 415
 Thr Lys Ile Ser Asp Asn Gln Glu Val Lys Ser Cys Asn Ile Gln Thr
 420 425 430
 Glu Ile

<210> 10358

<211> 154

<212> PRT

<213> B.fragilis

<400> 10358

Ala Leu Leu Asp Val Pro Glu Pro Pro Val Lys Thr Val Gln Arg Leu
 1 5 10 15
 Asn Ile Gln Ile Asn Val Ser Gly Asn Thr Ala Pro Leu Ala Gly Leu
 20 25 30
 Lys Gly Thr Leu Thr Gly Ile Ser Thr Gly Arg Tyr Leu Val Ser Arg
 35 40 45
 Glu Arg Thr Gly Asn Ala Ser Val Thr Ser Leu Phe Ala Arg Lys Pro
 50 55 60
 Glu Thr Asp Arg Trp Lys Thr Ser Leu Tyr Ala Phe Gly Phe Asn Pro
 65 70 75 80
 Ala Ala Glu Asn Ile Leu Ser Val Lys Ile Glu Met Asp Gly Lys Asp
 85 90 95

Ser Val Phe Asn Glu Glu Gln Lys Val Asp Leu Thr Pro Tyr Leu Arg
 100 105 110
 Gly Phe Asp Ser Asp Glu Leu Ser Leu Glu Leu Asp Leu His Ile Gly
 115 120 125
 Lys Glu Leu Thr Ile Gly Glu Pro Val Val Ile Pro Asp Trp Glu Asp
 130 135 140
 Ile Pro Glu Thr Glu Leu Pro Asn Tyr Asn
 145 150

<210> 10359

<211> 283

<212> PRT

<213> B.fragilis

<400> 10359

Gly Gly Lys Glu Asn Ser Gln Asp Leu Pro Gly Asn Lys Pro Val Arg
 1 5 10 15
 Thr Ala Gln Lys Gly Ile Glu Val Arg Gly Met Glu Glu Ala Tyr Gly
 20 25 30
 Asn Leu Asn Ala Ala Tyr Leu Gln Ile Lys Gly Met Val Val Ile Glu
 35 40 45
 Gly Phe Tyr Ala Leu Ile Ala Gly Phe Val Ile Thr Thr Phe Val Phe
 50 55 60
 Lys Leu Val Gly Ile Ile Lys Glu Met Thr Asn Glu Gly Lys Gly Phe
 65 70 75 80
 Asn Ala Arg His Phe Tyr Glu Leu Gly Arg Glu Tyr Ile Phe Cys Ile
 85 90 95
 Gly Leu Ile Cys Ile Met Pro Val Leu Leu Gly Ala Leu Glu Thr Val
 100 105 110
 Leu Ala Tyr Gly Ala Asp Glu Leu Met Lys Ser Leu Ala Ser Gly Gly
 115 120 125
 Val Tyr Asn Pro His Asn Ile Trp Lys Asp Pro Ile Ser Ala Met Leu
 130 135 140
 Asp Glu Leu Met Asn Gly Asp Ile Thr Asp Ile Ala Val Asn Gly Ile
 145 150 155 160
 Asp Thr Leu Lys Trp Ser Leu Ile Ser Gly Thr Val Gly Ser Leu Phe
 165 170 175
 Gly Val Ala Tyr Asp Tyr Ile Met Leu Leu Phe Leu Cys Thr Arg Tyr
 180 185 190
 Leu Ile Leu Leu Leu Leu Glu Ile Ile Ser Pro Ile Ala Ile Ala Cys
 195 200 205
 Leu Tyr Asn Lys Asp Thr Arg Ser Ser Phe Tyr Thr Trp Val Lys Gln
 210 215 220
 Met Leu Gly Cys Tyr Met Leu Tyr Pro Gly Phe Ile Leu Ala Ser Val
 225 230 235 240
 Phe Ser Asp Leu Ile Val Thr Asn Tyr Val Leu Gln Arg Ser Trp Ser
 245 250 255
 Val Leu Leu Met Val Ile Phe Ser Phe Leu Leu Lys Leu Thr Met Leu
 260 265 270
 Gly Thr Val Lys Ala Thr Val Asn Lys Trp Leu
 275 280

<210> 10360

<211> 548

<212> PRT

<213> B.fragilis

<400> 10360

Pro Ala Gly Glu Pro Ser Gly Ser Pro Ile Lys Lys Arg Ile Met Val

1	5	10	15
Arg Ala Ile Thr Thr Ile Val Cys Ser Leu Leu Leu Leu Leu Ala Phe			
	20	25	30
Ser Cys Ser Arg Glu Asp Thr Gly Pro Gln Glu Thr Ile Pro Gly Ser			
	35	40	45
Gly Ile Val Thr Phe Thr Ala Met Thr Gly Gln Gly Glu Thr Arg Ser			
	50	55	60
Ser Gln Glu Gly Ser Phe Glu Thr Gly Asp Ala Ile Gly Val Phe Ala			
65	70	75	80
Ile Glu Pro Lys Thr Gly Val Tyr Trp Ala Val Asn Asn Lys Tyr Thr			
	85	90	95
Tyr Asp Gly Gln Lys Phe Lys Pro Glu Ala Glu Ala Asp Asn Ile Ile			
	100	105	110
Val Thr Val Gly Thr Asp Phe Asp Phe Tyr Val Tyr Tyr Pro Phe Lys			
	115	120	125
Ala Gly Gln Thr Asp Ile Thr Gly Ile Ser His Thr Ala Gly Asn Gln			
	130	135	140
Ser Asp Lys Ser Gly Trp Leu Ser Ala Asp Phe Met Thr Ala Thr Tyr			
145	150	155	160
Thr Asp Pro Ile Arg Asn Tyr Thr Val Pro Leu His Phe Lys His Arg			
	165	170	175
Met Ser Thr Val Glu Val Arg Ile Asp Arg Asn Asp Gly Val Arg Glu			
	180	185	190
Ala Thr Met Glu Asn Val Lys Arg Thr Ser Arg Phe Asn Leu Leu Thr			
	195	200	205
Gly Gly Ile Thr Thr Asp Glu Ser Arg Gly Ser Cys Thr Met His Lys			
	210	215	220
Tyr Ser Glu Thr Gly Gly Thr Thr Val Phe Arg Val Thr Ile Pro Ala			
225	230	235	240
Gln Arg Leu Thr Thr Ser Ser Asn Tyr Val Ala Leu Thr Gly Thr Thr			
	245	250	255
Pro Ile Lys Leu Arg Gly Thr Ser Asp Met Val Thr Glu Glu Gly Lys			
	260	265	270
Ile His Asn Tyr Arg Met Asp Tyr Lys Lys Gln Val Thr Ile Leu Asp			
	275	280	285
Tyr Ala Pro Gly Gly Thr Thr Thr Gly Ala Gly Leu Tyr Asn Thr Gly			
	290	295	300
Ser Asn Cys Thr Val Ser Ala Ser Val Lys Pro Gly Tyr Glu Phe Ala			
305	310	315	320
Gly Trp Tyr Glu Gly Gly Arg Ile Val Ser Gly Thr Ala Gln Tyr Ser			
	325	330	335
Phe Glu Val Leu Ala Asp Arg Thr Leu Glu Pro Lys Tyr Arg Asn Tyr			
	340	345	350
Gly Ser Trp Arg Val Thr Leu Thr Ala Asn Pro Ser Ala Ile Ser Trp			
	355	360	365
Lys Gly Gly Thr Ser Thr Leu Ser Ala Gly Ala Ser Arg Glu Val Phe			
	370	375	380
Val Asn Gly Val Lys Glu Thr Leu Gln Gly Gly Ser Pro Ser Ile Ser			
385	390	395	400
Gly Gly Thr Glu Gly Phe Phe Leu Ser Gly Asn Thr Val Ser Val Ser			
	405	410	415
Glu Asn Asn Thr Ala Ser Ala Arg Ser Cys Val Phe Thr Ala Ser His			
	420	425	430
Gly Gly Ser Ser Ala Thr Ala Thr Ile Ser Gln Glu Ala Pro Pro Val			
	435	440	445
Ser Tyr Val Phe Glu Tyr Ser Asp Gly Thr Val Ala His Ser Glu Arg			
	450	455	460
Ala Glu Ala Gly Ala Gly Ser Phe Leu Leu Ser Ile Thr Ser Arg Lys			
465	470	475	480

115	120	125
Gly Lys Glu Lys Pro Ala Leu Gln Glu Lys Lys Glu Glu Glu Val Arg		
130	135	140
Pro Gly Gln Arg Lys Ala Met Asp Ser Val Pro Arg Ala Pro Thr Arg		
145	150	155
Arg Gly Phe Asn Thr Val Arg Leu Val Arg Gln Glu Glu Arg Asn Val		
165	170	175
Ile Lys Ala Phe Val His Ser Thr Gln Thr Gly Met Val Gly Phe His		
180	185	190
Pro Gln Asp Ala Ala Gly Arg Glu Leu Pro Asp Arg		
195	200	

<210> 10363

<211> 177

<212> PRT

<213> B.fragilis

<400> 10363

Asn Lys Lys Arg Met Lys Lys Leu Cys Leu Ser Leu Ile Val Met Met	
1 5 10 15	
Thr Ala Asp Thr Val Ser Ala Gln Trp Ala Val Thr Asp Ala Gly Asn	
20 25 30	
Leu Ser Gln Asn Leu Lys Asn Leu Lys Glu Leu His Arg Gln Val Gly	
35 40 45	
Tyr Leu Lys Glu Gln Lys Ser Leu Leu Asp Glu Ser Leu Asp Met Met	
50 55 60	
Arg Lys Val Asn Ser Val Val Ser Asp Cys Glu Thr Thr Arg Tyr Ile	
65 70 75 80	
Ile Glu Arg Gln Ala Arg Leu Ser Glu Lys Cys Val Asp Leu Leu Ser	
85 90 95	
Gly Lys Gln Leu Asn Pro Ser Thr Leu Gln Thr Leu Ile Gly Ser Ile	
100 105 110	
Glu Gln Ile Met Ala Gly Asn Arg Arg Leu Ile Gln Leu Ser Arg Thr	
115 120 125	
Ile Leu Ser Thr Ser Val Arg Met Asn Asp Ala Glu Arg Leu Ser Thr	
130 135 140	
Leu Gln Asn Ile Glu Arg Gln Thr Leu Glu Glu Arg Lys Ile Ala	
145 150 155 160	
Arg Ile Ser Gln Val Ile Ser Gln Tyr Glu Gln Leu Lys Arg Ala Leu	
165 170 175	

Arg

<210> 10364

<211> 151

<212> PRT

<213> B.fragilis

<400> 10364

Ala Phe Thr Ile Ile Asn Ile Met Pro Thr Asn Tyr Asn Gln Leu Leu	
1 5 10 15	
Lys Asp Leu Glu Ile Gly Ser Val Tyr Ile Lys Ile Phe Ile Cys Phe	
20 25 30	
Leu Gly Cys Thr Phe Met Leu Tyr Pro Val Leu Phe Tyr Phe Thr His	
35 40 45	
Phe Phe Arg Glu Leu Ser Val Tyr Glu Gln Ile Phe Phe Ala Leu Gly	
50 55 60	
Ser Ser Ala Leu Tyr Thr Gly Leu Gly Val Pro Leu Ser Ile Thr Ser	
65 70 75 80	

Ala Ile Arg Tyr Pro Gly Val Phe Tyr Leu Pro Leu Met Leu Leu Ser
 85 90 95
 Val Ser Val Ile Ala Thr Ile Tyr Ile Val Phe Phe Met Ala Arg Ser
 100 105 110
 Tyr Asp Pro Leu Thr Thr Leu Leu Trp Ile Leu Pro Thr Ser Tyr Leu
 115 120 125
 Leu Asn Leu Ile Thr Gly Val Ile Ser Ile Leu Arg Glu Lys Lys Tyr
 130 135 140
 Pro Lys Thr Glu Met Tyr Tyr
 145 150

<210> 10365
 <211> 217
 <212> PRT
 <213> B.fragilis

<400> 10365
 Glu Leu Val Leu Leu Val Ile Gly Thr Glu Glu Glu Thr Gly Arg Ile
 1 5 10 15
 Phe Arg Lys Ala Arg Gly Gly Met Asp Gly Gly Thr Leu Thr Gln Asp
 20 25 30
 Pro His Phe Pro Gly Leu Ile Ala Val Asp Asp Ala Gln Asp Gly Gly
 35 40 45
 Glu Pro Asp Met Val Leu Leu Thr Val Gly Ala Tyr Val Asp Asp Leu
 50 55 60
 Phe Lys Leu Arg Leu Val Asp Asn Ser Glu Phe Gln Arg Ile Ala Ile
 65 70 75 80
 Gly Thr Val Arg Leu Val Phe Gly Lys Tyr Gly Ile Cys Val Arg Leu
 85 90 95
 Ile Asp Gln Glu Gln Gly Thr Gly Thr Val Phe Leu Lys Gly Lys Pro
 100 105 110
 Val Glu Ala Val Gln Glu Ile Gly Arg Pro Ala Ala Val Ala Phe Gln
 115 120 125
 Glu Ala Phe Val Gln Gln Val Leu Leu His Gly Leu Glu Met Asp Glu
 130 135 140
 Phe Pro Ala Phe Val Asp His Gln Tyr Leu Val His Arg Ile Val His
 145 150 155 160
 His Ala Val Arg Glu Glu Gln Asp His Arg Asp Gly Tyr Pro Ala Glu
 165 170 175
 Asn Glu Tyr Gln Pro Gly Ala Gln Arg Ile Ala Leu Pro Gly Phe Gly
 180 185 190
 Gln Ala Gly Glu Ile Leu Glu Tyr Ala Leu Tyr Ile Glu Tyr Ala Phe
 195 200 205
 Gly Cys Phe His Glu Ser Phe Ile Ile
 210 215

<210> 10366
 <211> 204
 <212> PRT
 <213> B.fragilis

<400> 10366
 Asn Phe His Lys Arg Arg Pro Asn Gln Ser Asn Phe Phe Lys Lys Glu
 1 5 10 15
 Arg Asp Pro Arg Ile Leu Tyr Leu Gln Val Arg Gln Gln Gly Gln Pro
 20 25 30
 Gln Ala Lys Glu Arg Phe Arg Asp Leu Phe Val Ile Gly Cys Leu Thr
 35 40 45
 Ala Leu Arg Tyr Ser Asp Tyr Ser Thr Leu Thr Gln Asp Asn Leu Gln

50		55		60
Gly Cys Phe Ile Val	Lys Arg Thr Arg Lys Thr	Asn Val Asp Val Lys		
65	70	75	80	
Val Pro Ala His Asp Tyr Val	Lys Glu Ile Phe Glu Lys Tyr Asp Gly			
	85	90	95	
Asp Ile Pro Thr Gly Leu Cys Ile	Gln His Phe Asn Lys Tyr Leu Lys			
	100	105	110	
Val Ile Met Arg Glu Ile Gly Leu Thr	Asp Lys Val Ser Tyr Ser Phe			
	115	120	125	
Thr Gln Gly Gly Lys Leu His Thr Val	Thr Lys Glu Lys Trp Glu Leu			
	130	135	140	
Ile Ser Ser His Thr Ala Arg Arg Ser	Ala Ala Thr Asn Met Tyr Leu			
145	150	155	160	
Thr Gly Arg Met Lys Thr Leu Glu Ile	Met Lys Leu Thr Arg His Arg			
	165	170	175	
Ser Glu His Asn Phe Phe Arg Tyr Ile	Arg Leu Thr Gly Asp Asp Thr			
	180	185	190	
Ala Arg Ser Ile Ser Gly Asp Met Phe	Phe Arg Lys			
	195	200		

<210> 10367

<211> 71

<212> PRT

<213> B.fragilis

<400> 10367

Arg Ile Leu Lys Ile Ile Thr Met Lys Lys Phe Ile Glu Val Ser Thr		
1	5	10
Glu Asn Gly Lys Phe Leu Val Asn Val Asn Thr Ile Ser Cys Leu Tyr		
	20	25
Thr Ile Lys Asp Gly Arg Thr Arg Ile Thr Leu Thr Ala Pro Ser Ser		
	35	40
Lys Gly Asp Ile Phe Ile Asn Ala Gln Glu Ser Tyr Glu Glu Val Lys		
	50	55
Ala Leu Ile Lys Ala Ala Leu		
65	70	

<210> 10368

<211> 79

<212> PRT

<213> B.fragilis

<400> 10368

Asp Met Asn Ile Asp Thr Glu Phe Asn Val Gly Asp Ser Val Cys Tyr		
1	5	10
Leu Ser Gly Asp Asn Ile Cys His Ser Thr Ile Ser Lys Ile Thr Ile		
	20	25
Glu Ile Ser Tyr Thr Asp Arg Ser Phe Ser Met Val Tyr Lys Leu Ser		
	35	40
Asp Gly Leu Ser Val Pro Arg Asn Asn Tyr Pro Gln Trp Asp Lys Lys		
	50	55
Leu Phe Arg Asp Lys Asp Asp Leu Ile Arg Tyr Leu Ser Glu Ser		
65	70	75

<210> 10369

<211> 150

<212> PRT

<213> B.fragilis

<400> 10369

```

Leu Lys Arg Ile Leu Glu Lys Ser Met Lys Ser Thr Glu Ile Leu Lys
1           5           10           15
Arg Ile Gln Ile Gln His Leu Leu Thr Ser Ser Ala Val Asp Ser Leu
          20           25           30
Ala Arg Thr Ser Ala Leu Leu Glu Lys Val Ser Glu Leu Ser Val Lys
          35           40           45
Glu Ala Ala Tyr Gly Leu Lys Cys Ile Glu Leu Tyr Gly Lys Leu Asp
          50           55           60
Leu Asn Thr Ser Ser Leu Lys Thr Ala Gln Cys Ser Leu Phe Gly Asp
65           70           75           80
Leu Asn Glu Ser Tyr Ala Thr Phe Pro Lys Ser Gly Met Met Gln Asn
          85           90           95
Gly Asn Val Tyr Gln Ala Pro Thr Leu Val Tyr Asn Arg Val Gly Asn
          100          105          110
Gly Tyr Ile Val Leu Pro Thr Pro Val Lys Ser Thr Ala Asn Gly Ala
          115          120          125
Cys Lys Asn Arg Tyr Phe Gly Ser Pro Thr Ser Ser Pro Arg Gly Trp
          130          135          140
Lys Asp Ser Ala Cys Val
145           150

```

<210> 10370

<211> 72

<212> PRT

<213> B.fragilis

<400> 10370

```

Tyr Arg Gln Ile His Lys Arg Arg Tyr Val Phe Gln Lys Ile Asn Leu
1           5           10           15
Leu Asn Phe Lys Ile Thr Ile Met Ile Lys Lys Ile Ile Arg Tyr Leu
          20           25           30
Arg Lys Arg Lys Asp Met Lys Leu Arg Lys Trp Cys Ile Thr Leu Ala
          35           40           45
Ala Asn Glu Leu Ser Arg Gly Glu Ala Ile Asp Ala Ala Asn Glu Ile
          50           55           60
Tyr Lys Trp Val Lys Glu Gln Pro
65           70

```

<210> 10371

<211> 205

<212> PRT

<213> B.fragilis

<400> 10371

```

Ser Tyr Lys Ile Phe Ile Arg Ile Ile Thr Asn Leu Glu Met Lys Gln
1           5           10           15
Ser Glu Leu Thr His Gly Ser Leu Phe Ser Gly Ile Glu Gly Phe Gly
          20           25           30
Leu Gly Ala Ala Phe Ser Gly Ile Arg Thr Leu Trp Ser Cys Glu Tyr
          35           40           45
Glu Asp Tyr Gln Thr Ser Ile Ile Lys Lys Asn Phe Gly Glu Glu His
          50           55           60
Glu Ile Asn Arg Asp Ile Lys Thr Tyr Ser Asn Pro Thr Phe Val Asp
65           70           75           80
Ile Ile Ser Gly Gly Phe Pro Cys Gln Asp Ile Ser Val Ala Gly Lys
          85           90           95
Gly Val Gly Ile Val Gly Glu Arg Ser Gly Leu Trp Thr Glu Met Tyr
          100          105          110

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Arg Val Ile Arg Glu Val Arg Pro Lys Tyr Ile Ile Ile Glu Asn Ser
      115              120              125
Pro Met Leu Leu Ile Arg Gly Phe Glu Arg Val Leu Cys Asn Leu Ser
      130              135              140
Glu Ile Gly Tyr Asp Ala Glu Trp Gln Cys Leu Ser Gly Thr Asp Phe
      145              150              155              160
Gly Ile Gln Gln Gly Arg Glu Arg Leu Tyr Cys Leu Ala Tyr Ser Cys
              165              170              175
Glu Ile Asn Ser Lys Arg Ser Met Gln Glu Ser Ile Phe Arg Lys Pro
              180              185              190
Tyr Val Phe Thr Thr Gly Leu Glu Gly Gln Arg Val Arg
      195              200              205

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<210> 10372

<211> 276

<212> PRT

<213> B.fragilis

<400> 10372

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Tyr Ile Ser Leu Trp Arg His Arg Pro Cys Arg Arg Ser Asn Phe Ser
1      5      10      15
Ile Pro Asp Arg Val Lys Tyr Asp Lys Asp Cys Phe Thr Ile Glu Gly
      20      25      30
Lys Asp Ile Phe Ile Leu Ser Ala Phe His Tyr Phe Arg Cys Pro
      35      40      45
Gln Glu Leu Trp Arg Asp Arg Phe Arg Lys Ile Lys Glu Ala Gly Phe
      50      55      60
Asn Thr Val Glu Thr Tyr Val Pro Trp Asn Trp His Glu Arg Asn Met
      65      70      75      80
Pro Lys Ser Val Asp Asp Tyr Ser Gln Cys Asn Phe Asp Asp Leu Lys
      85      90      95
Ala Trp Leu His Met Ala His Glu Glu Phe Gly Leu Tyr Thr Ile Val
      100      105      110
Arg Pro Gly Pro Phe Ile Cys Ala Glu Trp Ala Gly Gly Ala Tyr Pro
      115      120      125
Arg Trp Leu Ala Lys Phe Cys Pro Asp Ser Tyr Asp Thr Ser Phe Trp
      130      135      140
Leu Arg Ser Asn His Pro Glu His Met Lys Trp Ser Glu His Trp Tyr
      145      150      155      160
Asn Ala Val Cys Arg Val Phe Ser Glu Glu Gln Leu Thr Arg Lys Gln
      165      170      175
Pro Gly Glu Lys Gly Ile Ile Met Val Gln Leu Glu Asn Glu Tyr Ile
      180      185      190
Tyr Phe Asp Met Glu Ser Glu Lys Lys Glu Glu Phe Leu Arg Val Leu
      195      200      205
Ser Asp Ala Cys Ile Arg Asn Gly Ile Asp Val Pro Leu Phe Thr Cys
      210      215      220
Val Thr Pro Glu Val Arg Gly Ser His His Pro Val Ile Ser Gln Leu
      225      230      235      240
Phe Asp Met Asn Asn Gln Tyr Val Trp Trp Asn Met His Glu Ala Lys
      245      250      255
Ser Arg Ile Glu Lys Leu Glu Asn Arg Val Phe Thr Ser Arg Trp Ser
      260      265      270
Thr Thr Gly Val
      275

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<210> 10373

<211> 217

<212> PRT

<213> B.fragilis

<400> 10373

Glu Lys Phe Val Leu Gly Cys Ile Lys Arg Ile Trp Gly Tyr Pro His
 1 5 10 15
 Ile Leu Glu Asn Gly Ile Leu Tyr Leu Leu Ile Arg Lys Thr Cys Arg
 20 25 30
 Ala Gly Lys Asn His Ile Ser Val Thr Ala Asp Gly Leu Arg Gly Gly
 35 40 45
 Thr Arg Gly Ile Val Thr Arg Arg Tyr Asp Gly Val Phe Val Pro Glu
 50 55 60
 Gly Tyr Leu Val Pro Tyr Ser Gly Asp Glu Glu Glu Gly Val Val Val
 65 70 75 80
 Lys Ala Thr Ala Trp Glu Asn Val Ile Cys Thr Lys Thr Pro Leu Lys
 85 90 95
 Val Val Arg Val Glu Ala Thr Ser Glu Gln Lys Arg Tyr Glu Ala Ser
 100 105 110
 His Ile Thr Asp Gly Asp Asp Phe Ser Trp Trp Ile Ala Asp Asp Glu
 115 120 125
 Ser Gln Pro Gln Ile Val Leu Leu Glu Leu Glu Arg Ser Val Asn Val
 130 135 140
 Phe Ala Ser Arg Ile Arg Phe Gln Lys Asp Ser Ser Thr Tyr Thr His
 145 150 155 160
 Lys Val Glu Ile Ser Ile Asp Gly Lys Asn Trp Glu Thr Leu Tyr Glu
 165 170 175
 Arg Glu Cys Thr Gly Trp Asp Phe Lys Pro Val Gln Ile Gly Lys Glu
 180 185 190
 Leu Lys Tyr Met Arg Leu Thr Ile Glu Lys Ser Ser Glu Gly Ala Ala
 195 200 205
 Gly Leu Ala Glu Val Thr Leu Tyr Gln
 210 215

<210> 10374

<211> 362

<212> PRT

<213> B.fragilis

<400> 10374

Asn Pro Lys Pro Met Lys Leu Lys His Ile Pro Leu Leu Leu Leu Val
 1 5 10 15
 Leu Thr Cys Cys Pro Ala Cys Gln Asn Lys Lys Ala Ser Ala Thr Lys
 20 25 30
 Glu Ile Pro Ser Glu Ala Thr Tyr Thr Asn Pro Leu Leu Ala Val Gly
 35 40 45
 Ala Glu Pro Trp Ala Val Phe His Glu Gly Lys Tyr Tyr Tyr Thr Gln
 50 55 60
 Gly Ala Glu Asn Lys Ile Ile Leu Trp Glu Thr Asn Asp Ile Thr Asp
 65 70 75 80
 Leu Glu His Ala Ala Arg Lys Glu Val Trp Ile Pro Lys Glu Ile Ser
 85 90 95
 Asn Ser Tyr His Leu Trp Gly Pro Glu Ile His Arg Ile Asp Gly Lys
 100 105 110
 Trp Tyr Val Tyr Phe Ala Ala Asp Asp Gly Asn Met Asp Asn His His
 115 120 125
 Ile Tyr Val Ile Glu Asn Ser Ser Pro Asn Pro Leu Glu Gly Glu Phe
 130 135 140
 Val Met Lys Gly Arg Ile Lys Thr Asp Lys Asp Asp Asn Trp Ala Ile
 145 150 155 160
 His Ala Ser Thr Phe Glu His Gln Gly Gln Arg Tyr Leu Ile Trp Cys

				165					170				175				
Gly	Trp	Pro	Lys	Arg	Arg	Ile	Glu	Thr	Glu	Thr	Gln	Cys	Ile	Tyr	Ile		
			180						185				190				
Ala	Arg	Met	Glu	Asn	Pro	Trp	Thr	Leu	Ser	Ser	Asp	Arg	Val	Met	Ile		
		195						200				205					
Ala	Glu	Pro	Glu	Tyr	Glu	Trp	Glu	Arg	Gln	Trp	Ile	Ser	Pro	Asp	Gly		
	210					215					220						
Ser	Lys	Thr	Ala	Tyr	Pro	Ile	His	Val	Asn	Glu	Ser	Pro	Gln	Phe	Phe		
225					230					235					240		
Glu	Ser	Lys	Asn	Lys	Asp	Lys	Val	Leu	Ile	Tyr	Tyr	Cys	Ala	Ser	Gly		
			245						250				255				
Ser	Trp	Thr	Pro	Tyr	Tyr	Cys	Ile	Gly	Leu	Leu	Thr	Ala	Asp	Ala	Gly		
			260					265					270				
Ser	Asp	Leu	Thr	Asn	Ala	Ala	Ser	Trp	Lys	Lys	Gln	Asp	Thr	Pro	Val		
	275						280					285					
Phe	Glu	Gln	Gln	Pro	Glu	Asp	Ser	Val	Phe	Gly	Pro	Gly	Ser	Pro	Ser		
	290					295					300						
Phe	Val	Pro	Thr	Pro	Asp	Glu	Lys	Glu	Trp	Tyr	Met	Leu	Tyr	His	Ala		
305					310					315					320		
Arg	Lys	Ile	Pro	Asn	Asp	Ala	Pro	Gly	Ala	Thr	Asp	Ser	Arg	Ser	Pro		
			325						330					335			
Arg	Leu	Gln	Lys	Ile	Ser	Trp	Asp	Ala	Asn	Gly	Met	Pro	Val	Leu	Gly		
		340						345					350				
Lys	Pro	Cys	Lys	Glu	Gly	Thr	Gln	Ile	Lys								
	355						360										

<210> 10375

<211> 205

<212> PRT

<213> B.fragilis

<400> 10375

Lys	Asp	Tyr	Tyr	Gly	His	Gly	Thr	Glu	Ala	Arg	Lys	Pro	Gly	Thr	Ala		
1			5					10					15				
Ile	Ala	Arg	Thr	Leu	Phe	Gly	Glu	Leu	Asn	Pro	Ser	Gly	Lys	Leu	Pro		
	20						25					30					
Val	Thr	Phe	Glu	Lys	Arg	Trp	Glu	Asp	Asn	Pro	Thr	Phe	His	Ser	Tyr		
	35					40						45					
Tyr	Asp	Pro	Asp	Gly	Asp	Lys	His	Val	Glu	Tyr	Thr	Glu	Gly	Ile	Phe		
	50				55				60								
Val	Gly	Tyr	Arg	Gly	Tyr	Asp	Lys	Leu	Lys	Arg	Glu	Val	Gln	Tyr	Pro		
65				70				75						80			
Phe	Gly	Tyr	Gly	Leu	Ser	Tyr	Thr	Arg	Phe	Lys	Leu	Ser	Ala	Pro	Thr		
			85					90					95				
Val	Gly	Thr	Pro	Lys	Thr	Asp	Gly	Ser	Val	Thr	Val	Thr	Cys	Lys	Leu		
	100						105					110					
Thr	Asn	Thr	Gly	Arg	Thr	Ala	Gly	Ala	Glu	Val	Val	Gln	Leu	Tyr	Val		
	115					120						125					
Ser	Asn	Lys	Asp	Thr	Thr	Val	Glu	His	Pro	Glu	Lys	Glu	Leu	Lys	Gly		
	130				135					140							
Phe	Arg	Lys	Val	Tyr	Leu	Glu	Pro	Gly	Glu	Thr	Lys	Ser	Ile	Glu	Ile		
145				150				155						160			
Thr	Val	Pro	Ala	Glu	Ala	Phe	Ser	His	Tyr	Asp	Thr	Gly	Ser	Arg	Arg		
			165					170					175				
Leu	Val	Ile	Asp	Arg	Gly	Ser	His	Asp	Ile	Leu	Leu	Gly	Phe	Ser	Ser		
		180						185					190				
Arg	Asp	Ile	Lys	Ala	Lys	Met	Ser	Val	Gly	Ile	Ser	Arg					
	195					200						205					

<210> 10376
 <211> 292
 <212> PRT
 <213> B.fragilis

<400> 10376

Leu Pro Met Asn Ala Leu His Pro Trp Arg Ser Thr Glu Glu Ile Leu
 1 5 10 15
 Lys Lys Gln Glu Gln Val Asn Arg Lys Lys Glu Leu Gln Gln Val
 20 25 30
 Lys Val Ala Lys Glu Asn Leu Leu Arg Glu Arg Glu Gly Glu Lys Ala
 35 40 45
 Lys Leu Glu Ala Gln Glu Lys Glu Lys Arg Glu Ile Val Ala Gly Leu
 50 55 60
 Gln Lys Lys Gln Lys Gly Leu Gln Ser Glu Ile Ser Lys Lys Arg Arg
 65 70 75 80
 Glu Ala Asn Gln Leu Asn Ala Lys Ile Asp Lys Leu Ile Ala Glu Glu
 85 90 95
 Ile Glu Arg Ala Arg Lys Arg Ala Glu Glu Glu Ala Arg Arg Glu Ala
 100 105 110
 Ala Ala Arg Arg Lys Ala Ala Ala Lys Glu Ser Lys Ser Ser Ser Thr
 115 120 125
 Gly Gly Gly Thr Val Pro Ala Lys Lys Lys Ala Glu Pro Leu Glu Arg
 130 135 140
 Phe Thr Met Ser Lys Ala Asp Arg Glu Leu Ser Gly Asn Phe Val Ser
 145 150 155 160
 Asn Arg Gly Lys Leu Pro Met Pro Ile Thr Gly Pro Tyr Ile Ile Thr
 165 170 175
 Ser His Tyr Gly Gln Tyr Ala Val Glu Gly Leu Arg Asn Val Lys Leu
 180 185 190
 Asp Asn Lys Gly Ile Asp Ile Gln Gly Lys Pro Gly Ala Gln Ala Arg
 195 200 205
 Ala Ile Phe Asp Gly Lys Val Ala Ala Val Phe Gln Leu Asn Gly Leu
 210 215 220
 Phe Asn Val Leu Ile Arg His Gly Asp Tyr Ile Ser Val Tyr Cys Asn
 225 230 235 240
 Leu Ser Ser Ala Ser Val Lys Ser Gly Asp Thr Val Thr Thr Arg Gln
 245 250 255
 Ala Ile Gly Pro Ile Phe Ser Asp Gly Ser Asp Asn Gly Arg Thr Val
 260 265 270
 Leu His Phe Gln Leu Arg Arg Glu Arg Asp Lys Leu Asn Pro Glu Pro
 275 280 285
 Trp Leu Asn Arg
 290

<210> 10377
 <211> 1050
 <212> PRT
 <213> B.fragilis

<400> 10377

Ile Gln His Met Arg Ile Ile Thr Leu Leu Ile Thr Leu Phe Ala Phe
 1 5 10 15
 Gly Ile Thr Pro Leu Gln Ala Phe Ser Tyr Phe Ser Phe Lys Lys Tyr
 20 25 30
 Gln Val Glu Asp Gly Leu Ser His Asn Thr Val Trp Cys Ala Met Gln
 35 40 45
 Asp Ser Tyr Gly Phe Ile Trp Leu Gly Thr Ser Asp Gly Leu Asn Cys
 50 55 60

Tyr 65	Asn	Gly	Arg	Gly	Asn 70	Lys	Val	Tyr	Arg	Asn 75	Val	Leu	Asn	Asp	Lys 80
Phe	Ser	Leu	Glu	Asn 85	Asn	Phe	Val	Gln	Ala	Leu	Phe	Glu	Glu	Glu	Asn 90
His	Asn	Ile	Trp	Val	Gly	Thr	Asn	Trp	Gly	Leu	Tyr	Ile	Tyr	Asp	Arg 95
Glu	Tyr	Asp	Arg	Phe	Thr	Tyr	Phe	Asp	Lys	Lys	Thr	Arg	Tyr	Gly	Val 100
Phe	Ile	Ser	Ser	Glu	Ile	Lys	Lys	Ile	Ile	Lys	Ser	Glu	Ser	Gly	Leu 105
Ile	Trp	Ile	Ala	Thr	Leu	Gly	Gln	Gly	Leu	Phe	Val	Tyr	Asn	Pro	Gln 110
Thr	Asp	Val	Leu	Thr	Gln	Asn	Ser	Leu	Gln	Thr	Ser	Phe	Val	Trp	Asp 115
Val	Cys	Glu	Asn	Asn	Ser	Gly	His	Ile	Tyr	Ala	Ser	Ser	Leu	Gln	Glu 120
Gly	Leu	Leu	Cys	Phe	Asp	Glu	Asn	Gly	Lys	Phe	Leu	Gln	Ser	Tyr	Pro 125
Leu	Leu	Ser	Ala	Gly	Asn	Asn	Pro	Asp	Asn	Tyr	Arg	Ile	Asn	Cys	Leu 130
Leu	Asp	Ile	Arg	Ser	Asp	Ile	Trp	Phe	Gly	Ala	Gly	Ser	Asn	Leu	Leu 135
Tyr	Cys	Leu	Asn	Glu	Arg	Thr	Gly	Asn	Leu	Asp	Cys	Tyr	Asn	Ala	Ser 140
His	Leu	Asn	Phe	Gly	Ala	Ile	Arg	Cys	Leu	Leu	Asn	Tyr	Ser	Glu	Thr 145
Glu	Leu	Leu	Val	Gly	Thr	Asp	Asn	Gly	Leu	Tyr	Leu	Phe	Asp	Leu	His 150
Asp	Lys	Asn	Phe	Ser	Arg	Ile	Asp	Asn	Pro	Ser	Asp	Pro	Arg	Ser	Leu 155
Ser	Asp	Gln	Ser	Ile	Asn	Ala	Met	Met	Arg	Asp	Ala	Glu	Gly	Gly	Ile 160
Trp	Val	Leu	Thr	Asn	Leu	Gly	Gly	Val	Asn	Tyr	Leu	Ala	Lys	Pro	Thr 165
Lys	Arg	Phe	Asp	Tyr	Tyr	Pro	Pro	Val	Tyr	Arg	Asp	Gly	Gly	Val	Ala 170
Ala	Gly	Lys	Val	Val	Gly	Pro	Phe	Cys	Glu	Asn	Ala	Ala	Gly	Asp	Ile 175
Trp	Val	Gly	Thr	Arg	Asp	Gly	Leu	Cys	Phe	Phe	Asp	Val	Ser	Thr	His 180
Gln	Leu	Thr	Ala	Tyr	Pro	Ile	Gly	Gly	Gly	Val	Asp	Lys	Lys	Tyr	Asp 185
Ile	Arg	Ser	Leu	Leu	Leu	Asp	Gly	Glu	Arg	Leu	Trp	Ile	Gly	Thr	Tyr 190
Ala	Glu	Gly	Leu	Lys	Val	Leu	Asp	Leu	Arg	Thr	Gly	His	Val	Lys	Ser 195
Tyr	Asn	His	Leu	Gln	Asp	Thr	Pro	Asn	Thr	Ile	Cys	Ser	Asp	Asp	Val 200
Leu	Ala	Val	Tyr	Lys	Asp	Arg	Ser	Gly	Asp	Ile	Phe	Val	Gly	Thr	Ser 205
Trp	Gly	Leu	Cys	Arg	Tyr	Asn	Pro	Arg	Glu	Asp	Asn	Phe	Ser	Thr	Ile 210
Thr	Thr	Val	Gly	Ser	Met	Val	Ser	Val	Val	Asp	Ile	Leu	Glu	Asp	Met 215
Tyr	Asp	Asn	Leu	Trp	Ile	Gly	Thr	Ser	Asn	Ser	Gly	Val	Phe	Arg	Phe 220
Asn	Thr	Arg	Asn	Gly	His	Trp	Lys	His	Phe	Gln	His	Glu	Arg	Asn	Asp 225
Ser	Thr	Thr	Ile	Thr	Asn	Asn	Ser	Val	Ile	Thr	Leu	Phe	Glu	Asp	Leu 230

Gly Ala Val Gly Thr Gly Ile Gly Leu Ala Phe Ser Lys Ser Leu Ala
 1010 1015 1020
 Glu Ala His His Gly Thr Leu Ser Leu Glu Asp Ser Val Tyr Gly Gly
 1025 1030 1035 1040
 Ser Leu Phe Cys Ser His Phe Ala Leu Gly
 1045 1050

<210> 10378
 <211> 301
 <212> PRT
 <213> B.fragilis

<400> 10378
 Ala Leu Lys Ile Val Tyr Met Val Asp Arg Ser Phe Val Leu Thr Leu
 1 5 10 15
 Pro Trp Gly Glu Glu Ala Val Ser Glu Glu Pro Glu Val Val Ile Pro
 20 25 30
 Asp Gly Arg Glu Ala Ala Asp Glu Glu Gln Gly Thr Glu Leu Ser Gly
 35 40 45
 Ser Lys Phe Thr Ile Leu Leu Val Glu Asp Asn Val Asp Leu Leu Asn
 50 55 60
 Leu Thr Arg Glu Ser Leu Ser Thr Trp Phe Lys Val Leu Lys Ala Gln
 65 70 75 80
 Asn Gly Arg Gln Ala Leu Glu Val Leu Ala Asn Glu Thr Val Asp Val
 85 90 95
 Ile Val Ser Asp Val Met Met Pro Glu Met Asn Gly Leu Glu Leu Thr
 100 105 110
 Ala Lys Val Lys Ser Asp Ile Glu Tyr Ser His Ile Pro Val Ile Leu
 115 120 125
 Leu Thr Ala Lys Thr Thr Leu Glu Ala Lys Val Glu Gly Phe Glu Cys
 130 135 140
 Gly Ala Asp Val Tyr Ile Glu Lys Pro Phe Ser Ile Arg Gln Leu Arg
 145 150 155 160
 Lys Gln Ile Glu Asn Leu Leu Lys Leu Arg Gln Ala Phe His Lys Met
 165 170 175
 Met Ser Glu Leu Ser Gly Gly Asn Gly Ala Ala Pro Ile Ser Pro Val
 180 185 190
 Glu Tyr Ser Val Ser Gln Lys Asp Cys Glu Leu Met Ala Lys Val Arg
 195 200 205
 Ala Ala Val Glu Ala Gln Leu Ser Asp Glu Asn Phe Ser Val Asp Thr
 210 215 220
 Leu Ala Glu Ser Leu Asn Met Ser Arg Ser Asn Phe Tyr Arg Lys Ile
 225 230 235 240
 Lys Ala Leu Ala Gly Met Pro Pro Asn Asp Tyr Leu Lys Thr Ile Arg
 245 250 255
 Leu Asn Lys Ala Ala Glu Leu Leu Lys Ser Gly Val Arg Ile Thr Glu
 260 265 270
 Val Cys Glu Lys Ile Gly Phe Ser Ser Ser Ser Tyr Phe Ala Lys Cys
 275 280 285
 Phe Lys Ile Gln Phe Gly Val Leu Pro Lys Asp Tyr His
 290 295 300

<210> 10379
 <211> 649
 <212> PRT
 <213> B.fragilis

<400> 10379
 Arg Asn Pro Val Lys Thr Leu Thr Leu Gln Cys Leu Phe Ser Thr Ala

1		5		10		15									
Gln	Lys	Arg	Phe	Thr	Ala	Asp	Val	Glu	Gln	Gln	Ala	Glu	Lys	Ile	Leu
		20						25					30		
Ser	Gln	Met	Thr	Leu	Asp	Glu	Lys	Leu	Ser	Tyr	Ile	Gly	Gly	Ile	Asn
		35					40					45			
Trp	Met	Tyr	Thr	Arg	Pro	Leu	Glu	Arg	Phe	Gly	Ile	Pro	Arg	Leu	Lys
		50				55					60				
Met	Ser	Asp	Gly	Pro	Gln	Gly	Leu	Gly	Thr	His	Gly	Pro	Ser	Thr	Ala
65				70					75						80
Tyr	Pro	Cys	Ala	Leu	Met	Leu	Ala	Ala	Thr	Trp	Asn	Glu	Gln	Leu	Ala
			85					90						95	
Thr	Glu	Tyr	Gly	Ser	Ala	Leu	Gly	Lys	Asp	Cys	Arg	Ala	Arg	Gly	Val
			100					105					110		
His	Val	Val	Leu	Gly	Pro	Ala	Val	Asn	Ile	Tyr	Arg	Ala	Pro	Met	Cys
		115					120					125			
Gly	Arg	Asn	Phe	Glu	Tyr	Met	Gly	Glu	Asp	Pro	Tyr	Leu	Thr	Ser	Arg
		130				135				140					
Met	Ala	Thr	Gly	Tyr	Ile	Lys	Gly	Val	Gln	Gly	Gln	Gly	Val	Met	Ala
145					150				155						160
Thr	Ile	Lys	His	Phe	Ile	Ala	Asn	Asn	Ser	Asp	Tyr	Asp	Arg	Asp	His
			165					170						175	
Ile	Ser	Ser	Asp	Ile	Asp	Glu	Arg	Thr	Leu	Asn	Glu	Ile	Tyr	Phe	Pro
			180					185					190		
Ser	Phe	Arg	Ala	Ala	Val	Gln	Glu	Ala	Glu	Val	Gly	Ala	Val	Met	Ser
		195					200					205			
Ser	Tyr	Asn	Leu	Leu	Asn	Gly	Ile	Tyr	Thr	Thr	Glu	His	Pro	Trp	Leu
		210				215					220				
Leu	Lys	Asp	Val	Leu	Arg	Gln	Gln	Trp	Gly	Phe	Lys	Gly	Ile	Leu	Met
225					230					235					240
Ser	Asp	Trp	Gly	Ser	Thr	His	His	Cys	Ile	Pro	Ala	Val	Lys	Gly	Gly
			245					250						255	
Leu	Asp	Leu	Glu	Met	Pro	Ala	Gly	Ser	Lys	Met	Gln	Pro	Glu	Glu	Leu
			260					265					270		
Lys	Tyr	Tyr	Leu	Arg	Thr	Gly	Asp	Ile	Thr	Ile	Glu	Met	Ile	Asp	Glu
		275					280					285			
Lys	Val	Arg	His	Ile	Leu	Gln	Thr	Leu	Leu	Ala	Phe	Gly	Phe	Arg	Glu
		290				295					300				
Thr	Gln	Gln	Pro	Asp	Thr	His	Ile	Pro	Leu	Asn	Asn	Pro	Gln	Cys	Ala
305					310					315					320
Gln	Thr	Ala	Leu	Asn	Val	Ala	Ser	Glu	Gly	Leu	Val	Leu	Leu	Lys	Asn
			325						330					335	
Thr	Asn	Gln	Ile	Leu	Pro	Ile	Arg	Ser	Gly	Lys	Val	Lys	Thr	Ile	Ala
			340					345					350		
Val	Val	Gly	Lys	Asn	Ala	Gln	Gly	Tyr	Val	Cys	Gly	Gly	Gly	Ser	Gly
		355					360					365			
Glu	Val	His	Pro	Phe	Gln	Tyr	Val	Ser	Val	Leu	Asp	Gly	Ile	Arg	Lys
		370				375					380				
Glu	Ala	Ala	Glu	Arg	Gly	Ile	Arg	Val	Glu	Tyr	Leu	Asp	Val	Tyr	Asn
385					390					395					400
Tyr	Leu	Pro	Thr	Ile	Ile	Phe	Thr	Asp	Thr	Glu	Arg	Lys	Gln	Lys	Gly
			405					410						415	
Phe	Arg	Ala	Gln	Tyr	Phe	Asp	Asn	Met	Asn	Leu	Glu	Gly	Thr	Pro	Lys
			420					425					430		
Val	Glu	Gln	Thr	Glu	Thr	Lys	Ile	Asn	Tyr	Ser	Trp	Ser	Gly	Gly	Thr
		435					440					445			
Gly	Leu	Lys	Glu	Met	Pro	Lys	Glu	Gln	Phe	Ser	Val	Arg	Trp	Asn	Gly
		450				455				460					
Thr	Ile	Cys	Pro	Gln	Glu	Thr	Asp	Glu	Tyr	Leu	Phe	Thr	Leu	Gly	Gly
465					470					475					480

Asp Asp Gly Tyr Arg Leu Tyr Ile Asp Gly Lys Leu Ile Ala Asp Glu
 485 490 495
 Trp His Glu Gly Ala Phe Arg Asn Ser Thr Tyr Arg Cys Met Leu Glu
 500 505 510
 Ala Gly Lys Lys Tyr Asp Leu Lys Ile Glu Tyr Phe Gln Lys Gly Gly
 515 520 525
 Gly Ala Ala Val Asn Phe Ile Trp Lys Gln Lys Asn Ala Ser Asn Asn
 530 535 540
 Leu Phe Val Glu Ala Leu Asn Arg Asn Asp Leu Val Val Ala Cys Ile
 545 550 555 560
 Gly Phe Asn Ser Asp Thr Glu Gly Glu Gly Arg Asp Arg Thr Phe Glu
 565 570 575
 Leu Pro Glu Asp Glu Ala Gln Leu Leu Gln Asn Thr Leu Gln Ser Lys
 580 585 590
 Arg Pro Val Val Gly Ile Val Asn Ala Gly Gly Asn Val Glu Met Gln
 595 600 605
 Ser Trp Glu Pro Ser Leu Lys Gly Leu Leu Trp Ala Trp Tyr Gly Gly
 610 615 620
 Gln Glu Ala Arg Asn Gly Asn Arg Thr Tyr Thr Leu Arg Gly Ala Gln
 625 630 635 640
 Ser Phe Gly Glu Ile Thr Cys His Phe
 645

<210> 10380
 <211> 216
 <212> PRT
 <213> B.fragilis

<400> 10380
 Phe Cys Pro Ser Glu Leu Asp Ile Arg Lys Ile Tyr Tyr Leu Cys Pro
 1 5 10 15
 Leu Lys Met Arg Val Arg Phe Pro Val Leu Asn Pro Phe Val Met Lys
 20 25 30
 Val Lys Arg Phe Val Leu Cys Leu Phe Met Leu Thr Leu Ile Gly Gly
 35 40 45
 Ile Cys Phe Ile Ser Cys Gly Asn Thr Ser Lys Ala Lys Ala Glu Ser
 50 55 60
 Asp Val Ala Ala Glu Thr Ala Glu Glu Thr Phe Gln Ser Phe Leu Lys
 65 70 75 80
 Lys Phe Thr Ser Ser Ala Ser Phe Gln Tyr Thr Arg Val Lys Phe Pro
 85 90 95
 Leu Lys Thr Pro Ile Thr Leu Met Thr Asp Asp Gly Asn Ser Glu Lys
 100 105 110
 Thr Phe Pro Phe Thr Gln Glu Lys Trp Pro Leu Leu Asp Ala Glu Thr
 115 120 125
 Leu Lys Glu Glu Arg Ile Thr Gln Glu Glu Gly Gly Ile Tyr Val Ser
 130 135 140
 Lys Phe Thr Val Asn Glu Pro Thr His Lys Glu Phe Glu Ala Gly Tyr
 145 150 155 160
 Glu Glu Ser Glu Val Asp Leu Arg Val Ile Phe Asp Leu Ile Asp Gly
 165 170 175
 Lys Trp Tyr Val Thr Asp Cys Tyr Thr Gly Trp Tyr Gly Tyr Asp Leu
 180 185 190
 Pro Ile Asp Asp Leu Asn Glu Thr Val Lys Gln Val Lys Glu Glu Asn
 195 200 205
 Asp Thr Phe Lys Glu Leu His Pro
 210 215

<210> 10381

<211> 183
 <212> PRT
 <213> B.fragilis

<400> 10381

Ala	Ile	Thr	Ser	Ile	Thr	Leu	Met	Glu	Lys	Ile	Gly	Ile	Phe	Cys	Ser
1				5					10					15	
Ala	Ser	Gly	Ser	Ile	Asp	Pro	Ile	Tyr	Phe	Asp	Ala	Ala	His	Gln	Ile
			20					25					30		
Gly	Glu	Trp	Met	Gly	Lys	Asn	Gly	Lys	Thr	Leu	Ile	Tyr	Gly	Gly	Ala
		35					40					45			
Asn	Leu	Gly	Leu	Met	Glu	Cys	Val	Ala	Lys	Ala	Val	Lys	Glu	Asn	Gly
	50					55					60				
Gly	His	Val	Ile	Gly	Val	Val	Pro	Ser	Lys	Leu	Glu	Glu	Asn	Gly	Lys
65					70					75				80	
Val	Ser	Thr	Tyr	Pro	Asp	Glu	Ile	Ile	Ala	Thr	His	Asp	Leu	Ser	Asp
				85					90					95	
Arg	Lys	Asp	Ile	Ile	Leu	Gln	Gln	Ser	Asp	Val	Leu	Val	Ala	Leu	Pro
			100					105					110		
Gly	Gly	Ile	Gly	Thr	Leu	Asp	Glu	Val	Phe	His	Val	Met	Ala	Ala	Ala
		115					120					125			
Ser	Ile	Gly	Tyr	His	Gln	Lys	Lys	Val	Ile	Phe	Tyr	Asn	Ala	Asp	Gly
	130					135					140				
Phe	Tyr	Asn	Pro	Leu	Leu	Ala	Val	Leu	Ser	Glu	Leu	Gln	Thr	Arg	Gly
145					150					155					160
Phe	Thr	Arg	His	Pro	Leu	Ser	Ser	Tyr	Tyr	Glu	Val	Ala	Asn	Thr	Phe
				165					170					175	
Asn	Glu	Leu	Thr	Ile	Lys	Ile									
				180											

<210> 10382
 <211> 194
 <212> PRT
 <213> B.fragilis

<400> 10382

Arg	Leu	Leu	Ser	Ser	Gly	Leu	Phe	Ser	Leu	Ser	Leu	Leu	Glu	Asn	Ile
1				5					10					15	
Glu	Phe	Met	Met	Thr	Leu	Ile	Arg	Ile	Thr	Ser	Ala	Asp	Asp	Ser	Arg
			20					25					30		
Leu	Asn	Arg	Leu	Ile	Pro	Leu	Tyr	Glu	Glu	Ser	Phe	Pro	Glu	Ser	Glu
		35					40					45			
Arg	Arg	Lys	Ile	Gly	Gln	Leu	Lys	Arg	Met	Ile	Glu	Asn	His	Ala	Pro
	50					55					60				
Met	Tyr	Phe	Asn	Ala	Ile	Glu	Cys	Asp	Gly	Glu	Leu	Ser	Gly	Met	Phe
65					70					75				80	
Val	Tyr	Trp	Asp	Met	Gly	Asp	Phe	Tyr	Tyr	Leu	Glu	His	Leu	Ala	Val
				85					90					95	
Phe	Pro	Glu	Met	Arg	Asn	Lys	Lys	Ile	Gly	Gln	Gln	Val	Leu	Asp	Tyr
			100					105					110		
Val	Ala	Glu	His	Leu	Lys	Gly	Val	Arg	Leu	Leu	Glu	Val	Glu	Pro	Thr
		115					120					125			
Glu	Asp	Glu	Met	Thr	Thr	Arg	Arg	Val	Asn	Tyr	Tyr	Arg	Arg	Asn	Gly
		130				135					140				
Tyr	Glu	Val	Leu	Asp	Lys	Thr	Tyr	Val	Gln	Pro	Ser	Tyr	His	Ala	Leu
145					150					155					160
Glu	Asp	Ala	Cys	Pro	Leu	Trp	Ile	Met	Gly	Ser	Glu	Asp	Ser	Pro	Arg
				165					170					175	
Leu	Ala	Glu	Gln	Val	Glu	Arg	Ile	Lys	Glu	Glu	Val	Tyr	Arg	Gln	Gln

180 185 190

Val Gly

<210> 10383
 <211> 235
 <212> PRT
 <213> B.fragilis

<400> 10383

Phe	Val	Ser	Pro	Asp	Asn	Lys	Leu	Tyr	Asn	Asn	Asn	Gln	Val	Ile	Thr
1				5					10					15	
Asn	His	Gln	Leu	Pro	Met	Lys	Val	Ala	Tyr	Leu	Ser	Ser	Ala	Tyr	Leu
			20					25					30		
Ala	Pro	Val	Glu	Tyr	Tyr	Ser	Lys	Leu	Leu	Asn	Tyr	Asp	Lys	Ile	Phe
		35					40					45			
Ile	Glu	Gln	His	Asp	His	Tyr	Met	Lys	Gln	Thr	Tyr	Arg	Asn	Arg	Cys
	50					55					60				
Thr	Ile	Ala	Gly	Pro	Glu	Gly	Glu	Leu	Ala	Leu	Ser	Ile	Pro	Thr	Val
65					70					75					80
Lys	Pro	Glu	Glu	Pro	Lys	Cys	Pro	Met	Lys	Asp	Ile	Arg	Ile	Ser	Asp
				85					90					95	
His	Gly	Asn	Trp	Arg	His	Leu	His	Trp	Asn	Ala	Ile	Glu	Ser	Ala	Tyr
		100						105						110	
Asn	Ser	Thr	Pro	Phe	Phe	Glu	Tyr	Tyr	Lys	Asp	Asp	Phe	Arg	Pro	Phe
		115					120					125			
Tyr	Glu	Lys	Lys	Tyr	Glu	Phe	Leu	Thr	Asp	Phe	Asn	Glu	Glu	Leu	Cys
	130					135					140				
Arg	Leu	Val	Cys	Glu	Leu	Ile	Asp	Ile	Gln	Pro	Ala	Ile	Glu	Arg	Thr
145					150					155					160
Lys	Glu	Tyr	Lys	Thr	Asp	Phe	Ala	Pro	Asn	Glu	Ile	Asp	Phe	Arg	Glu
				165					170					175	
Ala	Ile	His	Pro	Lys	Lys	Asp	Phe	His	Arg	Thr	Asp	Pro	Glu	Phe	Ile
			180					185					190		
Pro	Gln	Pro	Tyr	Tyr	Gln	Val	Phe	Glu	Ala	Arg	His	Gly	Phe	Leu	Pro
		195					200					205			
Asn	Leu	Ser	Ile	Ile	Asp	Leu	Leu	Phe	Asn	Met	Gly	Pro	Glu	Ser	Leu
	210					215					220				
Leu	Ile	Leu	Gln	Lys	Thr	Cys	Ala	Asp	Ser	Gln					
225					230					235					

<210> 10384
 <211> 413
 <212> PRT
 <213> B.fragilis

<400> 10384

Leu	Ile	Lys	Pro	Thr	Ser	Asn	Lys	Asn	Arg	Leu	Met	Asn	Gln	Pro	Asp
1				5					10					15	
Ile	Met	Thr	Leu	Pro	Lys	Asp	Lys	Leu	Phe	Leu	Ser	Glu	Gln	Thr	Trp
			20					25					30		
Arg	Trp	Tyr	Gly	Pro	Asp	Asp	Pro	Val	Ser	Leu	Trp	Asp	Ile	Lys	Gln
		35					40					45			
Ala	Gly	Ala	Thr	Gly	Ile	Val	Asn	Ala	Leu	His	His	Ile	Pro	Asn	Gly
	50					55					60				
Glu	Val	Trp	Thr	Val	Glu	Glu	Ile	Met	Lys	Arg	Lys	Glu	Leu	Ile	Glu
65					70					75					80
Ser	Val	Gly	Leu	Lys	Trp	Ser	Val	Val	Glu	Ser	Val	Pro	Val	His	Glu
				85					90					95	

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His Ile Lys Thr Gln Thr Gly Asn Phe Arg Lys Tyr Ile Glu Asn Tyr
100 105 110
Lys Glu Ser Leu Arg Asn Leu Gly Gln Cys Gly Ile His Ile Val Thr
115 120 125
Tyr Asn Phe Met Pro Val Leu Asp Trp Thr Arg Thr Asp Leu Ala Tyr
130 135 140
Thr Leu Pro Asp Gly Ser Lys Ala Leu Arg Phe Glu Arg Ala Ala Phe
145 150 155 160
Ile Ala Phe Asp Leu Phe Leu Leu Lys Arg Pro Gly Ala Glu Thr Glu
165 170 175
Tyr Thr Asp Glu Glu Lys Thr Lys Ala Arg Ile Arg Phe Glu Gln Thr
180 185 190
Asp Glu Lys Glu Lys Gln Leu Leu Val Arg Asn Met Ile Ala Gly Leu
195 200 205
Pro Gly Ser Glu Glu Ser Phe Thr Leu Glu Gln Phe Gln His Glu Leu
210 215 220
Asp Arg Tyr Arg Gly Ile Asp Ala Glu Lys Leu Arg Thr His Leu Ile
225 230 235 240
Tyr Phe Leu Lys Glu Ile Thr Ser Thr Ala Asp Glu Ala Gly Val Lys
245 250 255
Leu Val Ile His Pro Asp Asp Pro Pro Cys Ser Ile Leu Gly Leu Pro
260 265 270
Arg Ile Met Ser Cys Ala Glu Asp Phe Gln Ala Leu Ile Asp Ala Val
275 280 285
Pro Asn Glu Ser Asn Gly Leu Cys Leu Cys Thr Gly Ser Leu Gly Val
290 295 300
Ser Cys Thr Asn Asp Leu Glu Gly Met Met Arg Arg Phe Gly Asp Arg
305 310 315 320
Ile Asn Phe Val His Phe Arg Ser Thr Gln Arg Asp Ala Glu Gly Asn
325 330 335
Phe Tyr Glu Ala Asn His Leu Glu Gly Asp Val Asp Met Tyr His Val
340 345 350
Met Lys Ala Phe Leu Glu Leu Gln Gln Arg Arg Lys Val Ser Ile Pro
355 360 365
Met Arg Pro Asp His Gly His Gln Met Val Asp Asp Leu Lys Lys Lys
370 375 380
Thr Asn Pro Gly Tyr Ser Cys Ile Gly Arg Leu Arg Gly Leu Ala Glu
385 390 395 400
Leu Arg Gly Leu Glu Met Gly Ile Ala Lys Ser Ile Phe
405 410

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<210> 10385

<211> 93

<212> PRT

<213> B.fragilis

<400> 10385

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Asn Thr Ala Thr Ala Leu Tyr Gln Cys Pro Leu Ser His Met Thr Ile
1 5 10 15
Leu Met Glu Gly Asn Ile Ala Thr Gln Asp Asp Thr Ile Ile Gln Gly
20 25 30
Thr Phe Ser Gly Asp Gly Gly Ala Asp Thr Gly Tyr Thr Ile Ile Ser
35 40 45
Asp Leu Tyr Ile Val Thr Asn Val Asp Phe Ile His Gln Glu Ile Ala
50 55 60
Ile Ala Tyr Phe Gly Ser Ile Pro Thr Glu Ser Ser Pro Thr Asp Asn
65 70 75 80
Tyr Val Phe Ala Asp Met Val Val Ile Pro Asp Asn Gln
85 90

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<210> 10386
 <211> 131
 <212> PRT
 <213> B.fragilis

<400> 10386
 Ser Ile His Leu Pro Pro Ile Met Thr Ala Tyr Ile Lys Leu Leu Met
 1 5 10 15
 Leu Cys Leu Leu Phe Leu Val Phe Gly Thr Gln Lys Ser Ser Ala Leu
 20 25 30
 Gln Pro Val Asn Asn Gly Val Ala Val Thr Thr Ala Val Lys Ser His
 35 40 45
 Thr His Asn Val Pro Ser Phe Asp Asn Ser Gly His Asp Leu Phe Asp
 50 55 60
 Phe Asn Gln Gly Ile Leu Leu Lys Lys Ser Val Ser Asp Ser Ala Asn
 65 70 75 80
 Pro Tyr Lys Gln Ser Asn Asn Phe His Pro Ala Ile Lys Thr Asp Ala
 85 90 95
 Gln Arg Pro Ile Thr Phe Lys Glu Asp Thr Ser Thr Tyr Thr Leu Arg
 100 105 110
 Asn Arg Val Lys Pro Ala Gln Lys Tyr Asp Val Phe Ala Leu Arg His
 115 120 125
 Ile Leu Ile
 130

<210> 10387
 <211> 254
 <212> PRT
 <213> B.fragilis

<400> 10387
 Tyr Phe Gly Tyr Lys Val Tyr Lys Val Ser Lys Thr Met Lys Ile Ala
 1 5 10 15
 Leu Ile Gly Tyr Gly Lys Met Gly Lys Glu Ile Glu Lys Val Ala Leu
 20 25 30
 Ser Arg Gly His Glu Ile Val Ser Ile Ile Asp Ile Asn Asn Gln Asp
 35 40 45
 Asp Phe Glu Ser Glu Ala Phe Lys Ser Ala Asp Val Ala Ile Glu Phe
 50 55 60
 Thr Asn Pro Met Val Ala Tyr Ser Asn Tyr Met Lys Ala Phe Lys Ala
 65 70 75 80
 Gly Val Lys Leu Val Ser Gly Ser Thr Gly Trp Met Ala Glu His Gly
 85 90 95
 Asp Glu Val Lys Glu Leu Cys Asn Lys Gly Gly Lys Thr Leu Phe Trp
 100 105 110
 Ser Ser Asn Phe Ser Leu Gly Val Thr Ile Phe Ser Ala Val Asn Lys
 115 120 125
 Tyr Leu Ala Lys Ile Met Asn Gln Phe Pro Ala Tyr Asp Val Thr Met
 130 135 140
 Ser Glu Thr His His Val His Lys Leu Asp Ala Pro Ser Gly Thr Ala
 145 150 155 160
 Ile Thr Leu Ala Glu Gly Ile Leu Glu Asn Met Glu Arg Lys Ser Val
 165 170 175
 Trp Val Lys Glu Glu Ala His Ala Thr Asn Glu Leu Pro Ile His Ser
 180 185 190
 Ile Arg Glu Gly Glu Val Phe Gly Ile His Thr Ile Arg Tyr Asp Ser
 195 200 205
 Glu Ala Asp Ser Ile Ser Ile Thr His Asp Ala Lys Asn Arg Gly Gly

210		215		220											
Phe	Ala	Leu	Gly	Ala	Val	Leu	Ala	Ala	Glu	Tyr	Thr	Ala	Ala	His	Glu
225				230					235						240
Gly	Tyr	Leu	Gly	Met	Ser	Asp	Leu	Phe	Pro	Phe	Leu	Lys	Asp		
			245						250						

<210> 10388
 <211> 324
 <212> PRT
 <213> B.fragilis

<400> 10388

Arg	Ile	Leu	Gln	Thr	Pro	Ser	Arg	Trp	Leu	Leu	Gly	Arg	Lys	Ile	Lys
1				5					10					15	
Lys	Thr	Met	Arg	Lys	Val	Ile	Gly	Ile	Gly	Glu	Thr	Ile	Leu	Asp	Ile
			20					25					30		
Ile	Phe	Arg	Asn	Asp	Gln	Pro	Ser	Ala	Ala	Val	Pro	Gly	Gly	Ser	Val
		35					40					45			
Phe	Asn	Gly	Ile	Val	Ser	Leu	Gly	Arg	Met	Gly	Val	Asn	Val	Cys	Phe
	50					55					60				
Ile	Ser	Glu	Thr	Gly	Asn	Asp	His	Val	Gly	Asn	Ile	Ile	Leu	Gln	Phe
65					70					75				80	
Met	Arg	Asp	Asn	His	Ile	Pro	Thr	Asp	His	Val	Asn	Val	Phe	Pro	Asp
				85					90					95	
Gly	Lys	Ser	Pro	Val	Ser	Leu	Ala	Phe	Leu	Asn	Glu	His	Ser	Asp	Ala
			100					105						110	
Glu	Tyr	Ile	Phe	Tyr	Lys	Asp	Tyr	Pro	Lys	Gln	Arg	Leu	Asp	Val	Leu
		115					120					125			
Phe	Pro	Ser	Ile	Asn	Glu	Asp	Asp	Ile	Ile	Val	Ile	Gly	Ser	Tyr	Tyr
	130					135						140			
Ala	Leu	Asn	Pro	Val	Leu	Arg	Asp	Lys	Ile	Leu	Glu	Leu	Leu	Asp	Ile
145					150					155					160
Ala	Lys	Glu	Lys	Arg	Ala	Ile	Val	Tyr	Tyr	Asp	Pro	Asn	Phe	Arg	Ser
				165					170					175	
Ser	His	Lys	Asn	Glu	Ala	Met	Lys	Leu	Ala	Pro	Thr	Ile	Ile	Glu	Asn
		180					185						190		
Leu	Glu	Tyr	Ala	Asp	Ile	Val	Arg	Gly	Ser	Leu	Glu	Asp	Phe	Tyr	Tyr
	195						200					205			
Met	Tyr	Gly	Ile	Lys	Asp	Val	Glu	Lys	Ile	Tyr	Lys	Asp	Lys	Ile	Lys
	210					215					220				
Phe	Tyr	Cys	Pro	Leu	Phe	Leu	Cys	Thr	Ala	Gly	Ala	Glu	Arg	Ile	Ser
225					230					235					240
Leu	Arg	Thr	Asn	Ala	Ile	Ser	Lys	Glu	Tyr	Pro	Val	Ala	Pro	Leu	Glu
			245						250					255	
Ala	Val	Ser	Thr	Ile	Gly	Ala	Gly	Asp	Asn	Phe	Asn	Ala	Gly	Leu	Ile
		260					265						270		
Tyr	Gly	Met	Leu	Lys	Tyr	Asp	Val	Arg	Tyr	Arg	Asp	Leu	Gln	His	Leu
	275					280						285			
Ser	Glu	Glu	Thr	Trp	Asp	Lys	Val	Ile	Gln	Cys	Gly	Gln	Asp	Phe	Ala
	290					295					300				
Ala	Glu	Val	Cys	Lys	Ser	Phe	Asn	Asn	Ser	Ile	Ser	Gly	Glu	Phe	Ala
305					310					315					320
Ala	Asn	Tyr	Arg												

<210> 10389
 <211> 61
 <212> PRT
 <213> B.fragilis

<400> 10389

Phe Ile Ser Leu Phe Leu Phe Glu Val Gly Leu Ile Ser Gln Cys Val
 1 5 10 15
 Cys Ser Val Ser Ser Leu Phe Arg Tyr Val Trp Asp Gln Lys Leu Asp
 20 25 30
 Phe Leu Tyr Ile Ala Lys Ala Leu Asn Pro Pro Ser Thr Thr Ala Thr
 35 40 45
 Val Pro Val Thr Lys Leu Ala Ala Ser Leu Met Arg Tyr
 50 55 60

<210> 10390

<211> 411

<212> PRT

<213> B.fragilis

<400> 10390

Gln Ile Thr Gln Lys Met Lys Lys His Leu Ile Leu Ser Ala Cys Leu
 1 5 10 15
 Ile Met Ala Ile Ser Ser Phe Ala Gln Lys Lys Asp Phe Ser Tyr Lys
 20 25 30
 Phe Tyr Gly Gln Ile Arg Thr Asp Leu Tyr Tyr Asn Ser Arg Ala Asn
 35 40 45
 Glu Glu Thr Val Asp Gly Leu Phe Tyr Met Tyr Pro Lys Asp Glu Val
 50 55 60
 Phe Asp Ser Asn Gly Arg Asp Leu Asn Ala Thr Ala Asn Gly Ser Phe
 65 70 75 80
 Tyr Thr Leu Tyr Thr Arg Leu Gly Leu Asp Val Lys Gly Pro Lys Leu
 85 90 95
 Gly Arg Ala Met Thr Ser Ala Lys Val Glu Ala Asp Phe Arg Gly Ser
 100 105 110
 Gly Thr Ser Tyr Ser Thr Ile Arg Leu Arg His Ala Tyr Leu Asn Leu
 115 120 125
 Asp Trp Gly Arg Ser Ala Leu Leu Leu Gly Gln Thr Trp His Pro Leu
 130 135 140
 Phe Gly Asp Val Ser Pro Gln Ile Leu Asn Leu Ser Val Gly Ala Pro
 145 150 155 160
 Phe Gln Pro Phe Ser Arg Ala Pro Gln Ile Arg Tyr Arg Tyr Thr His
 165 170 175
 Lys Gly Phe Gln Leu Thr Gly Ala Ala Ile Trp Gln Ser Gln Tyr Leu
 180 185 190
 Ser Gln Gly Ile Val Gly Lys Ser Gln Thr Tyr Ile Lys Asn Ser Cys
 195 200 205
 Val Pro Glu Phe Tyr Leu Gly Leu Asp Tyr Lys Ala Asn Gly Trp Ile
 210 215 220
 Ala Gly Ala Gly Ile Glu Leu Leu Ser Leu Lys Pro Arg Thr Glu Ser
 225 230 235 240
 Lys Val Glu Asp Gln Val Tyr Lys Val Asn Glu Arg Ile Thr Thr Leu
 245 250 255
 Ser Tyr Glu Gly His Val Lys Tyr Ser Asn Lys Asp Trp Phe Val Gly
 260 265 270
 Ala Lys Thr Val Leu Gly Ser Asn Leu Thr Gln Thr Ser Met Leu Gly
 275 280 285
 Gly Phe Gly Ile Lys Ser Ile Asp Asn Arg Thr Gly Glu Gln Lys Tyr
 290 295 300
 Thr Pro Ile Arg Val Ser Ser Ser Trp Leu Asn Val Val Tyr Gly Gln
 305 310 315 320
 Lys Trp Lys Pro Gly Ile Phe Leu Gly Tyr Val Lys Asn Met Gly Thr
 325 330 335

Ser Asp Ala Leu Ala Ser Asn Gln Val Tyr Gly Thr Gly Thr Asn Val
 340 345 350
 Asp Gln Val Val Thr Ala Gly Ala Glu Leu Thr Tyr Asn Val Asn His
 355 360 365
 Trp Lys Phe Gly Val Glu Tyr Thr Tyr Thr Ser Ala Ala Tyr Gly Ser
 370 375 380
 Leu Tyr Leu Lys Asn Gly Lys Ile Ile Asp Thr His Tyr Val Gly Asn
 385 390 395 400
 Asn Arg Ile Val Gly Val Ala Met Phe Met Phe
 405 410

<210> 10391
 <211> 528
 <212> PRT
 <213> B.fragilis

<400> 10391
 Leu Lys Lys Gln Asn Met Lys Leu Asp Arg Phe Ile Asn Arg Pro Val
 1 5 10 15
 Leu Ser Thr Val Ile Ser Ile Val Ile Val Ile Leu Gly Val Leu Gly
 20 25 30
 Leu Leu Ser Leu Pro Ile Ser Gln Tyr Pro Asp Ile Ala Pro Pro Thr
 35 40 45
 Val Arg Val Asn Thr Thr Tyr Gln Gly Ala Asn Ala Gln Thr Val Leu
 50 55 60
 Asn Ser Val Ile Ala Pro Leu Glu Glu Gln Ile Asn Gly Val Glu Asn
 65 70 75 80
 Met Met Tyr Met Thr Ser Thr Ala Thr Asn Thr Gly Glu Ala Ser Ile
 85 90 95
 Glu Val Tyr Phe Lys Gln Gly Thr Asp Pro Asp Met Ala Ala Val Asn
 100 105 110
 Val Gln Asn Arg Val Ala Lys Ala Gln Gly Leu Leu Pro Ala Glu Val
 115 120 125
 Thr Lys Val Gly Val Ile Thr Ser Lys Arg Gln Thr Ser Met Leu Leu
 130 135 140
 Val Phe Ser Leu Tyr Ser Ser Asp Asp Lys Tyr Asp Asn Glu Phe Leu
 145 150 155 160
 Glu Asn Tyr Ala Lys Ile Asn Leu Val Pro Glu Val Gln Arg Val Pro
 165 170 175
 Gly Val Gly Asp Ala Met Val Leu Gly Ala Asp Tyr Ser Met Arg Ile
 180 185 190
 Trp Leu Lys Pro Asp Val Met Ala Gln Tyr His Leu Met Pro Thr Asp
 195 200 205
 Val Ser Ala Ala Leu Ala Glu Gln Asn Ile Glu Ala Ala Pro Gly Ser
 210 215 220
 Phe Gly Glu Gln Gly Lys Gln Thr Phe Gln Tyr Thr Leu Arg Tyr Lys
 225 230 235 240
 Gly Arg Leu Gln Ser Gln Glu Glu Phe Glu Asn Ile Val Ile Arg Ala
 245 250 255
 Asn Ser Asp Gly Gln Val Leu Arg Leu Lys Asp Ile Ala Thr Ile Glu
 260 265 270
 Leu Gly Arg Leu Thr Tyr Gly Phe Ser Asn Asn Val Asn Gly His Pro
 275 280 285
 Ala Val Thr Val Ile Val Phe Gln Thr Ala Gly Ser Asn Ala Thr Ala
 290 295 300
 Ile Ile Asn Asp Ile Leu Asp Leu Leu Glu Lys Ser Glu Ser Thr Phe
 305 310 315 320
 Pro Pro Gly Val Lys Val Asn Ile Ser Gln Asn Ala Asn Asp Phe Leu
 325 330 335

10391 B.fragilis
 528 B.fragilis
 PRT B.fragilis
 B.fragilis

Phe Ala Ser Ile His Glu Val Val Lys Thr Leu Ile Glu Ala Phe Ile
 340 345 350
 Leu Val Phe Ile Val Val Tyr Ile Phe Leu Gln Asp Leu Arg Ser Thr
 355 360 365
 Leu Ile Pro Ala Ile Ala Ile Pro Val Ala Leu Ile Gly Thr Phe Phe
 370 375 380
 Val Leu Tyr Ile Ile Gly Phe Ser Ile Asn Leu Leu Thr Leu Cys Ala
 385 390 395 400
 Met Val Leu Ala Ile Ala Ile Val Val Asp Asp Ala Ile Val Val Val
 405 410 415
 Glu Gly Val His Ala Lys Leu Asp Gln Gly Tyr Lys Ser Ala Arg Leu
 420 425 430
 Ala Ser Ile Asp Ala Met Asn Glu Leu Gly Gly Ala Ile Val Ser Ile
 435 440 445
 Thr Leu Val Met Met Ser Val Phe Ile Pro Val Ser Phe Met Thr Gly
 450 455 460
 Thr Ser Gly Thr Phe Tyr Arg Gln Phe Gly Leu Thr Met Ala Ile Ala
 465 470 475 480
 Ile Ala Leu Ser Ala Val Asn Ala Leu Thr Leu Ser Pro Ala Leu Cys
 485 490 495
 Ala Ile Leu Leu Lys Pro His Asp Pro Asp Ala Lys Lys Lys Ser Ile
 500 505 510
 Leu Ala Thr Val Ser Met Leu Arg Ser Met Leu Leu Met Thr Gln Tyr
 515 520 525

<210> 10392

<211> 284

<212> PRT

<213> B.fragilis

<400> 10392

Arg Ser His Lys Thr Arg Ser Leu Thr Phe Lys Ser Asn Ser Met Ala
 1 5 10 15
 Asn Leu Phe Ser Val Lys Asp Lys Val Val Val Ile Thr Gly Gly Thr
 20 25 30
 Gly Val Leu Gly Lys Ala Ile Ala Ala His Leu Ala Glu Gly Ala
 35 40 45
 Lys Val Ile Leu Leu Gly Arg Lys Thr Glu Val Gly Asn Lys Ile Val
 50 55 60
 Glu Ser Ile Arg Thr Gln Gly Gly Glu Ala Leu Phe Leu Thr Thr Asp
 65 70 75 80
 Val Leu Asp Arg Lys Ile Leu Glu Gln Asn Leu Ala Asp Ile Leu Lys
 85 90 95
 Ala Tyr Gly Arg Ile Asp Ala Leu Leu Asn Ala Ala Gly Gly Asn Met
 100 105 110
 Pro Gly Ala Thr Ile Ser Pro Thr Gly Asp Ile Phe Asp Leu Lys Ile
 115 120 125
 Asp Glu Phe Gln Lys Val Leu Asp Leu Asn Leu Thr Gly Thr Ile Leu
 130 135 140
 Pro Thr Gln Val Phe Leu Lys Pro Met Val Glu Gln Arg Ala Gly Ala
 145 150 155 160
 Ile Val Asn Phe Ser Ser Met Ala Ala Phe Arg Pro Leu Thr Arg Val
 165 170 175
 Ala Gly Tyr Ala Ala Ala Lys Ala Gly Ile Ser Asn Phe Thr Ala Phe
 180 185 190
 Met Ala Thr Glu Ile Ala Lys Lys Phe Gly Glu Gly Ile Arg Ile Asn
 195 200 205
 Ala Ile Ala Pro Gly Phe Phe Leu Thr Glu Gln Asn Arg Ala Leu Leu
 210 215 220

Thr Asn Pro Asp Gly Thr Tyr Thr Gln Arg Gly Gln Asp Val Ile Arg
 225 230 235 240
 Gln Thr Pro Phe Gly Arg Met Gly Arg Ala Glu Glu Leu Cys Gly Thr
 245 250 255
 Ile Gln Tyr Leu Ile Ser Asp Ala Ala Ser Phe Val Thr Gly Thr Val
 260 265 270
 Ala Val Val Asp Gly Gly Phe Asn Ala Phe Ala Met
 275 280

<210> 10393

<211> 394

<212> PRT

<213> B.fragilis

<400> 10393

Thr Ser Leu Lys Ile Glu Tyr Lys Glu Gly Met Lys Ser Lys Ile Val
 1 5 10 15
 Leu Phe Ala Phe Cys Leu Ala Leu Leu Ser Gly Cys Gly Lys Lys Gly
 20 25 30
 Phe Asn Met Gly Gly Thr Pro Glu Cys Ala Val Glu Thr Leu Gln Pro
 35 40 45
 Thr Thr Val Asn Leu Lys Ser Ser Tyr Pro Ala Thr Ile Lys Gly Lys
 50 55 60
 Gln Asp Ile Glu Ile Arg Pro Gln Val Ser Gly Phe Ile Thr Lys Leu
 65 70 75 80
 Asn Ile Asp Glu Gly Ser Met Val Lys Lys Gly Gln Val Leu Phe Val
 85 90 95
 Ile Asp Pro Val Gln Tyr Glu Ser Ala Ala Arg Ala Ala Lys Ala Ala
 100 105 110
 Val Ala Thr Ala Lys Ala Asn Val Ser Thr Gln Glu Ile Thr Val Lys
 115 120 125
 Asn Lys Arg Glu Leu Asn Lys Lys Asn Ile Ile Ser Asp Tyr Asp Leu
 130 135 140
 Glu Met Ala Glu Asn Thr Leu Ala Ser Ala Lys Ala Gln Leu Ala Ser
 145 150 155 160
 Ala Glu Ala Gln Leu Ile Ser Ala Asn Gln Asn Leu Ala Tyr Thr Arg
 165 170 175
 Val Thr Ser Pro Ser Asp Gly Val Ala Gly Thr Ile Pro Tyr Arg Val
 180 185 190
 Gly Ser Leu Val Ser Ala Ser Ser Pro Ser Pro Leu Thr Val Ile Ser
 195 200 205
 Asp Ile Thr Gln Met Tyr Val Tyr Phe Ser Leu Thr Glu Lys Glu Leu
 210 215 220
 Leu Asn Leu Ile Arg Gln Asp Gly Ser Gln Thr Glu Phe Leu Asn Ser
 225 230 235 240
 Phe Pro Ala Val Gln Leu Thr Leu Ala Asp Gly Thr Leu Tyr Ala Asp
 245 250 255
 Ser Gly Lys Ile Glu Thr Val Ser Gly Val Ile Asp Gln Asn Thr Gly
 260 265 270
 Ala Val Ser Met Arg Ala Thr Phe Pro Asn His Gly His Leu Leu Arg
 275 280 285
 Thr Gly Gly Thr Gly Asn Ile Gln Ile Pro Tyr Ser Lys Glu Asn Val
 290 295 300
 Ile Val Ile Pro Gln Lys Ala Thr Tyr Glu Ile Gln Asp Lys Lys Phe
 305 310 315 320
 Val Tyr Leu Leu Gln Pro Asp Asn Thr Val Lys Asn Thr Glu Ile Glu
 325 330 335
 Ile Leu Asn Leu Asn Asp Gly Gln Asn Tyr Val Val Thr Ala Gly Leu
 340 345 350

Lys Ala Gly Asp Lys Ile Val Val Glu Asn Val Ser Thr Leu Lys Asp
 355 360 365
 Gly Ala Thr Ile Lys Pro Leu Thr Gln Gln Glu Ser Ala Glu Arg Phe
 370 375 380
 Lys Ala Ala Leu Glu Glu Arg Lys Asn Gln
 385 390

<210> 10394
 <211> 312
 <212> PRT
 <213> B.fragilis

<400> 10394
 Ser Met Gly Lys Gly Leu Lys Trp Ile Ile Ala Phe Ala Gly Ala Met
 1 5 10 15
 Val Ile Val Leu Leu Leu Arg Gly Phe Ala Phe Thr Ser Cys Leu Ile
 20 25 30
 Pro Ser Ala Gly Met Glu Asn Ser Leu Phe Gln Gly Glu Arg Ile Leu
 35 40 45
 Val Asn Lys Trp Ser Tyr Gly Leu Arg Val Pro Tyr Met Ser Leu Phe
 50 55 60
 Ser Tyr His Arg Trp Gly Glu Ser Pro Ile His Lys Asp Asp Ile Val
 65 70 75 80
 Val Phe Asn Asn Pro Ala Gly Ile Lys Glu Pro Ile Ile Asp Arg Arg
 85 90 95
 Glu Ile Tyr Ile Ser Arg Cys Ile Gly Val Pro Gly Asp Thr Leu Leu
 100 105 110
 Ile Asp Ser Leu Phe Asn Val Val Asp Arg Ser Thr Gln Leu Gly Pro
 115 120 125
 Asp Arg Lys Gln Leu Tyr Thr Tyr Pro Gln Thr Lys Glu Gln Gln Leu
 130 135 140
 Asp Ser Leu Leu Ser Ile Leu Ser Ile Gly Pro Asn Glu Leu Met Gly
 145 150 155 160
 Gln His Glu Gly Lys Asn Val Arg Ser Phe Ser Arg Tyr Glu Tyr Tyr
 165 170 175
 Leu Leu Asp Gln Ala Met Asn Gly Lys Ser Trp Ile Gln Pro Leu Gln
 180 185 190
 Gln Ser Leu Gln Glu Glu Ala Lys Pro Leu Ile Val Pro Gly Lys Gly
 195 200 205
 Lys Ala Val Arg Val Tyr Pro Trp Asn Arg Thr Leu Leu Arg Asn Thr
 210 215 220
 Leu Val Leu His Glu Gly Lys Gln Ala Glu Ile Arg Asn Asp Thr Leu
 225 230 235 240
 Tyr Ile Glu Gly Arg Pro Ser Gln His Cys Tyr Phe Thr Lys Asp Tyr
 245 250 255
 Tyr Trp Met Ala Ser Asn Asn Ser Val Asn Leu Ser Asp Ser Arg Leu
 260 265 270
 Phe Gly Phe Val Pro Gln Asp His Val Ile Gly Lys Ala Ser Arg Ile
 275 280 285
 Trp Phe Ser Lys Thr Asp His Thr Gly Ile Phe Ser Gly Tyr Arg Trp
 290 295 300
 Glu Arg Phe Phe Gln Pro Val Lys
 305 310

<210> 10395
 <211> 491
 <212> PRT
 <213> B.fragilis

<220>

<221> UNSURE

<222> (338)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10395

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Asn Leu Leu Asn Gly Lys Thr Ser Ile Ile Arg Met Gln Lys Gln Lys
1           5           10           15
Leu Asn Asn Thr Leu Asn Arg Asn Lys Glu Lys Asn Met Lys Lys Gln
          20           25           30
Ile Ile Gly Met Leu Cys Ala Thr Ala Leu Leu Ser Ser Cys His Ile
          35           40           45
Tyr Lys Ser Tyr Asp Arg Pro Lys Asp Ile Glu Ala Ser Gly Leu Tyr
          50           55           60
Arg Asp Thr Val Ser Val Ala Asp Thr Leu Val Ser Asp Thr Val Asn
          65           70           75           80
Phe Gly Asn Leu Pro Trp Arg Glu Val Phe Thr Asp Pro Gln Leu Gln
          85           90           95
Ala Leu Ile Glu Gln Gly Leu Thr His Asn Thr Asp Leu Leu Thr Ala
          100          105          110
Ala Leu Lys Val Lys Glu Ala Gln Ala Ser Leu Met Ser Ala Arg Leu
          115          120          125
Ala Tyr Ala Pro Ser Leu Gly Leu Ser Pro Gln Gly Thr Ile Ser Ser
          130          135          140
Phe Asp Lys His Ala Ala Thr Lys Thr Tyr Ser Leu Pro Ala Thr Ala
          145          150          155          160
Ser Trp Glu Ile Asp Leu Phe Gly Lys Leu Leu Asn Ala Lys Arg Gly
          165          170          175
Ala Gln Val Thr Leu Leu Gln Thr Lys Ala Tyr Arg Gln Ala Val Gln
          180          185          190
Thr Gln Ile Ile Ser Gly Ile Ala Asn Thr Tyr Tyr Thr Leu Leu Met
          195          200          205
Leu Asp Arg Gln Leu Asp Ile Thr Glu Gln Thr Ala Asp Ile Met Lys
          210          215          220
Arg Asn Val Glu Thr Met Gln Ala Met Lys Asp Ala Ala Met Phe Asn
          225          230          235          240
Thr Thr Ser Ala Gly Val Glu Gln Ser Lys Ala Ala Tyr Ala Gln Val
          245          250          255
Leu Ala Ser Ile Pro Ala Ile Gln Lys Ser Ile Arg Glu Ala Glu Asn
          260          265          270
Ala Met Ser Met Leu Leu Ala Gln Ala Pro Gln Thr Ile Lys Arg Gly
          275          280          285
Val Leu Glu Glu Gln Gln Leu Pro Glu Asp Phe Ser Val Gly Val Pro
          290          295          300
Leu Gln Leu Leu Ser Asn Arg Pro Asp Val Lys Ala Ala Glu Met Ala
          305          310          315          320
Leu Ala Gly Thr Tyr Tyr Asn Ala Asn Ser Thr Arg Ala Ala Phe Tyr
          325          330          335
Pro Xaa Ile Thr Ile Ser Gly Ser Ala Gly Trp Thr Asn Ser Ala Gly
          340          345          350
Ser Ala Ile Ile Asn Pro Gly Lys Leu Leu Ala Ser Val Leu Gly Ser
          355          360          365
Leu Thr Gln Pro Leu Phe Tyr Arg Gly Ala Asn Ile Ala Arg Leu Lys
          370          375          380
Ile Ala Lys Ala Gln Gln Glu Glu Ala Lys Leu Ala Phe Gln Gln Ser
          385          390          395          400
Leu Leu Asn Ala Gly Ser Glu Val Ser Asn Ala Leu Tyr Gln Tyr Gln
          405          410          415
Ser Ala Ser Glu Lys Thr Ala Ser Arg Lys Leu Gln Val Glu Ser Ser

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<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (473)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10397

Lys	Glu	Ile	Asp	Phe	Gly	Asn	Arg	Phe	His	Ala	Ser	Phe	Asn	Ala	Ala	1	5	10	15
Tyr	Asp	Pro	Val	Leu	Lys	Lys	Tyr	Lys	Lys	Arg	Val	Leu	Phe	Phe	Ile	20	25	30	
Gln	Lys	Pro	Val	Leu	Thr	Ile	Gly	Ser	Val	Val	Val	Gly	Phe	Ala	Leu	35	40	45	
Leu	Ile	Phe	Leu	Met	Lys	Val	Thr	Pro	Thr	Gly	Leu	Val	Pro	Asn	Glu	50	55	60	
Asp	Thr	Gly	Thr	Ile	Met	Ala	Val	Val	Asp	Met	Pro	Pro	Gly	Ser	Ser	65	70	75	80
Leu	Glu	Arg	Thr	Gln	Glu	Val	Met	Trp	Gln	Val	Asp	Ser	Leu	Leu	Ala	85	90	95	
Ser	Asp	Pro	Ala	Ile	Glu	Ser	Arg	Thr	Met	Ile	Ala	Gly	Tyr	Ser	Phe	100	105	110	
Ile	Ala	Gly	Gln	Gly	Pro	Ser	Tyr	Gly	Ser	Phe	Ile	Cys	Lys	Met	Lys	115	120	125	
Asn	Trp	Asp	Glu	Arg	Ser	Ile	Ala	Gln	Arg	Ser	Asp	Phe	Val	Ser	Gly	130	135	140	
Met	Leu	Tyr	Leu	Lys	Ala	Arg	Glu	Val	Ile	Lys	Asp	Ala	Arg	Val	Leu	145	150	155	160
Leu	Phe	Ala	Pro	Pro	Met	Ile	Pro	Gly	Tyr	Ser	Val	Ser	Asn	Gly	Phe	165	170	175	
Glu	Met	Asn	Leu	Gln	Asp	Lys	Thr	Gly	Gly	Ser	Leu	Asp	Lys	Phe	Tyr	180	185	190	
Glu	Val	Ala	Gln	Asp	Phe	Ile	Thr	Lys	Leu	Gln	Ala	Arg	Pro	Glu	Ile	195	200	205	
Gln	Ser	Ala	Gln	Thr	Ser	Phe	Asn	Pro	Asn	Phe	Pro	Gln	Tyr	Met	Ile	210	215	220	
Asp	Ile	Asp	Ala	Ala	Ala	Cys	Lys	Lys	Ala	Gly	Leu	Ser	Pro	Ser	Asp	225	230	235	240
Ile	Leu	Thr	Thr	Leu	Gln	Gly	Tyr	Tyr	Gly	Gly	Leu	Tyr	Ser	Ser	Asn	245	250	255	
Phe	Asn	Arg	Phe	Gly	Lys	Met	Tyr	Arg	Val	Met	Ile	Gln	Ala	Asp	Pro	260	265	270	
Asn	Ser	Arg	Thr	Asn	Leu	Glu	Ser	Leu	Asn	Ser	Val	Lys	Val	Arg	Asn	275	280	285	
Gly	Asn	Glu	Met	Ala	Pro	Ile	Thr	Gln	Phe	Met	Ser	Val	Lys	Arg	Ile	290	295	300	
Tyr	Gly	Pro	Asp	Asn	Ile	Lys	Arg	Phe	Asn	Met	Phe	Thr	Ala	Met	Thr	305	310	315	320
Ile	Asn	Gly	Ser	Pro	Ala	Asp	Gly	Tyr	Ser	Ser	Gly	Gln	Ala	Ile	Gln	325	330	335	
Ala	Met	Gln	Glu	Val	Ala	Glu	Gln	Thr	Leu	Pro	Thr	Gly	Tyr	Gly	Tyr	340	345	350	
Glu	Phe	Ser	Gly	Met	Thr	Arg	Glu	Gln	Ser	Ser	Ser	Gly	Ser	Ser	Thr	355	360	365	
Thr	Ala	Met	Ile	Phe	Val	Leu	Cys	Phe	Val	Phe	Val	Tyr	Leu	Leu	Leu	370	375	380	
Ser	Ala	Gln	Tyr	Glu	Ser	Tyr	Ile	Leu	Pro	Phe	Ala	Val	Leu	Leu	Ser	385	390	395	400

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Ile Pro Phe Gly Leu Ala Gly Ser Phe Ile Phe Ala His Leu Met Gly
 405 410 415
 Leu Ala Asn Asn Val Leu Pro Ile Leu Gly Ala Ala Thr Asn Asn Ile
 420 425 430
 Tyr Met Gln Ile Ala Leu Ile Met Leu Met Gly Leu Leu Ala Lys Asn
 435 440 445
 Ala Ile Leu Ile Val Glu Phe Ala Leu Asp Arg Arg Lys Met Gly Met
 450 455 460
 Ser Ile Thr Trp Ala Ala Val Leu Xaa Ala Gly Ala Arg Leu Arg Pro
 465 470 475 480
 Ile Leu Met Thr Ser Leu Ala Met Val Val Gly Leu Leu Pro Leu Met
 485 490 495
 Phe Ala Met Gly Val Gly Ala Asn Gly Asn Arg Ala Leu Gly Thr Ala
 500 505 510
 Ala Val Gly Gly Met Phe Ile Gly Met Ile Cys Gln Ile Phe Val Val
 515 520 525
 Pro Ala Leu Phe Val Ile Phe Gln Tyr Leu Gln Glu Lys Val Lys Pro
 530 535 540
 Ile Glu Trp Glu Asp Ile Asp Asn Thr Asp Ala Glu Thr Glu Ile Glu
 545 550 555 560
 Gln Tyr Ala Lys

<210> 10398

<211> 208

<212> PRT

<213> B.fragilis

<400> 10398

Arg Tyr Lys Asp Met Lys Lys Leu Ile Ile Phe Asp Leu Asp Gly Thr
 1 5 10 15
 Leu Leu Asn Thr Ile Ala Asp Leu Ala His Ser Thr Asn His Ala Leu
 20 25 30
 Gln Thr Leu Gly Tyr Pro Thr His Glu Val Ala Ser Tyr Asn Phe Met
 35 40 45
 Val Gly Asn Gly Ile Asn Lys Leu Phe Glu Arg Ala Leu Pro Glu Gly
 50 55 60
 Glu Lys Thr Glu Glu Asn Val Leu Arg Val Arg Lys Glu Phe Leu Leu
 65 70 75 80
 His Tyr Asp Arg His Asn Ala Asp Glu Ser Arg Pro Tyr Pro Gly Ile
 85 90 95
 Pro Glu Leu Leu Glu Thr Leu Gln His Lys Gly Tyr Lys Leu Ala Val
 100 105 110
 Ala Ser Asn Lys Tyr Gln Ala Ala Thr Glu Lys Leu Ile Ala His Tyr
 115 120 125
 Phe Pro Gly Ile Arg Phe Val Ala Val Phe Gly Gln Arg Glu Gly Val
 130 135 140
 Lys Val Lys Pro Asp Pro Ala Val Val His Asp Ile Leu Gln Ile Ala
 145 150 155 160
 Asp Val Ser Lys Asp Glu Val Leu Tyr Val Gly Asp Ser Gly Val Asp
 165 170 175
 Met Gln Thr Ala Ile Asn Ser Gly Val Thr Ser Cys Gly Val Thr Gly
 180 185 190
 Gly Phe Arg Pro Arg Thr Gly Leu Gly Ile Arg Leu Ala Gly Ile Leu
 195 200 205

<210> 10399

<211> 171

<212> PRT

<213> B.fragilis

<400> 10399

Val Lys Val Glu Gln Ile His Arg Lys Lys Gly Lys Leu Val Thr Ser
 1 5 10 15
 Gly Met Gly Lys Ala Gly Gln Ile Ala Met Asn Ile Ala Thr Thr Phe
 20 25 30
 Cys Ser Thr Gly Ile Pro Ser Val Phe Leu His Pro Ser Glu Ala Gln
 35 40 45
 His Gly Asp Leu Gly Ile Leu Gln Glu Asn Asp Leu Leu Leu Leu Ile
 50 55 60
 Ser Asn Ser Gly Lys Thr Arg Glu Ile Val Glu Leu Thr Gln Leu Ala
 65 70 75 80
 His Asn Leu Asn Pro Gly Leu Lys Phe Ile Val Ile Thr Gly Asn Pro
 85 90 95
 Asp Ser Pro Leu Ala Ser Glu Ser Asp Val Cys Leu Ser Thr Gly His
 100 105 110
 Pro Ala Glu Val Cys Thr Leu Gly Met Thr Pro Thr Thr Ser Thr Thr
 115 120 125
 Val Met Thr Val Ile Gly Asp Ile Leu Val Val Gln Thr Met Lys Arg
 130 135 140
 Thr Glu Phe Thr Ile Glu Gly Tyr Ser Lys Arg His His Gly Gly Tyr
 145 150 155 160
 Leu Gly Glu Lys Ser Arg Lys Leu Cys Val Lys
 165 170

<210> 10400

<211> 1030

<212> PRT

<213> B.fragilis

<400> 10400

Leu Leu Thr Glu Cys Leu Ala Met Cys Ser Leu Ala Thr Met Ala Gln
 1 5 10 15
 His Asp Glu Trp Lys Asn Pro Glu Ile Asn Ala Val Asn Arg Ala Pro
 20 25 30
 Met His Thr Asn Tyr Phe Ala Tyr Ser Ser Ser Glu Glu Ala Ala Lys
 35 40 45
 Ala Asp Lys Glu Asn Ser Ser Asn Phe Met Thr Leu Asn Gly Ile Trp
 50 55 60
 Lys Phe Asn Trp Val Lys Asn Ala Asp Ala Arg Pro Thr Asp Phe Tyr
 65 70 75 80
 Arg Thr Asp Tyr Asn Asp Lys Gly Trp Gly Gln Met Lys Val Pro Gly
 85 90 95
 Val Trp Glu Met Asn Gly Tyr Gly Asp Pro Ile Tyr Val Asn Val Gly
 100 105 110
 Tyr Ala Trp Arg Ser Gln Tyr Lys Asn Asn Pro Pro Tyr Val Pro Ile
 115 120 125
 Glu Asn Asn His Val Gly Ser Tyr Arg Lys Glu Ile Ile Ile Pro Ala
 130 135 140
 Glu Trp Ser Glu Lys Glu Ile Phe Ala His Phe Gly Ser Val Thr Ser
 145 150 155 160
 Asn Met Tyr Leu Trp Val Asn Gly Lys Tyr Val Gly Tyr Ser Glu Asp
 165 170 175
 Ser Lys Leu Glu Ala Glu Phe Asn Leu Thr Lys Tyr Leu Lys Pro Gly
 180 185 190
 Lys Asn Leu Ile Ala Phe Gln Val Phe Arg Trp Cys Asp Gly Thr Tyr
 195 200 205
 Leu Glu Asp Gln Asp Phe Phe Arg Tyr Ser Gly Val Gly Arg Asn Cys

210	215	220
Tyr Leu Tyr Ser Arg Asn Lys Lys Tyr Ile Gln Asp Ile Arg Val Thr		
225	230	235
Pro Asp Leu Asp Ser Asn Tyr Thr Asn Gly Thr Leu Asn Val Ala Leu		
	245	250
Asn Leu Asn Gly Ser Gly Thr Val Glu Leu Asn Leu Thr Asp Pro Ala		
	260	265
Gly Lys Ser Val Ala Thr Ala Gln Val Asn Gly Asn Gly Gln Lys Ser		
	275	280
Val Val Met Asp Val Ser Asn Pro Glu Lys Trp Thr Ala Glu Thr Pro		
	290	295
Asn Leu Tyr Thr Leu Thr Ala Thr Leu Lys Asn Gly Ser Asn Thr Leu		
305	310	315
Glu Val Ile Pro Val Lys Val Gly Phe Arg Lys Ile Glu Leu Lys Gly		
	325	330
Gly Gln Ile Leu Val Asn Gly Gln Pro Val Leu Phe Lys Gly Ala Asp		
	340	345
Arg His Glu Met Asp Pro Asp Gly Gly Tyr Val Val Ser Arg Glu Arg		
	355	360
Met Leu Gln Asp Ile Leu Arg Met Lys Gln Leu Asn Ile Asn Ala Val		
370	375	380
Arg Thr Cys His Tyr Pro Asp Asp Asn Leu Trp Tyr Asp Leu Cys Asp		
385	390	395
Gln Tyr Gly Ile Tyr Val Val Ala Glu Ala Asn Ile Glu Ser His Gly		
	405	410
Met Gly Tyr Gly Lys Glu Thr Leu Ala Lys Asn Pro Ser Tyr Lys Lys		
	420	425
Ala His Met Glu Arg Asn Gln Arg Asn Val Gln Arg Gly Tyr Asn His		
	435	440
Pro Ser Ile Ile Phe Trp Ser Leu Gly Asn Glu Ala Gly Tyr Gly Pro		
	450	455
Asn Phe Glu Gln Cys Tyr Thr Trp Ile Lys Asn Glu Asp Lys Thr Arg		
465	470	475
Ala Val Gln Tyr Glu Gln Ala Gly Thr Asn Glu Phe Thr Asp Ile Phe		
	485	490
Cys Pro Met Tyr Tyr Asp Tyr Asp Ala Cys Lys Lys Tyr Ser Glu Gly		
	500	505
Asn Ile Asp Lys Pro Leu Ile Gln Cys Glu Tyr Ala His Ala Met Gly		
	515	520
Asn Ser Gln Gly Gly Phe Lys Glu Tyr Trp Asp Leu Ile Arg Lys Tyr		
	530	535
Pro Lys Tyr Gln Gly Gly Phe Ile Trp Asp Phe Val Asp Gln Ser Asn		
545	550	555
His Trp Lys Asn Lys Asp Gly Ile Asp Ile Tyr Gly Tyr Gly Gly Asp		
	565	570
Phe Asn Lys Tyr Asp Ala Ser Asp Asn Asn Phe Asn Asp Asn Gly Leu		
	580	585
Ile Ser Pro Asp Arg Arg Pro Asn Pro His Ala His Glu Val Gly Tyr		
	595	600
Phe Tyr Gln Ser Ile Trp Thr Thr Pro Gly Asp Leu Ser Lys Gly Glu		
	610	615
Ile Lys Val Tyr Asn Glu Asn Phe Phe Arg Asp Leu Ser Ala Tyr Tyr		
625	630	635
Met Glu Trp Gln Leu Ala Asn Gly Glu Val Met Gln Thr Gly Val		
	645	650
Val Gln Asp Leu Asn Val Ala Pro Gln Gln Thr Ala Thr Leu Lys Leu		
	660	665
Asn Leu Asn Thr Glu Lys Val Cys Pro Cys Lys Glu Leu Leu Leu Asn		
	675	680
		685

Val Thr Tyr Lys Leu Lys Ala Ala Glu Thr Leu Met Pro Ala Gly Ser
 690 695 700
 Thr Val Ala Tyr Asp Gln Leu Thr Ile Arg Pro Tyr Thr Ala Lys Ala
 705 710 715 720
 Leu Glu Leu Lys Asn Gln Lys Ala Ser Asn Leu Asp Ile Val Val Pro
 725 730 735
 Val Ile Lys Asp Asn Asp His Asn Tyr Leu Ile Val Glu Gly Glu Asn
 740 745 750
 Phe Ile Ile Glu Phe Asn Lys His Asn Gly Tyr Leu Ser Arg Tyr Glu
 755 760 765
 Ala Asp Gly Met Gln Leu Leu Asn Pro Gly Ala Gln Leu Thr Pro Asn
 770 775 780
 Phe Trp Arg Ala Pro Thr Asp Asn Asp Tyr Gly Ala Gly Leu Gln His
 785 790 795 800
 Arg Tyr Ala Val Trp Lys Asn Pro Gly Leu Lys Leu Thr Ser Leu Lys
 805 810 815
 Gln Ser Ile Glu Asn Glu Gln Ala Ile Val Gln Ala Glu Tyr Glu Met
 820 825 830
 Lys Ala Val Lys Gly Lys Leu Phe Leu Thr Tyr Val Ile Asn Asn Glu
 835 840 845
 Gly Ala Val Lys Val Thr Gln Lys Met Glu Ala Gly Lys Glu Glu Lys
 850 855 860
 Val Ser Asp Met Phe Arg Phe Gly Met Gln Met Glu Met Pro Glu Asn
 865 870 875 880
 Phe Asn Glu Val Glu Tyr Tyr Gly Arg Gly Pro Val Glu Asn Tyr Ala
 885 890 895
 Asp Arg Asn His Ser Thr Leu Ile Gly Lys Tyr Arg Gln Thr Val Ala
 900 905 910
 Glu Gln Phe Tyr Pro Tyr Ile Arg Pro Gln Glu Thr Gly Thr Lys Thr
 915 920 925
 Asp Leu Arg Trp Trp Arg Val Leu Asn Ile Ser Gly Asn Gly Leu Gln
 930 935 940
 Phe Val Gly Asp Ala Pro Phe Ser Ala Ser Ala Leu Asn Tyr Ser Ile
 945 950 955 960
 Glu Ser Leu Asp Asp Gly Val Gln Lys Asp Gln Arg His Ser Pro Glu
 965 970 975
 Val Ala Lys Ala Pro Phe Thr Asn Leu Cys Ile Asp Lys Val Gln Met
 980 985 990
 Gly Leu Gly Cys Val Asn Ser Trp Gly Thr Leu Pro Leu Glu Lys Tyr
 995 1000 1005
 Arg Val Pro Tyr Gln Asp Tyr Glu Phe Ser Phe Ile Leu Thr Pro Val
 1010 1015 1020
 Arg His Lys Val Asn Met
 1025 1030

<210> 10401

<211> 450

<212> PRT

<213> B.fragilis

<400> 10401

Leu Tyr Arg Leu Tyr Ile Gln Asn Ile Ser Arg Lys Asp Lys Ile Phe
 1 5 10 15
 Ile Thr Phe Val Glu His Ile Asn Val Leu Leu Thr Met Glu Gln Leu
 20 25 30
 Leu His Tyr Val Trp Lys His Lys Ile Phe Pro Leu His Glu Leu Gln
 35 40 45
 Thr Thr Thr Gly Leu Pro Val Glu Val Ile Asp Thr Gly Leu Pro Asn
 50 55 60

Ser Asp Ser Gly Pro Asp Phe Phe Asn Ala Lys Leu Lys Ile Gly Gly
 65 70 75 80
 Thr Leu Trp Val Gly Asn Val Glu Ile His Thr Ala Ser Ser Asp Trp
 85 90 95
 Phe Arg His Gly His Asp Arg Asp Ile Ala Tyr Asp Ser Val Ile Leu
 100 105 110
 His Ile Val Thr Glu Ile Asp Cys Glu Ile Tyr Arg Ser Asn Gly Glu
 115 120 125
 Pro Val Pro Gln Leu Arg Leu Pro Cys Pro Glu Gln Val Lys Glu His
 130 135 140
 Tyr Asp Glu Leu Cys Arg Ala Asp Ile His Pro Pro Cys Tyr Ser Ile
 145 150 155 160
 Leu Glu Thr Leu Pro Lys Leu Thr Ile His Ser Trp Leu Thr Ala Leu
 165 170 175
 Gln Thr Glu Arg Phe Asp Gln Lys Asn Arg Thr Ile Thr Arg Arg Leu
 180 185 190
 Gln Arg Cys Asn Gln His Trp Glu Asp Ala Phe Phe Ile Thr Leu Ala
 195 200 205
 Arg Asn Phe Gly Phe Gly Leu Asn Gly Asp Ala Phe Glu Thr Trp Ala
 210 215 220
 Asn Leu Leu Ser Phe Arg Ala Ile Asp Lys His Arg Asp Asp Leu Thr
 225 230 235 240
 Gln Val Glu Ala Phe Phe Gly Gln Ala Gly Leu Leu Glu Gly Glu
 245 250 255
 Ser Ala Asp Asp Tyr Phe Ser Trp Met Gln Lys Glu Phe Arg Tyr Leu
 260 265 270
 Gln His Lys Phe Glu Leu Pro Pro Val Met Asn Pro Ser Leu Trp Arg
 275 280 285
 Phe Leu Arg Leu Arg Pro Gly Asn Phe Pro His Val Arg Leu Ala Gln
 290 295 300
 Leu Ala Ser Leu Tyr Tyr Arg Glu His Ser Leu Phe Ser Arg Val Met
 305 310 315 320
 Glu Ala Glu Thr Leu Lys Asp Leu Lys Gln Ile Phe Ala Gly His Thr
 325 330 335
 Ser Ala Tyr Trp Glu Glu His Phe Met Phe Gly Lys Ser Ser Pro Arg
 340 345 350
 Arg Glu Lys Ser Ile Gly Ala Gly Ala Lys Glu Leu Ile Ile Ile Asn
 355 360 365
 Thr Val Ile Pro Phe Leu Tyr Ala Tyr Gly Leu His Lys Ala Asp Glu
 370 375 380
 Arg Leu Cys Glu Arg Ala Ala Ser Leu Leu Glu Glu Leu Lys Ala Glu
 385 390 395 400
 Asn Asn Tyr Val Thr Arg Met Trp Ser Gly Ala Gly Ile Pro Val Gln
 405 410 415
 Thr Ala Ala Asp Ser Gln Ala Leu Leu Gln Leu Gln Lys Glu Tyr Cys
 420 425 430
 Asp Lys Lys Lys Cys Leu Tyr Cys Arg Phe Gly Tyr Glu Tyr Leu Arg
 435 440 445
 His Lys
 450

<210> 10402

<211> 74

<212> PRT

<213> B.fragilis

<400> 10402

Glu Leu Phe Arg Leu Thr Val Val Gly Cys Asn Val Ser Thr Ala His
 1 5 10 15

Ser Gly Val Pro Pro Met Leu Lys Pro Phe Leu Pro Gln Pro Asp Asn
 20 25 30
 Lys Ala Lys Gln Asn Ala Asn Lys Thr Ile Leu Leu Phe Ile Pro Ser
 35 40 45
 Leu Tyr Ser Ile Phe Asn Asp Val His Phe Val Ala Lys Trp Phe Ile
 50 55 60
 Val Ile Thr Leu Ser Gly Ile Asp Glu Asn
 65 70

<210> 10403
 <211> 275
 <212> PRT
 <213> B.fragilis

<400> 10403
 Ala Ser Ile Arg His Trp Ala Ala Glu Glu Lys Ile Asn Phe Lys Tyr
 1 5 10 15
 Asn Thr Ile Met Ile Ser Pro Leu Ala Ser Ile Ala Pro Gly Ala Lys
 20 25 30
 Ile Gly Lys Asn Val Ile Ile Gln Pro Phe Ala Tyr Ile Glu Asp Asn
 35 40 45
 Val Glu Ile Gly Asp Asp Cys Ile Ile Met Pro Tyr Ala Ser Val Leu
 50 55 60
 Asn Gly Thr Arg Leu Gly Lys Gly Asn Lys Val Tyr Gln His Ala Val
 65 70 75 80
 Leu Gly Ala Glu Pro Gln Asp Phe His Tyr Lys Gly Glu Glu Ser Ser
 85 90 95
 Leu Ile Ile Gly Asp Asn Asn His Ile Arg Glu Asn Val Val Ile Ser
 100 105 110
 Arg Ala Thr Phe Gly Gly Asn Ala Thr Lys Ile Gly Asn Gly Asn Phe
 115 120 125
 Leu Met Asp Lys Val His Ile Cys His Asp Val Gln Ile Gly Asp Asn
 130 135 140
 Cys Val Ala Gly Ile Gly Thr Thr Ile Ala Gly Glu Cys Thr Leu Asp
 145 150 155 160
 Asp Cys Val Ile Leu Ser Gly Asn Val Thr Leu His Gln Tyr Cys His
 165 170 175
 Val Gly Gln Trp Thr Leu Val Gln Ser Gly Cys Arg Ile Ser Lys Asp
 180 185 190
 Val Pro Pro Tyr Ser Ile Met Ala Gly Asn Pro Val Glu Tyr His Gly
 195 200 205
 Val Asn Ala Val Val Leu Gln Gln His Lys Asn Thr Ser Glu Arg Val
 210 215 220
 Leu Arg His Ile Ala Asn Ala Tyr Arg Leu Ile Tyr Gln Gly Asn Phe
 225 230 235 240
 Ser Leu Gln Asp Ala Val Gln Lys Ile Ile Asp Gln Val Pro Met Ser
 245 250 255
 Glu Glu Ile Glu Asn Ile Val Ala Phe Val Lys Glu Ser Lys Arg Gly
 260 265 270
 Ile Val Lys
 275

<210> 10404
 <211> 433
 <212> PRT
 <213> B.fragilis

<400> 10404
 Thr Thr Ile Ser Phe Ile Val Phe Leu Cys Pro Gln Pro Asn Leu Ile

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<210> 10405
<211> 498
<212> PRT
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<213> B.fragilis

<400> 10405

Lys Ile Asn Ile Met Arg Lys Ala Thr Arg Thr Gln Trp Ile Lys Cys
 1 5 10 15
 Ser Ile Ala Ile Leu Leu Tyr Leu Ile Phe Leu Ile Trp Val Lys Ser
 20 25 30
 Trp Trp Gly Leu Ile Val Val Pro Phe Ile Phe Asp Ile Tyr Ile Thr
 35 40 45
 Lys Lys Ile Pro Trp Ser Phe Trp Lys Lys Ser Lys Asn Pro Thr Val
 50 55 60
 Arg Ser Val Met Ser Trp Val Asp Ala Ile Val Phe Ala Leu Val Ala
 65 70 75 80
 Val Tyr Phe Val Asn Ile Tyr Val Phe Gln Asn Tyr Gln Ile Pro Ser
 85 90 95
 Ser Ser Leu Glu Lys Ser Leu Leu Val Gly Asp Phe Leu Tyr Val Ser
 100 105 110
 Lys Met Ser Tyr Gly Pro Arg Val Pro Asn Thr Pro Leu Ser Met Pro
 115 120 125
 Leu Ala Gln His Thr Leu Pro Ile Leu Asn Thr Lys Ser Tyr Ile Glu
 130 135 140
 Trp Pro Gln Trp Lys Tyr Lys Arg Val Pro Gly Phe Gly Lys Val Lys
 145 150 155 160
 Leu Asn Asp Ile Val Val Phe Asn Phe Pro Ala Gly Asp Thr Val Ala
 165 170 175
 Leu Asn Phe Gln Asp Ala Asp Phe Tyr Thr Leu Ala Tyr Asn Ile Gly
 180 185 190
 Lys Gln Ile Tyr Pro Asn Pro Ile Asp Met Asp Ser Leu Thr Arg Glu
 195 200 205
 Gln Gln Lys Thr Val Tyr Asp Leu Tyr Tyr Asn Ala Gly Arg Lys Glu
 210 215 220
 Ile Leu Ser Asn Pro Gln Arg Tyr Gly Lys Val Val Thr Arg Pro Val
 225 230 235 240
 Asp Arg Arg Glu Asn Tyr Val Lys Arg Cys Val Gly Leu Pro Gly Asp
 245 250 255
 Thr Leu Gln Ile Ile Asn Gly Gln Val Met Ile Asp Gly Lys Ala Ile
 260 265 270
 Glu Asn Pro Glu Asn Leu Gln Phe Asn Tyr Phe Val Gln Thr Thr Gly
 275 280 285
 Pro Tyr Ile Thr Glu Glu Met Phe Arg Glu Leu Gly Ile Ser Lys Ala
 290 295 300
 Asp Gln Arg Leu Thr Pro Glu Gly Ala Ser Tyr Glu Glu Gly Leu Ile
 305 310 315 320
 Glu Leu Gly Leu Asp Gly Arg Asn Ala Gln Gly Gly Leu Asn Pro Val
 325 330 335
 Tyr His Leu Pro Leu Thr Lys Lys Met Tyr Asp Thr Leu Ser Gly Asn
 340 345 350
 Lys Lys Leu Val Gly Lys Ile Val Ile Glu Pro Glu Glu Tyr Ser Gly
 355 360 365
 Glu Val Tyr Pro Leu Asn Leu Asn Thr His Trp Asn Arg Ser Asp Tyr
 370 375 380
 Gly Pro Ile Trp Ile Pro Ala Lys Gly Ala Thr Ile Thr Leu Thr Pro
 385 390 395 400
 Asp Asn Leu Pro Ile Tyr Glu Arg Cys Ile Thr Ala Tyr Glu Gly Asn
 405 410 415
 Lys Leu Glu Gln Lys Glu Asp Gly Ile Tyr Ile Asn Gly Val Lys Thr
 420 425 430
 Asn Gln Tyr Thr Phe Gln Met Asp Tyr Tyr Trp Met Met Gly Asp Asn
 435 440 445

Arg His Asn Ser Ala Asp Ser Arg Tyr Trp Gly Phe Val Pro Glu Asp
 450 455 460
 His Val Val Gly Lys Pro Ile Val Val Trp Leu Ser Leu Asp Lys Asp
 465 470 475 480
 Arg Asn Trp Phe Asp Gly Lys Ile Arg Trp Asn Arg Ile Phe Lys Trp
 485 490 495
 Val Asp

<210> 10406
 <211> 112
 <212> PRT
 <213> B.fragilis

<400> 10406
 Arg Ser Tyr Phe Leu Trp Ser Tyr Gly Gly Ile Ser Pro Pro Tyr Arg
 1 5 10 15
 Thr Trp Asn Pro Ser Gly Arg Asn Phe Ile Gly Lys Gln Gly Gly Lys
 20 25 30
 Leu Ile Leu Ile Met Val Trp Asp Glu Asn Gln Lys Gly Glu Pro Gly
 35 40 45
 Lys Arg Arg Lys Gly Leu Trp Val Leu Pro Leu Ile Glu Lys Glu Thr
 50 55 60
 Asp Ile Ser Leu Arg Val Phe Asp Leu Arg Pro Arg Pro Trp Ala Arg
 65 70 75 80
 Asn Tyr Pro Gly Phe Tyr Glu Asp Lys Arg Leu Leu Asp Arg Ser Ile
 85 90 95
 Leu Arg Ala Ile Trp Thr Arg Thr Phe Phe Asp Ile Asn Val Ala Cys
 100 105 110

<210> 10407
 <211> 371
 <212> PRT
 <213> B.fragilis

<400> 10407
 Leu Tyr His Val Thr Arg Ile Pro Ile Phe Ala Ile Ser Ala Phe Arg
 1 5 10 15
 Gln Ile Gln Thr Met Tyr Lys Asn Leu Phe Asn Leu Leu Thr Ile Leu
 20 25 30
 Leu Ile Leu Pro Ser Cys Thr Asp Met Ser Pro Asn Ile Ser Val Val
 35 40 45
 Cys Glu Glu Asn Asn Ile Gly Asn Cys Ile Leu Lys Trp Glu Thr Thr
 50 55 60
 Pro Leu Ile Lys Gly Gln Val Lys Val Tyr Thr Ser Asp Asn Pro Glu
 65 70 75 80
 Phe Ile Pro Glu Asp Asn Pro Val Ala Met Ala Asn Ile Ser Asp Ala
 85 90 95
 Arg Met Thr Ile Val Thr Asn Asp Pro Ser Arg Arg Ser Tyr Tyr Met
 100 105 110
 Leu Val Phe Asn Asp Lys Tyr Cys Val Lys Val Ala Pro Arg Asn Val
 115 120 125
 Asn Met Pro Gly Ile Gln Asn Phe Arg Asp Leu Gly Gly Tyr Lys Ser
 130 135 140
 Ala Thr Gly Lys His Val Arg Trp Gly Lys Leu Tyr Arg Ser Ala Gln
 145 150 155 160
 Ile Asp Ser Leu His Cys Phe Ala Leu Arg Lys Leu Gln Asn Leu Gly
 165 170 175
 Ile Lys Thr Ile Leu Asp Leu Arg Ser Glu Ser Glu Leu His Asn Thr

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      180              185              190
Pro Pro Leu Gln Lys Gly Phe Asn Val Val His Ile Pro Ile Asn Thr
      195              200              205
Gly Asp Met Glu His Ile Leu His Gly Ile Gln Gln Glu Lys Ile Lys
      210              215              220
Thr Asp Thr Ile Tyr His Met Val Glu Ala Met Asn Arg Glu Leu Val
      225              230              235              240
Ala Lys Tyr Gln Lys Glu Tyr Lys Glu Ile Phe Asp Ile Leu Leu Asp
      245              250              255
Lys Asn Ser Tyr Pro Val Val Ile His Cys Ser Ser Gly Lys Gly Arg
      260              265              270
Thr Gly Ile Val Ser Ala Leu Ile Leu Ala Ser Leu Asp Val Asn Ala
      275              280              285
Asp Ile Ile Met Glu Asp Tyr Arg Leu Ser Asn Asp Tyr Phe Asn Ile
      290              295              300
Pro Lys Ala Ser Lys Tyr Ala Tyr Asn Leu Pro Val Asn Ser Gln Glu
      305              310              315              320
Ala Ile Thr Thr Leu Phe Ser Ala Lys Glu Asp Phe Leu Asn Ala Ala
      325              330              335
Lys Asp Glu Ile Glu Arg Lys Tyr Gly Asp Val Pro Thr Tyr Leu Arg
      340              345              350
Lys Ala Ile Gly Leu Gln Ser Glu Asp Ile His Arg Leu Arg Thr Ile
      355              360              365
Leu Leu Glu
      370

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<210> 10408
<211> 214
<212> PRT
<213> B.fragilis

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<400> 10408
Thr Met Lys Val Lys Lys Ile Ser Ile Ala Asn Val Glu Val Asp Ala
1              5              10              15
Leu Pro Glu Leu Leu Asp Lys Glu Lys Ile Gly Phe Gln Pro Ile Asp
      20              25              30
Asn Val Asn Trp Glu Ala Tyr Pro Tyr Arg Pro Lys Val Glu Phe Arg
      35              40              45
Ile Ala His Ser Asp Asp Ala Val Leu Leu His Phe Asn Val Lys Glu
      50              55              60
Ala Ser Val Arg Ala Lys Tyr Gly Glu Asp Asp Gly Ser Val Trp Thr
      65              70              75              80
Asp Ser Cys Val Glu Phe Phe Ser Val Pro Thr Gly Asp Gly Ile Tyr
      85              90              95
Tyr Asn Ile Glu Cys Asn Cys Ile Gly Thr Ile Leu Ile Gly Ala Gly
      100             105             110
Ala Glu Arg Asn Asn Arg Glu Arg Ala Ser Arg Glu Val Thr Asp Gln
      115             120             125
Val Lys Arg Trp Ala Ser Leu Gly Arg Gln Pro Phe Asp Glu Arg Ile
      130             135             140
Gly Glu Cys Asn Trp Glu Val Ala Leu Val Ile Pro Tyr Thr Ala Phe
      145             150             155             160
Phe Lys His His Ile Thr Ser Leu Asp Gly Lys Thr Ile Thr Ala Asn
      165             170             175
Phe Tyr Lys Cys Gly Asp Glu Leu Gln Thr Pro His Phe Leu Ser Trp
      180             185             190
Asn Pro Ile Lys Ile Glu Lys Pro Asp Phe His Arg Pro Asp Phe Phe
      195             200             205
Gly Thr Leu Glu Phe Glu

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210

<210> 10409

<211> 485

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (467),(474),(476),(481),(483)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10409

Cys	Val	Ser	Leu	His	Pro	Lys	Ile	Lys	Ile	Tyr	Arg	Asp	Leu	Met	Lys
1				5				10					15		
Thr	Phe	Glu	Glu	Leu	Gly	Val	Ser	Pro	Glu	Ile	Arg	Lys	Ala	Ile	Glu
			20					25					30		
Glu	Met	Gly	Tyr	Glu	Asn	Pro	Met	Pro	Val	Gln	Glu	Glu	Val	Ile	Pro
	35						40					45			
Tyr	Leu	Leu	Gly	Glu	Asn	Asn	Asp	Val	Val	Ala	Leu	Ala	Gln	Thr	Gly
	50					55					60				
Thr	Gly	Lys	Thr	Ala	Ala	Phe	Gly	Leu	Pro	Leu	Ile	Gln	Lys	Ile	Asn
65					70					75					80
Val	Lys	Asn	Arg	Ile	Pro	Gln	Ser	Leu	Val	Leu	Cys	Pro	Thr	Arg	Glu
				85					90					95	
Leu	Cys	Leu	Gln	Ile	Ala	Gly	Asp	Leu	Asn	Asp	Tyr	Ser	Lys	Tyr	Ile
			100					105					110		
Asp	Gly	Leu	Lys	Val	Leu	Pro	Val	Tyr	Gly	Gly	Ser	Ser	Ile	Asp	Ser
			115					120					125		
Gln	Ile	Arg	Ser	Leu	Lys	Arg	Gly	Val	His	Ile	Ile	Val	Ala	Thr	Pro
						135							140		
Gly	Arg	Leu	Leu	Asp	Leu	Met	Glu	Arg	Lys	Thr	Val	Ser	Leu	Ala	Thr
145					150					155					160
Val	Thr	Asn	Val	Val	Met	Asp	Glu	Ala	Asp	Glu	Met	Leu	Asn	Met	Gly
				165					170					175	
Phe	Thr	Asp	Ser	Ile	Asn	Ala	Ile	Leu	Ala	Asp	Val	Pro	Gln	Glu	Arg
			180					185					190		
Asn	Thr	Leu	Phe	Ser	Ala	Thr	Met	Ser	Pro	Glu	Ile	Ala	Arg	Ile	
		195					200					205			
Ser	Lys	Asn	Tyr	Leu	His	Asn	Ala	Lys	Glu	Ile	Thr	Ile	Gly	Arg	Lys
		210				215					220				
Asn	Glu	Ser	Thr	Ser	Asn	Val	Lys	His	Val	Val	Tyr	Thr	Val	His	Ala
225					230						235				240
Lys	Asp	Lys	Tyr	Ala	Ala	Leu	Lys	Arg	Ile	Val	Asp	Tyr	Tyr	Pro	Gln
				245					250					255	
Ile	Tyr	Gly	Ile	Ile	Phe	Cys	Arg	Thr	Arg	Lys	Glu	Thr	Gln	Glu	Ile
			260					265					270		
Ala	Asp	Lys	Leu	Met	Gln	Glu	Gly	Tyr	Asn	Ala	Asp	Ser	Leu	His	Gly
			275					280				285			
Glu	Leu	Ser	Gln	Ala	Gln	Arg	Asp	Thr	Val	Met	Gln	Lys	Phe	Arg	Ile
			290				295				300				
Arg	Asn	Ile	Gln	Ile	Leu	Val	Ala	Thr	Asp	Val	Ala	Ala	Arg	Gly	Leu
305					310					315					320
Asp	Val	Asp	Asp	Leu	Thr	His	Val	Ile	Asn	Tyr	Gly	Leu	Pro	Asp	Asp
				325					330					335	
Thr	Glu	Ser	Tyr	Thr	His	Arg	Ser	Gly	Arg	Thr	Gly	Arg	Ala	Gly	Lys
			340					345					350		
Thr	Gly	Thr	Ser	Ile	Ala	Ile	Ile	Asn	Leu	Arg	Glu	Lys	Gly	Lys	Met
			355					360					365		

Arg Glu Ile Glu Arg Ile Ile Gly Lys Lys Phe Ile Ala Gly Glu Met
 370 375 380
 Pro Thr Gly Lys Gln Ile Cys Glu Lys Gln Leu Lys Val Ile Asp
 385 390 395 400
 Asp Leu Glu Lys Val Lys Val Asn Glu Glu Asp Ile Asn Asp Phe Met
 405 410 415
 Pro Glu Ile Tyr Arg Lys Leu Glu Trp Leu Ser Lys Glu Asp Leu Ile
 420 425 430
 Lys Arg Met Val Ser His Glu Phe Asn Arg Phe Val Asp Tyr Tyr Arg
 435 440 445
 Asn Arg Glu Glu Ile Glu Val Pro Thr Asp Ser Arg Arg Ser Ser Pro
 450 455 460
 Arg Gly Xaa Met Pro Thr Leu Phe Ser Xaa Phe Xaa Thr Leu Ser Ile
 465 470 475 480
 Xaa Pro Xaa Pro Leu
 485

<210> 10410
 <211> 144
 <212> PRT
 <213> B.fragilis

<400> 10410
 Gln Arg Gly Pro Phe Tyr Phe Tyr Ser Pro Phe Glu Thr Gly Gly Lys
 1 5 10 15
 Pro Met Lys Arg Leu Val Val Leu Leu Phe Gly Leu Val Gly Ala Ala
 20 25 30
 Leu Phe Met Ser Ala Ala Asn Ser Gly Asp Arg Val Leu Arg Asp Ser
 35 40 45
 Ile Phe His Val Tyr Arg Ser Met Pro Ala Asp Thr Thr Arg Thr Val
 50 55 60
 Phe Ala Lys Glu Ala Ala Met Gly His Val Lys Glu Ser Trp Ala Leu
 65 70 75 80
 Glu Leu Leu Asp Ser Ala Leu Val Phe Ala Arg Glu Ile Lys Asp Val
 85 90 95
 Glu Gly Glu Leu Glu Leu Gln Tyr Gly Ile Phe Arg Tyr Tyr Thr Phe
 100 105 110
 Arg Met Asp Gly Glu Asn Met Glu Lys Thr Cys Ala Thr Leu Arg Glu
 115 120 125
 Ala Cys Tyr Arg Tyr Val Phe Thr Thr Gly Leu Glu Gly Ala Ala Leu
 130 135 140

<210> 10411
 <211> 375
 <212> PRT
 <213> B.fragilis

<400> 10411
 Val Ile Phe Ala Asn Leu Thr Gln Asn Ile Lys Met Lys Gln Leu Ile
 1 5 10 15
 Leu Ser Gly Met Phe Val Val Cys Gly Leu Ser Val Ser Leu Ala Ser
 20 25 30
 Glu Lys Trp Ala Val Asp Ser Ile Asn Trp His Arg Ala Glu Gln Lys
 35 40 45
 Met Gln Glu Lys Asp Phe Gln Asp Ala Ala Leu Thr Tyr Lys Glu Leu
 50 55 60
 Ile Thr Lys Gly Asp Ser Leu Phe Val Asp Tyr Ala Gly Arg His Val
 65 70 75 80
 Glu Asp Met Arg Glu Gln Tyr Ser Ile Asp Glu Leu Asp Leu Gln Asn

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<210> 10412
<211> 124
<212> PRT
<213> B.fragilis
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Pro	Arg	Asn	Lys	Tyr	Ala	Phe	Ile	Val	Val	Asn	Tyr	Ala	Asn	Gly	Asp
1				5					10					15	
Met	Val	Gly	His	Thr	Gly	Ile	Tyr	Glu	Ala	Ile	Glu	Lys	Ala	Val	Val
			20					25					30		
Ala	Val	Asp	Ala	Cys	Val	Lys	Asp	Thr	Ile	Glu	Ala	Ala	Lys	Ala	Gln
		35					40					45			
Gly	Tyr	Glu	Ala	Ile	Ile	Ile	Ala	Asp	His	Gly	Asn	Ala	Asp	His	Ala
	50					55					60				
Leu	Asn	Glu	Asp	Gly	Thr	Pro	Asn	Thr	Ala	His	Ser	Leu	Asn	Pro	Val
65					70					75					80
Pro	Cys	Val	Tyr	Val	Thr	Glu	Asn	Lys	Glu	Ala	Lys	Val	Ala	Asp	Gly
				85					90					95	
Arg	Leu	Ala	Asp	Val	Ala	Pro	Thr	Ile	Leu	His	Ile	Leu	Asp	Met	Val
			100					105					110		
Gln	Pro	Ala	Glu	Met	Thr	Gly	Cys	Asn	Leu	Ile	Lys				

115

120

<210> 10413
 <211> 186
 <212> PRT
 <213> B.fragilis

<400> 10413
 Asn Lys Leu Ser Asn Pro Met His Thr Thr Ile Leu Glu Thr Glu Arg
 1 5 10 15
 Leu Leu Leu Arg Pro Phe Arg Glu Thr Asp Leu Gln Glu Leu Phe Glu
 20 25 30
 Cys Cys Gln Asn Pro Asn Leu Gly Asn Asn Ala Gly Trp Glu Pro His
 35 40 45
 Lys Asn Ile Glu Asp Ser Lys Glu Val Leu His Thr Val Phe Met Gly
 50 55 60
 Asn Glu Gly Val Phe Ala Ile Ile Leu Lys Glu Asp Asn Ser Leu Val
 65 70 75 80
 Gly Ser Ile Gly Ile Ile Thr Asp Pro Lys Arg Glu Asn Thr Arg Thr
 85 90 95
 Arg Met Leu Gly Tyr Trp Leu Lys Glu Cys His Trp Gly Lys Gly Met
 100 105 110
 Ala Ser Glu Ala Thr Arg Thr Ile Leu Asp Tyr Gly Phe Asn Val Leu
 115 120 125
 Gly Leu His Leu Ile Ser Ala Asn Cys Tyr Pro His Asn Thr Arg Ser
 130 135 140
 Arg Leu Leu Leu Glu Arg Asn Gly Phe Val Tyr Glu Gly Ile Leu His
 145 150 155 160
 Glu Ala Glu Met Thr Tyr Asp Gly His Val Tyr Asp His Leu Cys Phe
 165 170 175
 Tyr Gln Lys Lys Gly Arg Val Pro Met Asp
 180 185

<210> 10414
 <211> 65
 <212> PRT
 <213> B.fragilis

<400> 10414
 His Arg Val Pro Gln Ser Glu Leu Asn Leu Leu Ile Thr Asn Asp Ala
 1 5 10 15
 Asp Leu Trp Arg Ile Arg Val Leu Thr His Pro His Leu Val Tyr Ser
 20 25 30
 Leu Tyr Leu Phe Lys Lys Arg Lys Lys Ile His Pro Val Thr Leu Val
 35 40 45
 Thr Asn Tyr Leu Tyr Leu Ile Ser Asp Leu Cys Pro Leu Asn Asn Lys
 50 55 60
 Arg
 65

<210> 10415
 <211> 115
 <212> PRT
 <213> B.fragilis

<400> 10415
 Asn Glu Lys Thr Asn Lys Asn Met Glu Gln Ser Phe Lys Lys Gly Ile
 1 5 10 15
 Val Leu His Leu Ala Ser Leu Val Glu Tyr Ser Glu Gly Gly Ile Ile

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<210> 10416
<211> 404
<212> PRT
<213> B.fragilis
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<400>	10416														
Ser	Asn	Arg	Ala	Thr	Met	Asn	Ser	Lys	Lys	Val	Leu	Phe	Ile	Ile	Phe
1				5					10					15	
Ile	Cys	Thr	Leu	Thr	Val	Thr	Gly	Cys	Asp	Thr	Gln	Glu	Gln	Thr	Thr
			20					25					30		
Ile	Asp	Ser	Gly	Leu	Thr	Leu	Ile	Arg	Ala	Thr	Gln	Thr	Leu	Asp	Ser
			35				40					45			
Leu	Tyr	Ala	Asn	Tyr	Ser	Val	Ser	Gly	Thr	Cys	Leu	Leu	Ile	Glu	Asn
	50					55					60				
Tyr	Pro	Ser	Asn	Val	Gly	Asn	Tyr	Thr	Ala	Thr	Tyr	Leu	Ala	Ser	Glu
65					70					75					80
Glu	Gln	Lys	Glu	Ile	Pro	Asn	Gln	Tyr	Ser	Tyr	Leu	Trp	Pro	Tyr	Ser
				85					90					95	
Gly	Thr	Phe	Ser	Ala	Val	Asn	Ala	Leu	Trp	Ala	Ala	Thr	Gly	Asp	Glu
			100					105					110		
Ser	Tyr	Lys	Thr	Leu	Leu	Asp	Asn	Lys	Val	Leu	Arg	Gly	Leu	Glu	Lys
			115				120					125			
Tyr	Leu	Asp	Ile	Ser	Arg	Ser	Pro	Ala	Gly	Tyr	Ala	Ser	Tyr	Ile	Asn
	130					135					140				
Thr	Ala	Ser	Gln	Ser	Asp	Arg	Phe	Tyr	Asp	Asp	Asn	Ile	Trp	Leu	Gly
145					150					155					160
Ile	Asp	Phe	Thr	Asp	Ala	Tyr	Leu	Asn	Thr	Lys	Glu	Glu	Lys	Tyr	Leu
				165					170					175	
Lys	Lys	Ala	Gln	Leu	Ile	Trp	Glu	Phe	Ile	Glu	Ser	Gly	Ala	Asp	Asp
			180					185					190		
Lys	Leu	Gly	Gly	Gly	Ile	Tyr	Trp	Cys	Glu	Gln	Lys	Lys	Val	Ser	Lys
			195				200					205			
Asn	Thr	Cys	Ser	Asn	Ala	Pro	Ala	Ser	Val	Phe	Ala	Leu	Lys	Met	Phe
	210					215					220				
Lys	Ala	Ile	Arg	Asp	Ser	Ser	Tyr	Leu	Ile	Lys	Gly	Gln	Glu	Leu	Tyr
225					230					235					240
Glu	Trp	Thr	Lys	Lys	Arg	Leu	Gln	Asp	Ser	Thr	Asp	Tyr	Leu	Tyr	Phe
				245					250					255	
Asp	Asn	Ile	Ser	Leu	Asp	Gly	Lys	Ile	Asp	Lys	Ser	Lys	Tyr	Ala	Tyr
			260					265					270		
Asn	Ser	Gly	Gln	Met	Met	Gln	Ala	Ala	Thr	Leu	Leu	Tyr	Gln	Leu	Thr
		275					280					285			
Gly	Cys	Ser	His	Phe	Leu	Lys	Asp	Ala	Gln	Asn	Ile	Ala	Lys	Ala	Cys
	290					295					300				
Tyr	Asn	Tyr	Phe	Phe	Ile	Asn	Phe	Ile	Pro	Glu	Glu	Gly	Glu	Pro	Phe


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305          310          315          320
Lys Leu Leu Lys Lys Gly Asp Val Trp Phe Thr Ala Val Met Leu Arg
          325          330          335
Gly Phe Ile Glu Leu Tyr Gln Thr Asp His Asn Lys Thr Tyr Ile Asn
          340          345          350
Ser Phe Asn Gln Asn Met Asp Tyr Ala Trp Glu His Val Arg Asp Glu
          355          360          365
Lys Gly Leu Phe Asp Ile Asp Phe Ser Gly Arg Thr His Asp Asp Arg
          370          375          380
Lys Trp Leu Leu Thr Gln Ala Ala Met Val Glu Met Tyr Ala Arg Leu
385          390          395          400
Ala Val Thr Lys

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<210> 10417

<211> 310

<212> PRT

<213> B.fragilis

<400> 10417

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Tyr Asp Met Ala Lys Ile Gln Ile Lys Ser Glu Lys Leu Thr Pro Phe
1          5          10          15
Gly Gly Ile Phe Ser Ile Met Glu Lys Phe Asp Ser Met Leu Ser Pro
          20          25          30
Val Ile Asp Ser Thr Leu Gly Gln Arg Cys Ser Ser Ile Phe Gly Tyr
          35          40          45
Gln Phe Ser Glu Ile Val Arg Ser Leu Met Ser Val Tyr Phe Cys Gly
          50          55          60
Gly Ser Cys Val Glu Asp Val Thr Ser Gln Leu Met Arg His Leu Ser
65          70          75          80
Tyr His Pro Thr Leu Arg Thr Cys Ser Ser Asp Thr Ile Leu Arg Ala
          85          90          95
Ile Lys Glu Leu Thr Gln Glu Asn Ile Ser Tyr Thr Ser Asp Gln Gly
          100          105          110
Lys Thr Tyr Asp Phe Asn Thr Ala Asp Lys Leu Asn Thr Leu Leu Ile
          115          120          125
Asn Ala Leu Val Ser Thr Gly Glu Leu Lys Glu Ile Glu Glu Tyr Asp
          130          135          140
Val Asp Phe Asp His Gln Phe Leu Glu Thr Glu Lys Tyr Asp Ala Lys
145          150          155          160
Pro Thr Tyr Lys Lys Phe Leu Gly Tyr Arg Pro Gly Val Tyr Val Ile
          165          170          175
Gly Asp Lys Ile Val Tyr Ile Glu Asn Ser Asp Gly Asn Thr Asn Val
          180          185          190
Arg Phe His Gln Ala Asp Thr His Lys Arg Phe Phe Ala Leu Leu Glu
          195          200          205
Ser Gln Asn Ile Arg Val Asn Arg Phe Arg Ala Asp Cys Gly Ser Cys
          210          215          220
Ser Ile Glu Ile Val Ser Glu Ile Glu Lys His Cys Lys His Phe Tyr
225          230          235          240
Ile Arg Ala Asn Arg Cys Ser Ser Leu Tyr Asn Asp Ile Phe Ala Leu
          245          250          255
Arg Gly Trp Lys Thr Glu Glu Ile Asn Gly Ile Gln Phe Asp Leu Ile
          260          265          270
Pro Phe Leu Arg Asn Gly Lys Ala Ser Ala Ile Val Leu Ser Ser
          275          280          285
Arg Asp Lys Asp Ala Thr Val Ala Thr Leu Thr Cys Gly Lys Ala Asn
290          295          300
Thr Leu Thr Asp Ala Phe

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305

310

<210> 10418
 <211> 229
 <212> PRT
 <213> B.fragilis

<400> 10418
 Asn Tyr Ser Tyr His Pro Asn Arg Glu Ser Ser Tyr Phe Phe Cys Leu
 1 5 10 15
 Tyr Asn Gln Glu Ile Asn Tyr Lys Thr Lys Asn Arg Lys His Met Gln
 20 25 30
 Lys Val Leu Phe Ile Thr Thr Ile Leu Leu Thr Leu Phe Ala Leu Ser
 35 40 45
 Ile Arg Ala Glu His Asn Pro Arg Lys Arg Pro Asp Val Ser Ala Gln
 50 55 60
 Phe Gln Thr Val Ser Gly His Ser Ile Ser Leu Asn Gly Ile Gly Leu
 65 70 75 80
 Ala Tyr Ser Tyr Glu Tyr Ala Phe Thr Pro Lys Gly Thr Ile Ile Phe
 85 90 95
 Ser Ala Gly Ser Ser Tyr Ala Phe Gly Arg Ile Leu Gln Leu Lys Met
 100 105 110
 Glu Ser Leu Arg Glu Phe His Ile Asp Thr Lys Asp Tyr His Leu Val
 115 120 125
 Thr Gly Asp Leu Ala Ile Glu Pro Arg Phe Tyr Tyr Asn Leu Lys Lys
 130 135 140
 Arg His Arg Asn Gly Lys Arg Thr Trp Gly Asn Ser Gly Gly Tyr Leu
 145 150 155 160
 Ser Val Asn Phe Gly Tyr Ser Phe Pro Ile Thr Ile Thr Ser Gly Val
 165 170 175
 Lys Ala Ala His Ile Tyr Val Ile Thr Pro Tyr Trp Gly Phe Arg Arg
 180 185 190
 Val Trp Lys His Phe Leu Phe Asp Leu Ser Gly Gly Val Gly Tyr Ile
 195 200 205
 Gly Ser Ser Asn Arg Thr Ser Ala Val Tyr Pro Gly Leu Arg Ile Gly
 210 215 220
 Leu Gly Tyr Arg Phe
 225

<210> 10419
 <211> 429
 <212> PRT
 <213> B.fragilis

<400> 10419
 Ala Met Asn Tyr Thr Tyr Arg Gln Ile Trp Leu Ile Asn Tyr Pro Val
 1 5 10 15
 Met Leu Ser Ile Leu Met Glu Gln Leu Ile Asn Ile Thr Asp Ala Val
 20 25 30
 Phe Leu Gly His Val Gly Glu Val Glu Leu Gly Ala Ser Ala Leu Gly
 35 40 45
 Ser Ile Tyr Tyr Leu Ala Ile Tyr Met Leu Gly Phe Gly Phe Ser Leu
 50 55 60
 Gly Val Gln Val Met Val Gly Gln Tyr Asn Gly Lys Gly His Tyr Thr
 65 70 75 80
 Gly Thr Gly Gly Thr Phe Phe Gln Gly Leu Val Phe Leu Cys Val Leu
 85 90 95
 Ala Ile Leu Leu Ser Leu Ser Ser Tyr Phe Phe Ser Pro Phe Leu Leu
 100 105 110

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Arg Tyr Phe Val His Ser Ser Glu Ile Tyr Cys Ala Val Ile Asp Tyr
115 120 125
Leu Asp Trp Arg Cys Phe Gly Leu Leu Phe Ser Phe Pro Phe Leu Ala
130 135 140
Phe Arg Ser Phe Tyr Ile Gly Ile Val Arg Thr Asn Ala Leu Ser Trp
145 150 155 160
Ala Ala Leu Ala Ala Val Leu Ile Asn Ile Pro Cys Asn Tyr Trp Phe
165 170 175
Val Phe Val Leu Asp Arg Gly Ile Ala Gly Ala Ala Ile Ala Ser Ser
180 185 190
Leu Ser Glu Ala Ala Ser Leu Leu Ile Ile Val Val Tyr Thr Trp Leu
195 200 205
Lys Ile Asp Arg Thr Asp Phe Gly Leu Lys Phe Ile Phe Asp Lys Cys
210 215 220
Leu Leu Val Glu Leu Trp His Leu Ser Val Trp Ser Ile Leu His Ala
225 230 235 240
Phe Ile Ser Val Val Pro Trp Phe Leu Phe Phe Val Val Ile Glu Arg
245 250 255
Leu Gly Glu Ala Gln Leu Ala Val Ser Asn Ile Ile Arg Ser Val Ser
260 265 270
Thr Ile Phe Phe Val Ile Val Asn Ser Phe Ala Ala Thr Thr Gly Ala
275 280 285
Leu Val Ser Asn Leu Ile Gly Ala Gly Glu Arg Gln Tyr Leu Phe Pro
290 295 300
Leu Cys Arg Lys Ile Leu Lys Leu Gly Tyr Ala Ile Gly Leu Pro Leu
305 310 315 320
Val Val Leu Ala Met Val Phe Arg Arg Gln Ile Thr Gly Phe Tyr Thr
325 330 335
Asp Ser Ser Gln Leu Ile Asn Ile Ser Ser Ile Pro Phe Ala Val Met
340 345 350
Leu Leu Asn Tyr Val Phe Ala Leu Pro Gly Tyr Val Tyr Ile Asn Ala
355 360 365
Val Thr Gly Thr Gly Lys Thr Arg Ile Ala Phe Trp Phe Gln Leu Ile
370 375 380
Thr Ile Val Ile Tyr Leu Phe Tyr Leu Tyr Leu Leu Ser His Tyr Thr
385 390 395 400
Ala Ser Leu Ala Val Tyr Leu Thr Ala Glu Tyr Leu Phe Val Ile Leu
405 410 415
Leu Ala Val Gln Ser Val Leu Tyr Leu Arg Ile Ser Ser
420 425

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<210> 10420

<211> 83

<212> PRT

<213> B.fragilis

<400> 10420

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Val Pro Glu Gln Gln Lys Val Ala Gln Asp Phe Ala Met Ser Glu Phe
1 5 10 15
Ser Leu Ile Leu Val Leu Gln Lys Glu Asn Lys Gln Asn Ser Asn Met
20 25 30
Thr Trp Gln Lys Tyr Lys Leu Asn Leu Arg Asn Ser His Leu Leu Glu
35 40 45
Glu Phe Phe Gln Ser Trp Arg Asn Leu Thr Pro Cys Phe His Pro Leu
50 55 60
Ser Thr Gln His Trp Val Arg Asp Ala Ala Val Ser Ser Asp Ile Ser
65 70 75 80
Ser Ala Arg

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<210> 10421
 <211> 84
 <212> PRT
 <213> B.fragilis

<400> 10421
 Phe Ala Tyr Lys Glu Ser Ser Val Cys Val Ala Arg Ile Arg Val Lys
 1 5 10 15
 Pro Leu Ser Ile Val Val Cys Ser Cys Val Ser His Pro Val Thr Val
 20 25 30
 Asn Val Gln Met Lys Met Met Lys Ser Thr Phe Phe Glu Phe Ile Val
 35 40 45
 Ala Leu Leu Asp Tyr Tyr Cys Val Ser Leu Leu Ser Phe Lys Glu Asp
 50 55 60
 Ile Phe Lys Ile Ser Ser Phe Pro Leu Phe Ile Lys Pro Leu Ser Pro
 65 70 75 80
 Asn Gln Phe Leu

<210> 10422
 <211> 231
 <212> PRT
 <213> B.fragilis

<400> 10422
 Lys Tyr Lys Lys Met Lys Lys Leu Ile Tyr Thr Leu Cys Leu Phe Thr
 1 5 10 15
 Gly Met Ala Ile Ser Ser Cys Glu Asp Trp Leu Ala Arg Asp Pro Leu
 20 25 30
 Asp Gln Ile Ala Asp Val Asn Leu Thr Tyr Thr Ala Asp Glu Cys Lys
 35 40 45
 Leu Tyr Val Asn Gln Phe Tyr Thr Ser Phe Trp Gly Ser Pro Asn Asn
 50 55 60
 Tyr Ile Tyr His Ile Asp Arg Gly Ser Asp Asn Leu Leu Ser Asp Asn
 65 70 75 80
 Tyr Gln Asp Asn Lys Asp Leu Ile Glu Gly Leu His Gln Val Pro Ser
 85 90 95
 Ser Gly Glu Gly Trp Gly Thr Thr Glu Trp Gly Lys Ile Arg Ser Val
 100 105 110
 Asn Phe Leu Leu Asp Asn Cys Asp Lys Ser Pro Glu Pro Glu Lys Ala
 115 120 125
 Arg Lys Tyr Ile Gly Glu Ala Tyr Phe Phe Arg Ala Met Leu Tyr Tyr
 130 135 140
 Glu Gln Phe Leu Arg Lys Phe Gly Gly Ala Pro Trp Ile Asp Lys Thr
 145 150 155 160
 Leu Asp Leu Glu Ser Gly Glu Leu Tyr Gly Pro Arg Leu Lys Arg His
 165 170 175
 Glu Leu Ala Asp Lys Ile Leu Asn Asp Met Asp Asp Ala Ile Asp Arg
 180 185 190
 Leu Pro Thr Tyr Ser Gln Gln Glu Thr Gly Arg Val Ser Lys Glu Ala
 195 200 205
 Ala Met Leu Tyr Lys Ala Arg Ile Ala Leu Leu Ser Ser Pro Arg Gly
 210 215 220
 Trp Lys Glu Gln Arg Ile Ser
 225 230

<210> 10423
 <211> 630

<212> PRT

<213> B.fragilis

<400> 10423

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Ile Met Lys Asn Lys Ser Ile Ala Ser Phe Met Ile Lys Ile Val Met
1      5      10      15
Met Pro Leu Leu Phe Thr Ile Ser Cys Val Asn Glu Ile Ser Glu Asp
      20      25      30
Pro Val Asp Ile Pro Gly Glu Ile Pro Ile Arg Leu Ser Thr Gln Ile
      35      40      45
Leu Cys Asn His Thr Arg Ala Ile Asn Asn Glu Phe Gln Glu Lys Asp
      50      55      60
Ala Ile Gly Leu Tyr Val Leu Thr Gln Leu Ser Thr Ile Asn Gln Lys
65      70      75      80
Arg Tyr Ile Asp Asn Met Arg Phe Thr Cys Ser Gln Ala Thr Gly Phe
      85      90      95
Glu Pro Glu Glu Thr Ile Tyr Tyr Pro Lys Gly Asp Gly Lys Cys Asp
      100     105     110
Phe Ile Ser Tyr Tyr Pro Phe Gln Glu Thr Gly Ile Asn Gln Asp Gln
      115     120     125
Ser Ile Met Gln Val Gln Ile His Thr Asp Gln Ser Ser Val Ser Lys
130     135     140
His Ser Leu Ser Asp Phe Met Ile Ala Thr Asn Ser Asp Ile Thr Pro
145     150     155     160
Ser Gln Asn Met Val Ser Met Glu Tyr Lys His Lys Leu Cys Lys Leu
      165     170     175
Lys Ile Thr Ile Lys Pro Ala Pro Gly Glu Asp Ile Asp Glu Leu Leu
      180     185     190
Asn Asp Asn Pro Ser Leu Ser Leu Asn Gly Phe His Ser Asp Ala Ser
      195     200     205
Tyr Asp Phe Leu Thr Asp Arg Phe Glu Pro Ser Gly Gln Thr Ile Ser
210     215     220
Val Thr Pro His Gly Glu Trp Lys Ile Glu Asn Asn Ala Leu Thr Gly
225     230     235     240
Lys Glu Val Ile Leu Ile Pro Glu Lys Ile Glu Ser Asp Asn His Tyr
      245     250     255
Ile Asn Ile Asp Ile Asn Gly Lys Ser Tyr Ser Cys Pro Phe Pro Asp
      260     265     270
Asn Phe Gln Leu Ala Ser Glu Lys Asn Cys Ser Ile Ala Ile Ile Tyr
      275     280     285
Lys Ser Ser Glu Gly Ile Gln Ile Asn Asn Phe Asp His Ser Ile Thr
      290     295     300
Asp Trp Thr Glu Gly Asp Ser Gly Glu Thr Thr Ala Gln Glu Thr Ser
305     310     315     320
Gly Val Ile His Leu Ser Ala Leu Lys Phe Ser Lys Ser Asn Val Tyr
      325     330     335
Lys Ala Ile Asn Glu Gly Thr Gln Val Ala Glu Ile Cys Lys Glu Tyr
      340     345     350
Leu Leu Ala Asp Asn Ile Asp Ala Gln Ala Ile Val Val Tyr Pro Val
      355     360     365
Leu Asn Gly Ala Thr Asp Leu Asn Asn Gly Thr Val Ile Cys Leu Leu
      370     375     380
Asp Glu Pro Ala Ser Ile His Gly Gly Lys Val Ser Trp Asn Lys Val
385     390     395     400
Asn Asn Ala Leu Asp Tyr Thr Pro Gly Asn Gln Ser Ile Ile Ser Asp
      405     410     415
Phe Tyr Ile Thr Gln Asp Asn Ser Ile Ser Ile Ser Lys Pro Glu Asn
      420     425     430
Pro Leu Pro Val Arg Leu Gln Glu Glu Val Leu Thr Asp Ile Arg Asn

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435 440 445
 Thr Glu Thr Gln Thr Tyr Pro Ile Val Lys Ile Gly Ile Gln Tyr Trp
 450 455 460
 Met Gly Arg Ser Leu Glu Ala Thr His Tyr Thr Asp Gly Lys Ala Ile
 465 470 475 480
 Thr Leu Lys Lys Asp Phe Thr Thr Thr Ala Gly Tyr Tyr Thr Gly Lys
 485 490 495
 Phe Lys Asp Ala Pro Gln Asp Phe Tyr Phe Tyr Asn Ser Glu Ala Val
 500 505 510
 Ile Ser Gly Lys Leu Ser Pro Gln Gly Trp Ser Ile Pro Thr Glu Thr
 515 520 525
 Glu Trp Glu Leu Leu Lys Gln Tyr Ile Asn Asn Asp Ala Ser Lys Leu
 530 535 540
 Lys Phe Gly Pro Trp Ser Ser Asp Glu Asn Gly Asp Lys Leu Pro Ile
 545 550 555 560
 Leu Asn Ile Thr Gly Phe Asn Gly Val Pro Glu Gly Tyr Ile Leu Lys
 565 570 575
 Ser Lys Asn Gly Tyr Thr Asn Gly Leu Tyr Thr Val Val Tyr Trp Ser
 580 585 590
 Thr Asn Ser Ser Gly Asn Gln Thr Asn Arg Ala Ile Tyr Leu Leu His
 595 600 605
 Thr Thr Asn Glu Ile Lys Asp Gly Asn Ile Thr Asp Arg Ala Leu Ser
 610 615 620
 Val Arg Cys Ile Arg Lys
 625 630

<210> 10424

<211> 277

<212> PRT

<213> B.fragilis

<400> 10424

Gln Ile Leu Lys Gln Thr Val Tyr Val Ser Ile Asn Pro Gln Asn His
 1 5 10 15
 Pro Ile Met Asn Arg Phe Glu Asn Lys Ile Ile Ile Ile Thr Gly Ala
 20 25 30
 Ala Gly Gly Ile Gly Ala Ser Thr Arg Arg Ile Val Ser Glu Gly
 35 40 45
 Gly Lys Val Ile Ile Ala Asp Tyr Ser Arg Glu Lys Ala Asp Gln Phe
 50 55 60
 Ala Ala Glu Leu Ser Asn Ser Gly Ala Asp Val Arg Pro Val Tyr Phe
 65 70 75 80
 Ser Ala Thr Glu Leu Lys Ser Cys Lys Glu Leu Ile Thr Phe Thr Met
 85 90 95
 Lys Glu Tyr Gly Gln Ile Asp Val Leu Val Asn Asn Val Gly Gly Thr
 100 105 110
 Asn Pro Arg Arg Asp Thr Asn Ile Glu Thr Leu Asp Met Asp Tyr Phe
 115 120 125
 Asp Glu Ala Phe His Leu Asn Leu Ser Cys Thr Met Tyr Leu Ser Gln
 130 135 140
 Leu Val Ile Pro Ile Met Ser Ala Gln Gly Gly Gly Asn Ile Val Asn
 145 150 155 160
 Val Ala Ser Ile Ser Gly Ile Thr Ala Asp Ser Asn Gly Thr Leu Tyr
 165 170 175
 Gly Ala Ser Lys Ala Gly Val Ile Asn Leu Thr Lys Tyr Ile Ala Thr
 180 185 190
 Gln Thr Gly Lys Lys Asn Ile Arg Cys Asn Ala Val Ala Pro Gly Leu
 195 200 205
 Ile Leu Thr Pro Ala Ala Leu Asn Asn Leu Asn Glu Glu Val Arg Lys

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      210              215              220
Ile Phe Leu Gly Gln Cys Ala Thr Pro Tyr Leu Gly Glu Pro Gln Asp
225              230              235              240
Val Ala Ala Thr Ile Ala Phe Leu Ala Ser Glu Asp Ala Arg Tyr Ile
      245              250              255
Thr Gly Gln Thr Ile Val Val Asp Gly Gly Leu Thr Ile His Asn Pro
      260              265              270
Thr Ile Asn Leu Val
      275

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<210> 10425
 <211> 71
 <212> PRT
 <213> B.fragilis

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<400> 10425
Asn Lys Thr Lys Gln Ala Phe Ser Ile Pro Leu Tyr Asn Lys Cys Asn
1              5              10              15
Arg Thr Ile Ala Lys Val Thr Tyr Thr Ile Glu Lys Tyr Asn Ile His
      20              25              30
Ser Asn Ile Leu Asn Asp Gly Ser Leu Glu Cys Thr Gly Gln His Ile
      35              40              45
Ile Ile Ser Val Ala Val Phe Ser Phe Phe Pro Tyr Phe Leu His Leu
      50              55              60
Phe Tyr Lys Cys Phe His Leu
      65              70

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<210> 10426
 <211> 320
 <212> PRT
 <213> B.fragilis

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<400> 10426
Phe Ile Asp Asp Phe Glu Ser Lys Met Ile Phe Ile Leu Leu Leu Val
1              5              10              15
Gln Tyr Gln Arg Ser Ile Ser Leu Phe Tyr Leu Leu Ile Ile Lys Gly
      20              25              30
Asn Ile Met Lys Lys Asn Leu Leu Val Gly Ala Leu Val Ser Ala
      35              40              45
Phe Leu Leu Ala Ser Cys Ser Gly Gly Asp Lys Ser Lys Ala Pro Val
      50              55              60
Val Ser Thr Ala Asp Ile Glu Asn Ala Ala Glu Val Ile Lys Tyr Tyr
      65              70              75              80
Asn Thr Ser Leu Gly Val Leu Lys Asp Met Val Lys Glu Lys Asp Val
      85              90              95
Asn Ala Val Leu Asp Tyr Met Glu Gln Lys Gly Lys Ala Pro Ala Leu
      100              105              110
Ser Ala Ile Val Pro Pro Ala Val Val Ser Lys Asp Ser Ala Ile Val
      115              120              125
Leu Asn Pro Gly Asn Cys Phe Asn Glu Glu Thr Arg Gln Asn Leu Lys
      130              135              140
Gln Asn Tyr Thr Gly Leu Phe Gln Ala Arg Thr Glu Phe Tyr Ala Asn
      145              150              155              160
Phe Asp Thr Tyr Leu Ser Tyr Leu Lys Lys Asp Val Thr Asn Ala
      165              170              175
Lys Lys Leu Leu Asp Val Asn Tyr Gln Leu Ser Thr Gln Met Ser Glu
      180              185              190
Tyr Lys Gln Asn Ile Phe Asp Ile Leu Ser Pro Phe Thr Glu Gln Ala
      195              200              205

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Glu Leu Val Leu Leu Val Asp Asn Pro Leu Lys Ala Gln Ile Met Ser
 210 215 220
 Val Arg Lys Met Ser Ser Thr Met Gln Ser Ile Leu Asn Leu Tyr Ala
 225 230 235 240
 Arg Lys His Arg Met Asp Gly Pro Arg Ile Asp Leu Lys Val Ala Glu
 245 250 255
 Leu Thr Gln Gln Leu Asp Ala Ala Lys Lys Leu Pro Val Val Asn Gly
 260 265 270
 His Glu Gly Glu Met Lys Ser Tyr Gln Ala Phe Leu Ser Gln Val Glu
 275 280 285
 Thr Phe Ile Lys Gln Val Lys Lys Val Arg Glu Lys Gly Glu Tyr Ser
 290 295 300
 Asp Ala Asp Tyr Asp Met Leu Thr Ser Ala Phe Glu Thr Ser Ile Ile
 305 310 315 320

<210> 10427

<211> 90

<212> PRT

<213> B.fragilis

<400> 10427

Lys Arg Ala Glu Gly Phe Gly Leu Lys Ser Leu Leu Leu Thr Pro Leu
 1 5 10 15
 Gln Pro Pro Val Lys Thr Phe Ser Tyr Met Leu Phe Val Leu Ile Tyr
 20 25 30
 Phe Pro Cys Ile Ala Thr Leu Val Ala Ile Lys Gln Glu Ser Gly Ser
 35 40 45
 Trp Lys Trp Ala Ile Phe Thr Ala Gly Tyr Thr Thr Ala Leu Ala Trp
 50 55 60
 Leu Val Ser Phe Ala Val Tyr Gln Ile Gly Gly Met Phe Ser Pro Ile
 65 70 75 80
 Ala Trp Met Ser Asn Leu Leu Met Met Val
 85 90

<210> 10428

<211> 156

<212> PRT

<213> B.fragilis

<400> 10428

Arg Asn Met Asp Lys Val Ile Ile Asn Ser Tyr Glu Asp Phe Glu Lys
 1 5 10 15
 Leu Ile Gly Gln Gln Ile Gly Val Ser Asp Tyr Leu Glu Val Ser Gln
 20 25 30
 Glu Arg Ile Asn Leu Phe Ala Asp Ala Thr Leu Asp His Gln Trp Ile
 35 40 45
 His Val Asp Thr Glu Arg Ala Lys Val Glu Ser Pro Tyr His Ser Thr
 50 55 60
 Ile Val His Gly Tyr Leu Thr Leu Ser Leu Leu Pro His Leu Trp Asn
 65 70 75 80
 Gln Ile Ile Glu Val Asn Asn Leu Lys Met Met Ile Asn Tyr Gly Met
 85 90 95
 Asp Lys Met Lys Phe Gly Gln Ala Val Leu Ser Gly Gln Ser Val Arg
 100 105 110
 Leu Lys Ala Ser Leu His Ser Leu Thr Asn Leu Arg Gly Val Ala Lys
 115 120 125
 Ala Glu Ile Lys Phe Ala Ile Glu Ile Lys Asp Gln Pro Lys Lys Ala
 130 135 140
 Leu Glu Gly Ile Ala Ile Phe Leu Tyr Tyr Phe Asn

145

150

155

<210> 10429
 <211> 286
 <212> PRT
 <213> B.fragilis

<400> 10429
 Ile Met Glu Gly Lys Lys Thr Thr Gln Glu Glu Tyr Gln Lys Cys Val
 1 5 10 15
 Asn Ala Val Val Asp Tyr Ile Asn Leu His Leu Gly Glu Glu Ile Asp
 20 25 30
 Leu Lys Ser Leu Ala Arg Ile Ser His Phe Ser Pro Phe Tyr Phe His
 35 40 45
 Arg Ile Met Lys Ala Phe Leu Gly Glu Pro Ile Gly Thr Phe Ile Val
 50 55 60
 Arg Thr Arg Thr Glu Ala Ala Ala Arg Leu Leu Arg Tyr Ser Ser Thr
 65 70 75 80
 Ser Ile Ser Asp Ile Ala Tyr Arg Ile Gly Tyr Ala Ser Pro Ser Ser
 85 90 95
 Phe Ser Lys Ile Phe Lys Gln Met Tyr Gly Ile Ser Pro Thr Glu Tyr
 100 105 110
 Arg Asn Asn Lys Asn Tyr Val Ile Met Lys Pro Ala Ile Ile Lys Pro
 115 120 125
 Asp Leu Glu Leu Lys Lys Glu Ile Arg Glu Leu Pro Gln Arg Asn Val
 130 135 140
 Ile Tyr Ile Arg Leu Phe Gly Asp Tyr Lys Leu Asn Asp Tyr Ala Gly
 145 150 155 160
 Thr Trp Met His Leu Ile Gln Phe Val Lys Glu Gln Asn Leu Pro Met
 165 170 175
 Gly Asp Pro Ser Pro Leu Cys Ile Tyr His Asp Asp Pro Lys Val Thr
 180 185 190
 Pro Thr Asp Lys Leu Arg Thr Asp Val Cys Met Leu Leu Pro Ser Asn
 195 200 205
 Ala Arg Pro Lys Gly Asn Val Gly Phe Lys Gln Leu Pro Ala Gly Arg
 210 215 220
 Tyr Ala Thr Phe Leu Tyr Lys Gly Ser Tyr Asp Gln Leu Gln Ala Val
 225 230 235 240
 Tyr Asp Thr Ile Tyr Gly Lys Tyr Leu Pro Glu Met Glu Cys Thr Leu
 245 250 255
 Ser Asp Glu Pro Ser Ala Glu Arg Tyr Leu Asn Asp Pro Ser Cys Thr
 260 265 270
 Pro Pro Glu Glu Leu Leu Thr Glu Ile Tyr Ile Pro Ile Arg
 275 280 285

<210> 10430
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 10430
 Asn Ile Arg Met Asn Val Ile Leu Phe Asp Gly Ile Cys Asn Leu Cys
 1 5 10 15
 Asn Gly Ala Val Thr Phe Val Val Lys Arg Asp Arg Lys Gly Leu Phe
 20 25 30
 Arg Phe Val Ser Leu Gln Ser Glu Thr Gly Lys Ser Leu Leu Lys Arg
 35 40 45
 Tyr Ala Val Glu Ser Thr Asn Lys Thr Leu Tyr Tyr Phe Arg Asn Asn
 50 55 60

Arg Cys Tyr Ser Lys Ser Thr Ala Ile Leu Tyr Ile Leu Lys Asp Leu
 65 70 75 80
 Gly Gly Phe Trp Gln Cys Leu Tyr Pro Leu Ile Leu Ile Pro Ala Lys
 85 90 95
 Leu Arg Asp Ala Ile Tyr Leu Leu Val Ser Lys Tyr Arg Tyr Arg Ile
 100 105 110
 Phe Gly Lys Ala Asp Ser Cys Ile Lys Pro Phe Gly Phe Ser Ser Glu
 115 120 125
 Glu Ser Lys Arg Ser Asp
 130

<210> 10431
 <211> 245
 <212> PRT
 <213> B.fragilis

<400> 10431
 Lys Asn Asn Val Leu Gly Lys Phe Ile Leu Asp Phe Phe Asn Ile Phe
 1 5 10 15
 Val Glu Ile Lys Ser Tyr Leu Asn Thr Met Asn Val Lys Ile Glu Ser
 20 25 30
 Ser Trp Gln Gln Arg Leu Gln Glu Phe Asp Lys Pro Tyr Phe Glu
 35 40 45
 Lys Leu Val Asn Phe Val Lys Asn Glu Tyr Gly Lys Ala His Ile Leu
 50 55 60
 Pro Pro Gly His Gln Ile Phe His Val Phe Asn Ser Cys Pro Phe Gln
 65 70 75 80
 Asn Val Lys Val Val Ile Leu Gly Gln Asp Pro Tyr Pro Asn Pro Gly
 85 90 95
 Gln Tyr Tyr Gly Ile Cys Phe Ser Val Pro Asp Gly Val Ala Ile Pro
 100 105 110
 Gly Ser Leu Ser Asn Ile Phe Lys Glu Ile His Gln Asp Leu Gly Lys
 115 120 125
 Pro Leu Pro Asn Ser Gly Asn Leu Asp Arg Trp Val Lys Gln Gly Val
 130 135 140
 Phe Pro Met Asn Ser Val Leu Thr Val Arg Ala His Glu Thr Gly Ser
 145 150 155 160
 His Arg Asn Ile Gly Trp Glu Thr Phe Thr Asp Ala Val Ile Lys Lys
 165 170 175
 Leu Ser Glu Glu Arg Glu Asn Leu Val Phe Met Leu Trp Gly Ser Tyr
 180 185 190
 Ala Lys Glu Lys Ala Ser Leu Ile Asp Thr Asp Lys His Leu Ile Leu
 195 200 205
 Thr Ala Val His Pro Ser Pro Arg Ser Ala Asp Tyr Gly Phe Phe Gly
 210 215 220
 Cys Lys His Phe Ser Lys Ala Asn Thr Phe Leu Arg Ser Arg Gly Ile
 225 230 235 240
 Glu Glu Ile Asp Trp
 245

<210> 10432
 <211> 1062
 <212> PRT
 <213> B.fragilis

<400> 10432
 Lys Ile Asn Val Phe Leu Ile Lys Val Ser Ile Met Lys Ile Lys Lys
 1 5 10 15
 His Ile Leu Ile Pro Leu Met Val Leu Leu Leu Phe Gly Ser Met Asp

		20						25				30																	
Ala Met 35	Ala Ile Glu Gln Ala Ile Gln Val Lys Gly Lys Val Val 40 45	Ile Glu Pro Val Ile Gly Ala Asn Val Val Val Lys Val 50 55 60	Gly Glu Thr Ser Ile Asp Gly Ser Phe Ala Ile Asp 70 75 80	Val Thr Ser Ile Val Ser Phe Ile Gly Tyr Leu Ser 85 90 95	Thr Gly Asn Phe Leu Asn Ile Thr Leu Glu Asn 100 105 110	Lys Thr Glu Leu Leu Asp Glu Val Val Val Gly Tyr Gly Val Gln 115 120 125	Lys Lys Ala Asn Leu Thr Gly Ala Ile Ala Thr Val Gly Ala Lys Glu 130 135 140	Leu Glu Asp Arg Pro Val Thr Asn Ala Ala Ala Leu Gln Gly Lys 145 150 155 160	Val Ala Asn Leu Asn Ile Ser Asn Gly Asp Gly Gly Pro Gly Lys Lys 165 170 175	Ala Ser Phe Asn Ile Arg Gly Tyr Ala Gly Leu Asp Ala Thr Tyr Ser 180 185 190	Pro Leu Val Ile Ile Asp Gly Val Thr Gly Tyr Phe Asp Asp Leu Asn 195 200 205	Pro Asn Asp Ile Glu Thr Leu Thr Val Leu Lys Asp Ala Ala Ala Ser 210 215 220	Ala Ile Tyr Gly Ala Gln Ala Ala Tyr Gly Val Ile Leu Val Thr Thr 225 230 235 240	Lys Ser Gly Lys Lys Asn Glu Lys Thr Val Ile Asn Tyr Asn Asn Asn 245 250 255	Phe Ser Phe Asn Ser Pro Thr Val Leu Pro Lys Thr Pro Gly Ser Leu 260 265 270	Glu Phe Ser Arg Leu Phe Arg Glu Ala Asp Ile Asn Gly Gly Gly Ser 275 280 285	Gly Ile Ile Asp Leu Glu Thr Met Glu Arg Ile Glu Lys Tyr Tyr Tyr 290 295 300	Asp Pro Thr Ser Ile Pro Asn Asn Val Pro Gln Arg Asp Asn Pro Asp 305 310 315 320	Arg Trp Ala Asp Trp Gly Asp Gly Arg Ser Asn Ala Asn Glu Asp Trp 325 330 335	Gln Lys Ala Met Phe Lys Asn Asn Gln Leu Asn Gln Gln His Asn Ile 340 345 350	Ser Ile Arg Gly Gly Ser Asp Lys Thr Thr Tyr Val Met Ser Leu Gly 355 360 365	Tyr Leu Lys Asp Glu Gly Lys Leu Arg Tyr Tyr Asp Asp His Tyr Gln 370 375 380	Arg Tyr Asn Ala Leu Ala Lys Ile Thr Thr Asp Val Thr Lys Trp Leu 385 390 395 400	Thr Val Gly Leu Asn Val Arg Tyr Ser His Glu Lys Ser Val Ser Pro 405 410 415	Ala Tyr Gly Met Asn Pro Gly Gly Ser Val Asn Asp Met Ile Gly Trp 420 425 430	Thr Gln Val Val Trp Pro Thr Ile Pro Val Arg Asp Pro Asn Gly His 435 440 445	Phe Ser Pro Ala Gly Arg Met Val Phe Ile Ala Asp Ala Asn Pro Gln 450 455 460	Thr Ser Tyr Thr Asp Asn Phe Trp Gly Thr Ala Asn Val Val Ile Lys 465 470 475 480	Pro Leu Lys Gly Trp Thr Ile Asn Ala Asp Phe Thr Tyr Asn Lys Trp 485 490 495

Met	Asn	Lys	Arg	Ser	Tyr	Ser	Lys	Gly	Leu	Ile	Tyr	Ser	Tyr	Ser	Val
		500						505					510		
Ser	Asn	Glu	Pro	Tyr	Leu	Glu	Gly	Gly	Phe	Gly	Thr	Glu	Asp	Thr	Arg
		515					520					525			
Val	Trp	Gln	Glu	Ser	Asn	Asn	Asp	Asp	Phe	Thr	Ser	Met	Asn	Ala	Tyr
	530					535					540				
Thr	Thr	Tyr	Glu	Lys	Glu	Phe	Lys	Gly	His	Asn	Phe	Lys	Ile	Met	Ala
545					550					555					560
Gly	Met	Gln	Ser	Glu	Tyr	Lys	Lys	Asn	Phe	Gly	Leu	Tyr	Ala	Asn	Lys
			565						570					575	
Met	Gly	Met	Val	Leu	Pro	Gly	Gln	Pro	Ser	Ile	Ser	Thr	Ser	Thr	Gly
			580					585					590		
Lys	Ile	Glu	Ala	Trp	Asp	Ser	Leu	Asp	His	Tyr	Ala	Thr	Leu	Gly	Phe
		595					600					605			
Phe	Gly	Arg	Phe	Asn	Tyr	Asp	Tyr	Lys	Ser	Arg	Tyr	Leu	Phe	Glu	Phe
	610					615					620				
Asp	Leu	Arg	Arg	Asp	Gly	Ser	Ser	Arg	Tyr	Ala	Lys	Gly	His	Gln	Trp
625					630					635					640
Gly	Thr	Phe	Pro	Ala	Phe	Ser	Ala	Gly	Trp	Asn	Val	Ala	Lys	Glu	Ala
			645						650					655	
Phe	Phe	Glu	Pro	Tyr	Thr	Ser	Ile	Leu	Ser	Glu	Leu	Arg	Leu	Arg	Gly
		660						665					670		
Ser	Trp	Gly	Glu	Leu	Gly	Asn	Met	Arg	Gly	Lys	Asn	Tyr	Gln	Tyr	Ile
		675					680					685			
Ser	Thr	Val	Pro	Tyr	Asn	Ala	Thr	Thr	Asp	Tyr	Ile	Met	Gly	Asp	Lys
	690					695					700				
Arg	Ile	Ser	Ala	Phe	Gly	Ala	Pro	Asn	Met	Ile	Ala	Tyr	Asn	Thr	Trp
705					710					715					720
Glu	Lys	Asn	Arg	Thr	Leu	Asp	Phe	Gly	Val	Asp	Ile	Ala	Ala	Leu	Asn
			725						730					735	
Asn	Arg	Leu	Thr	Met	Ser	Phe	Asp	Trp	Tyr	Arg	Arg	Asp	Ile	Ile	Gly
		740						745					750		
Leu	Ile	Thr	Lys	Gly	Val	Thr	Leu	Pro	Ala	Val	Leu	Gly	Val	Asn	Ser
		755					760					765			
Pro	Asp	Thr	Asn	Asn	Ala	Asp	Ile	Arg	Asn	Glu	Gly	Trp	Glu	Leu	Thr
	770					775					780				
Leu	Gly	Trp	Arg	Asp	Gln	Phe	Ser	Leu	Ala	Ser	Lys	Ser	Phe	Asn	Tyr
785					790					795					800
Ser	Val	Ser	Phe	Asn	Leu	Ser	Asp	Tyr	Gln	Gly	Thr	Val	Leu	Lys	Tyr
			805						810					815	
Ser	Asn	Pro	Lys	Gly	Leu	Ile	Tyr	Asp	Tyr	Tyr	Val	Gly	Lys	Lys	Met
		820						825					830		
Gly	Thr	Ile	Trp	Gly	Tyr	Thr	Thr	Asp	His	Ile	Met	Thr	Asp	Pro	Ala
		835					840					845			
Glu	Ala	Lys	Ala	Ile	Asn	Asp	Ser	Gly	Val	Gln	Asn	Lys	Phe	Gly	Gly
	850					855					860				
Asp	Trp	Val	Val	Gly	Asp	Ile	Lys	Tyr	Val	Asn	Leu	Asp	Asp	Asp	Pro
865					870					875					880
Asn	Ile	Asn	Asp	Gly	Asn	Gln	Thr	Leu	Glu	Asp	His	Gly	Asp	Leu	Ser
			885						890					895	
Ile	Ile	Gly	Asn	Asp	Thr	Pro	Arg	Tyr	Asn	Phe	Gly	Phe	Gly	Phe	Asn
		900						905					910		
Ala	Asp	Trp	Asn	Gly	Ile	Asp	Phe	Ser	Met	Phe	Leu	Gln	Gly	Thr	Met
	915					920						925			
Lys	Arg	Asp	Leu	Trp	Leu	Glu	Gly	Pro	Val	Ala	Phe	Gly	Leu	Gly	Gly
	930					935					940				
Gly	Gln	Trp	Gly	Ser	Asn	Val	Trp	Lys	Asn	Thr	Leu	Asp	Cys	Trp	Arg
945					950					955					960
Glu	Asp	Gly	Ser	Asn	Pro	Asp	Pro	Trp	Leu	Pro	Arg	Leu	Tyr	Leu	Trp

965 970 975
 Ser Thr Ser Lys Asn Leu Gln Lys Gln Thr Arg Tyr Met Asp Thr Gly
 980 985 990
 Ala Tyr Cys Arg Leu Lys Asn Ile Gln Leu Gly Tyr Ser Leu Pro Gly
 995 1000 1005
 Ala Ile Ile Asn Lys Val Gly Leu Glu Lys Val Arg Ile Tyr Phe Ser
 1010 1015 1020
 Gly Asp Asn Leu Leu Thr Phe Ser Gly Ile Asn Glu Asn Phe Asp Pro
 1025 1030 1035 1040
 Glu Ala Pro Trp Gly Gly Ala Tyr Pro Ile Ser Lys Ser Ile Ser Phe
 1045 1050 1055
 Gly Val Asn Val Thr Phe
 1060

<210> 10433

<211> 105

<212> PRT

<213> B.fragilis

<400> 10433

Arg His Pro Val Arg Pro His Ser Ile Leu Val Glu Lys Trp Glu Gly
 1 5 10 15
 Lys Cys Tyr Arg Leu Val Ile Gln Arg Arg Arg Asn Ser Gly Asp
 20 25 30
 Leu Asp Leu Trp Glu Gly Glu Tyr Thr Tyr Arg Cys Ile Leu Thr Asn
 35 40 45
 Asp Tyr Lys Ser Ser Thr Arg Asp Ile Ala Glu Phe Tyr Asn Leu Arg
 50 55 60
 Gly Gly Lys Glu Arg Ile Phe Asp Asp Met Asn Asn Gly Phe Ser Trp
 65 70 75 80
 Ser Arg Leu Pro Lys Ser Phe Met Ala Glu Asn Thr Val Phe Leu Leu
 85 90 95
 Leu Thr Ala Leu Tyr Thr Ile Tyr Tyr
 100 105

<210> 10434

<211> 246

<212> PRT

<213> B.fragilis

<400> 10434

Lys Met Lys Val Met Lys Asp Tyr Lys Leu Met Ala Val Gly Gln Ile
 1 5 10 15
 Val Ala Asp Cys Phe Asp Tyr Ala Lys Val Phe Asn Lys Tyr Gly Ile
 20 25 30
 Asp Phe Cys Cys Asn Gly Asp Val Ser Leu Ala Asp Ala Cys Gly Lys
 35 40 45
 Met Gly Ile Asp Ala Asp Cys Leu Leu Glu Glu Leu Lys Gln Ile Lys
 50 55 60
 Ser Glu Gln Ser Leu Thr Leu Asp Phe Lys Ser Trp Pro Ile Asp Leu
 65 70 75 80
 Leu Val Asp Tyr Ile Leu Lys Phe His His Arg Asn Ile Arg Tyr Gln
 85 90 95
 Gly Pro Gln Ile Leu Gln Leu Leu Asp Arg Val Cys Glu Ala His Ala
 100 105 110
 Arg Lys His Pro Glu Leu Tyr Glu Val Arg Glu Leu Phe Gln Glu Ser
 115 120 125
 Trp Ile Asp Leu Asn Asn His Leu Thr Lys Glu Glu Met Val Leu Phe
 130 135 140

Pro Tyr Ile Tyr Asp Leu Phe Asp Ala Val Ala Gln His Arg Pro Ile
 145 150 155 160
 Pro Ala Phe His Cys Gly Ser Val Ser Ser Pro Ile Ser Val Met Met
 165 170 175
 Ser Glu His Asp Ala Glu Gly Glu Arg Phe Arg Arg Ile Ser Gly Leu
 180 185 190
 Thr His Gly Tyr Leu Val Pro Gly Asp Ala Cys Ser Ser Tyr Arg Leu
 195 200 205
 Leu Leu Glu Met Leu Arg Thr Phe Glu Asp Asn Leu His His His Ile
 210 215 220
 His Leu Glu Asn Asn Ile Val Phe Pro Lys Ala Ile Glu Leu Gln Glu
 225 230 235 240
 Asn Cys Glu Arg Met Cys
 245

<210> 10435

<211> 67

<212> PRT

<213> B.fragilis

<400> 10435

Phe Glu Lys Asn Gly Leu Asn Leu Arg Leu Ser Tyr Asn Phe Ala Ser
 1 5 10 15
 Ala Phe Ile Asp Gly Met Gly Glu Asp Thr Phe His Asp Arg Tyr Tyr
 20 25 30
 Asp Arg Val Asn Tyr Leu Asp Val Asn Ala Ser Tyr Thr Phe Ala Lys
 35 40 45
 His Tyr Thr Leu Tyr Ala Glu Ser Asn Asn Leu Val Glu Thr Pro Leu
 50 55 60
 Arg Phe Tyr
 65

<210> 10436

<211> 815

<212> PRT

<213> B.fragilis

<400> 10436

Arg Leu Ser Val Met Gly Gly His Leu Tyr Ala Asp Glu Lys Ala Asn
 1 5 10 15
 Val Val Lys Gln Gly Thr Ile Arg Gly Arg Ile Ile Asp Thr Ser Lys
 20 25 30
 Gln Thr Leu Pro Gly Ala Ser Ile Tyr Ile Glu Asn Leu Lys Thr Gly
 35 40 45
 Val Ile Ser Asp Val Asn Gly Phe Tyr Thr Phe Ala Asn Leu Asn Pro
 50 55 60
 Gly Thr Tyr Thr Val Lys Val Thr Tyr Val Gly Tyr Ala Pro Val Glu
 65 70 75 80
 Met Lys Ile Thr Ile Pro Glu Gly Lys Thr Leu Glu Arg Asp Val Ile
 85 90 95
 Leu Asn Glu Gly Val Glu Leu Gln Glu Ile Val Ile Gly Gly Ala Phe
 100 105 110
 Gln Gly Gln Arg Arg Ala Ile Asn Ser Gln Lys Ser Ser Leu Gly Ile
 115 120 125
 Lys Asn Val Val Ser Ala Asp Gln Val Gly Lys Phe Pro Asp Ser Asn
 130 135 140
 Ile Gly Asp Ala Leu Lys Arg Ile Ser Gly Ile Asn Val Gln Tyr Asp
 145 150 155 160
 Gln Gly Glu Ala Arg Phe Gly Gln Val Arg Gly Thr Ser Ala Asp Leu

					165					170					175	
Ser	Ser	Val	Thr	Ile	Asn	Gly	Asn	Arg	Ile	Pro	Ser	Ala	Glu	Gly	Asp	
			180					185					190			
Thr	Arg	Asn	Val	Gln	Leu	Asp	Leu	Ile	Pro	Ala	Asp	Met	Ile	Gln	Thr	
			195				200					205				
Ile	Glu	Val	Ser	Lys	Val	Val	Thr	Ser	Asp	Met	Asp	Ala	Asp	Ala	Ile	
			210			215					220					
Gly	Gly	Ser	Ile	Asn	Leu	Val	Thr	Lys	Asn	Ser	Pro	Tyr	Lys	Arg	Thr	
225					230				235						240	
Leu	Thr	Ala	Thr	Ala	Gly	Ser	Gly	Tyr	Asn	Trp	Ile	Ser	Glu	Lys	Ala	
				245					250					255		
Gln	Leu	Asn	Leu	Gly	Leu	Thr	Tyr	Gly	Asp	Arg	Phe	Phe	Asn	Asp	Lys	
			260					265					270			
Leu	Gly	Val	Met	Leu	Ser	Ala	Ser	Tyr	Gln	Asn	Ala	Pro	Ser	Gly	Ser	
			275				280					285				
Tyr	Asp	Thr	Glu	Phe	Leu	Trp	Glu	Lys	Asp	Asp	Lys	Gly	Asn	Val	Tyr	
			290			295					300					
Ile	Asn	Asp	Tyr	Gln	Ile	Arg	Gln	Tyr	Tyr	Val	Thr	Arg	Glu	Arg	Gln	
305					310					315					320	
Ser	Tyr	Ser	Ala	Ala	Leu	Asp	Trp	Asp	Ile	Ser	Glu	Asn	His	Lys	Leu	
				325				330					335			
Met	Phe	Lys	Gly	Ile	Phe	Asn	Asn	Arg	Asn	Asp	Trp	Glu	Asn	Arg	Tyr	
			340					345					350			
Arg	Thr	Thr	Leu	Lys	Asp	Met	Asp	Glu	Glu	Gly	Lys	Ala	Thr	Val	Arg	
			355				360					365				
Val	Gln	Thr	Lys	Ala	Gly	Thr	Pro	Asp	Asn	Arg	Asn	Ala	Arg	Leu	Glu	
			370			375					380					
Arg	Gln	Arg	Thr	Met	Asp	Phe	Thr	Leu	Gly	Gly	Glu	His	Leu	Phe	Gly	
385					390					395					400	
Pro	Val	Ser	Met	Asp	Trp	Asn	Ala	Ser	Tyr	Ala	Lys	Ala	Thr	Glu	Glu	
				405				410					415			
Arg	Pro	Asn	Glu	Arg	Tyr	Ile	Asp	Phe	Gln	Leu	Lys	Lys	Gln	Gln	Phe	
			420				425					430				
Asp	Met	Asp	Leu	Ser	Asn	Glu	Arg	Glu	Pro	Leu	Ala	Thr	Pro	Lys	Ser	
			435			440					445					
Gly	Ser	Thr	Met	Thr	Leu	Asn	Lys	Asp	Phe	Gly	Leu	Lys	Glu	Leu	Thr	
			450			455				460						
Glu	Gln	Gln	Glu	Asp	Ile	Lys	Glu	Lys	Asp	Leu	Lys	Phe	Ser	Met	Asn	
465					470					475					480	
Phe	Lys	Leu	Pro	Phe	Arg	Asn	Gly	Asn	Lys	Leu	Lys	Phe	Gly	Ala	Lys	
				485				490					495			
Val	Val	Arg	Lys	Thr	Lys	Asp	Lys	Glu	Val	Asp	Phe	Tyr	Glu	Tyr	Thr	
			500		</											

Leu Leu Met Lys Trp Asn Val Asn Glu Asp Phe Lys Val Arg Gly Ser
 645 650 655
 Phe Thr Gln Thr Leu Ser Arg Pro Lys Tyr Ser Ala Leu Val Pro Ser
 660 665 670
 Val Asn Ile Lys Arg Ser Asp Asn Glu Val Thr Val Gly Asn Pro Gly
 675 680 685
 Leu Lys Pro Thr Leu Ser Tyr Asn Phe Asp Leu Ser Ala Asp Tyr Tyr
 690 695 700
 Phe Lys Ser Ile Gly Leu Val Ser Ala Gly Val Phe Tyr Lys Lys Ile
 705 710 715 720
 Asp Asp Phe Ile Val Asn Gln Val Ser Thr Asn Tyr Glu Tyr Asn Gly
 725 730 735
 Asn Leu Tyr Asn Arg Phe Ile Gln Pro Lys Asn Ala Gly Asn Ala Asn
 740 745 750
 Leu Ile Gly Met Glu Leu Ser Tyr Gln Arg Asp Phe Gly Phe Ile Ala
 755 760 765
 Pro Ala Leu Lys Cys Ile Gly Phe Tyr Gly Thr Tyr Thr Phe Thr His
 770 775 780
 Ser Arg Val Glu Asp Phe Asn Phe Glu Gly Arg Glu Asn Glu Lys Asp
 785 790 795 800
 Leu Ser Leu Pro Gly Ser Pro Lys His Thr Ala Asn Ala Ser Leu
 805 810 815

<210> 10437
 <211> 74
 <212> PRT
 <213> B.fragilis

<400> 10437
 Phe Leu Val Leu Met Glu Leu Gly Lys Tyr Pro Gly Arg Gly Val Lys
 1 5 10 15
 Ala Lys Arg Ile Lys Thr Val Glu Ile Asn His Leu Ile Asn Tyr Lys
 20 25 30
 Tyr Gly Lys Ser Lys Leu Val Gln Cys Lys Pro His Val Gly Gln Glu
 35 40 45
 Arg Trp Arg Phe Asp Asn Gln Cys Gly Cys Ser His Arg Thr Cys Ser
 50 55 60
 Thr Lys Tyr Ser Ser Tyr Arg Asn Ser Gly
 65 70

<210> 10438
 <211> 134
 <212> PRT
 <213> B.fragilis

<400> 10438
 Arg Leu Pro Leu Arg Lys Gly Arg Pro Cys Gln Val Lys Leu Arg Ser
 1 5 10 15
 Leu Lys Leu Leu Gln Pro Tyr Asp Leu Asp Lys Glu Gln Glu Leu Val
 20 25 30
 Pro Met Thr Pro Gln Gln Ala Thr Trp Lys Val Phe Thr Tyr Phe Asp
 35 40 45
 Arg Asp Met Glu Leu Arg Val Gln Glu Leu Arg Glu Gln Pro Gly Ile
 50 55 60
 Ile Arg Val Asp Val Val Ala Lys Glu Val Leu Thr Arg Pro Glu Glu
 65 70 75 80
 Gly Asp Phe Asp Met Tyr Pro Pro Pro Ser Leu Gln Asp Val Ala Asp
 85 90 95
 Arg Arg Lys Ile Met Tyr Thr Tyr Lys Gly Lys Leu Lys Tyr Arg Pro

Tyr Pro Pro Gly Leu Thr Gln Glu Glu Val Val Asn Tyr Arg Ala Gly
 100 105 110
 115 120 125
 Val Ile Ala Val Lys Ile
 130

<210> 10439

<211> 399

<212> PRT

<213> B.fragilis

<400> 10439

Val Arg Met Ser Phe Glu Ile Ile Arg Lys Thr Gly Glu Ile Ala Phe
 1 5 10 15
 Val Ala Asn Pro Ile Ala Phe Glu Val Lys Thr Ser Gly Glu Ala Glu
 20 25 30
 Ile Glu Ile Arg Leu Arg Val Gly Ala Gln Glu Val Phe Ser Ala Ser
 35 40 45
 Tyr Val Pro Phe Gly Asp Arg Ile His Phe Asp Ile Ala Glu Ile Leu
 50 55 60
 Gln Pro Phe Val Thr Ser Gly Pro Leu Glu Asp Ser Glu Asp Leu Ile
 65 70 75 80
 Leu Pro Val Ser Gly Phe Met Ala Gly Tyr Thr Leu Glu Val Lys Gly
 85 90 95
 Arg Glu Thr Arg Thr Leu Thr Gly Lys Val Ile Cys Gly Gly Ile Ser
 100 105 110
 Lys Gln Ala Ala Arg Glu Met Ala Gly Arg Gly Thr Asp Phe Ile Leu
 115 120 125
 Asn Arg Leu Arg Asp Tyr Ser Ser Gln Phe Leu Phe Thr Thr Arg Thr
 130 135 140
 Arg Gly Lys His Ile Ala Ile Arg Glu Thr Glu Val Ser Pro Leu Ile
 145 150 155 160
 Phe Ile His Pro Asp Lys Arg Ile Gln Val Glu Ser Glu Tyr Gly Asn
 165 170 175
 Arg Ile Lys Leu Pro Glu Gly Thr Ala Gly Glu Val Tyr Ala Leu Asn
 180 185 190
 Ile Gly Arg Ile Arg Arg Glu Phe His Arg Tyr Asn Gln Ile Val
 195 200 205
 Ser Phe Ile Arg Val Leu Val Pro Ala Glu Glu Ala Phe Asp Ile Ser
 210 215 220
 Phe Thr Pro Gly Glu Val Ser Glu Asn Gly Leu Ser Phe Leu Phe Arg
 225 230 235 240
 Asn Ser Leu Gly Cys Tyr Glu Val Ile Glu Met Pro Gly Lys Met Ile
 245 250 255
 Tyr Ser Leu Asp Arg Gly Asp Asp Glu Asn Tyr Arg Thr Phe Asp Glu
 260 265 270
 Glu Gly Gly Asp Tyr Ile Thr Gly Arg Pro Arg Pro Asp Leu Leu Gln
 275 280 285
 Lys Met Lys Leu Asn Thr Gly Phe Lys Arg Lys Thr Glu Leu Lys Phe
 290 295 300
 Ile Gln Asp Leu Leu Ser Ser Asp Asp Ile Arg Leu Leu Asn Gly Thr
 305 310 315 320
 Ala Arg Arg Arg Val Leu Val Thr Cys Glu Glu Tyr Gly Tyr Glu Glu
 325 330 335
 Pro Met Lys Glu Pro Thr Ser Leu Val Leu Asp Ile Glu Val Ala Glu
 340 345 350
 Arg Glu Ser Asn Tyr Thr Pro Asp Met Asp Gly Glu Asn Ala Pro Pro
 355 360 365
 Phe Ile Glu Leu Leu Pro Gly Glu Val Glu Ile Pro Ser Glu Gly Gly

10439 399 PRT B.fragilis
 1 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150 155 160 165 170 175 180 185 190 195 200 205 210 215 220 225 230 235 240 245 250 255 260 265 270 275 280 285 290 295 300 305 310 315 320 325 330 335 340 345 350 355 360 365

370 375 380
 Gln Val Arg Val Arg Val Glu Ser Asn Ile Met Trp Glu Val Val
 385 390 395

<210> 10440
 <211> 144
 <212> PRT
 <213> B.fragilis

<400> 10440
 Ile Thr Ser Met Ala Lys Ala Ser Trp Cys Asn Val Ser Pro Met Ser
 1 5 10 15
 Gly Lys Arg Asp Gly Val Leu Thr Ile Ser Ala Gly Ala His Thr Gly
 20 25 30
 Arg Val Ala Arg Asn Thr Val Val Thr Val Thr Ala Ala Asn Gly Thr
 35 40 45
 Arg Pro Ser Ala Ser Ile Ala Val Ser Gln Ala Gly Ala Gly Val Phe
 50 55 60
 Pro Thr Met Asp Thr Ser Lys Pro Asp Leu Ser Ser Ser Arg Gly Val
 65 70 75 80
 Val Asn Ile Asn Gly Thr Ser Asn Ile Ser Lys Leu Lys Trp Thr Cys
 85 90 95
 Pro Ala Arg Ile Met Gly Val Asp Met Pro Ile Asp Gly Asn Tyr Phe
 100 105 110
 Lys Asn Gly Gly Lys Thr Val Gly Ile Leu Gly Asn Asn Gly Gly Tyr
 115 120 125
 Ser Gly Glu Pro Arg Thr Leu Gly Pro Phe Lys Leu Cys Trp Arg Leu
 130 135 140

<210> 10441
 <211> 253
 <212> PRT
 <213> B.fragilis

<400> 10441
 Ile Ile Phe Ala Val Arg Tyr Met Glu Gly Glu Ala Gly Asn Asn Asn
 1 5 10 15
 Asn Leu Phe Thr Tyr Ala Met Ala Thr Gly Ser Thr Lys Asp Asn Tyr
 20 25 30
 Leu Ala Asn Gly Glu Lys Phe Leu Asp Ala Leu Asn Ile Ala Asn Thr
 35 40 45
 Gly Ser Gln Gln Leu Glu Tyr Lys His Glu Ile Tyr Asn Ser Phe Asp
 50 55 60
 Val Ala Asp Thr Arg Arg Glu Ala Thr Phe Ile Ala Ser Tyr Ser Lys
 65 70 75 80
 Asn Thr Glu Thr Lys Glu Leu Thr Leu Arg Gly Thr His Val Arg Lys
 85 90 95
 Asn Ile Gly Tyr Val Asn Ala Gln Gly Ser Arg Ile Tyr Cys Gly Asp
 100 105 110
 Tyr Ile Ile Tyr Arg Leu Pro Leu Val Tyr Leu Met Leu Ala Glu Ile
 115 120 125
 Glu Asn Met Gln Gly Gly Asp Val Ala Lys Tyr Ile Asn Leu Val Arg
 130 135 140
 Glu Arg Ala Tyr Ser Thr Asn Trp Asp Lys Ala Ile Tyr Gly Tyr Thr
 145 150 155 160
 Asn Ala Asp Phe Thr Thr Asn Glu Leu Ala Ile Leu His Glu Lys Asp
 165 170 175
 Lys Glu Phe Ile Gln Glu Gly Gln Arg Trp Trp Asp Ile Arg Arg Met
 180 185 190

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Thr Leu Thr Lys Gly Gly Lys His Leu Val Phe Val Lys Glu Gly Ser
    195                      200                205
Ile Gly Thr Asp Met Pro Thr Leu Asp Glu Ala Thr Glu Ala His Lys
    210                      215                220
Val Leu Trp Pro Val Asp Lys Asp Leu Leu Gly Asn Asp Pro Leu Ile
    225                      230                235                240
Tyr Gln Thr Pro Gly Tyr Ala Thr Tyr Lys Lys Ala Glu
                245                      250

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<210> 10442

<211> 360

<212> PRT

<213> B.fragilis

<220>

<221> UNSURE

<222> (308), (347)

<223> Identity of amino acid sequences at the above locations are unknown.

<400> 10442

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Lys Ala Ile Leu Met Lys Lys Thr Ile Phe Leu Ile Leu Cys Ile Leu
1      5      10      15
Cys Ser Leu Gly Ala Met Ala Gln Lys Lys Ser Ile Thr Gly Val Ile
    20      25      30
Thr Asp Gly Ala Gly Glu Ser Ile Ile Gly Ala Ser Val Val Glu Val
    35      40      45
Gly Thr Thr Asn Gly Thr Ile Thr Asp Phe Asp Gly Lys Phe Ser Leu
    50      55      60
Thr Ile Ala Thr Gly Ala Lys Phe Thr Val Ser Tyr Ile Gly Tyr Lys
    65      70      75      80
Ser Gln Thr Ile Thr Val Gly Ala Glu Asn Thr Tyr Asn Ile Val Leu
    85      90      95
Lys Glu Asp Thr Glu Val Leu Asp Glu Val Val Ile Thr Gly Tyr Gly
    100     105     110
Gly Ser Gln Lys Arg Ala Thr Leu Thr Thr Ala Ile Ser Lys Leu Asp
    115     120     125
Asn Ser Val Leu Lys Asn Ala Ala Phe Ser Asn Ala Gly Gln Ser Leu
    130     135     140
Gln Gly Ser Val Thr Gly Leu Arg Val Val Asn Lys Thr Gly Gln Pro
    145     150     155     160
Gly Ser Glu Pro Asp Ile Thr Leu Arg Gly Gly Ala Thr Ile Thr Gly
    165     170     175
Asp Asn Ser Lys Ala Leu Ile Val Val Asp Gly Ile Val Arg Asn Ser
    180     185     190
Met Ser Asp Ile Asn Pro Ser Asp Ile Glu Ser Ile Gln Val Leu Lys
    195     200     205
Asp Ala Ala Ser Thr Ala Ile Tyr Gly Ala Arg Ala Asn Gly Gly Val
    210     215     220
Ile Leu Val Glu Thr Lys Ser Gly Lys Glu Gly Lys Ala Ser Val Asn
    225     230     235     240
Tyr Lys Phe Lys Met Gly Val Asn Phe Ala Arg Lys Gly Tyr Asp Phe
    245     250     255
Cys Asp Ala His Asp Tyr Ile Tyr Tyr Asn Arg Leu Gly Tyr Lys Arg
    260     265     270
Thr Gly Arg Thr Asn Val Asp Thr Gln Met Gly Tyr Gly Ile Gly Asn
    275     280     285
Asn Leu Phe Asp Ile Arg Tyr Leu Thr Asp Glu Asn Ala Asn Leu Lys
    290     295     300
Asn Glu Gly Xaa Ala Ser Met Ala Asp Pro Phe Tyr Asp Gly Lys Thr

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305		310		315		320									
Ile	Leu	Tyr	Lys	Asp	Tyr	Ser	Gly	Glu	Leu	Asp	Asp	Val	Val	Phe	Asn
			325						330					335	
Asn	Ser	Ala	Leu	Thr	Gln	Asp	His	Tyr	Val	Xaa	Ile	Thr	Gly	Gly	Asn
			340						345					350	
Asp	Lys	Arg	Thr	Phe	Leu	Pro	Ala								
		355					360								

<210> 10443
 <211> 71
 <212> PRT
 <213> B.fragilis

<400> 10443
Ala Lys Asn Gly Glu Lys Arg Lys Phe Cys Glu Tyr Phe Gln Thr Ser
1 5 10 15
Lys Asn Gln Ala Phe Ile Leu Phe Leu Val Leu Val Phe Ser Leu His
20 25 30
Lys Gly Leu Lys Met Asn Leu Leu Glu Gly Asp Lys Ser Ser Ile Lys
35 40 45
Ile Arg Leu Ile His Leu Leu Lys Asn Glu Leu Met Ile Phe Phe Gln
50 55 60
Asn Pro Thr Glu Val Arg Cys
65 70

<210> 10444
 <211> 752
 <212> PRT
 <213> B.fragilis

<400> 10444
Ile Pro Pro Gly Ala Asp Ile Ser Pro Leu Val Tyr Pro Phe Pro Thr
1 5 10 15
Phe Leu Arg Gly Arg Gly Gly Ile Leu Thr Gln Ile Phe Ser Leu Thr
20 25 30
Leu Gly Ala Leu Val Gly Ile Leu Leu Phe Ala Arg Val Ala Phe Ala
35 40 45
Leu Asn Tyr Asp Arg Tyr Tyr Gln Glu Pro Glu Asn Leu Phe Leu Thr
50 55 60
Leu Arg Thr Val Val Ser Gln Gly Glu Lys Lys Glu Pro Val Cys Ser
65 70 75 80
Asn Tyr Gly Lys Leu Pro Ala Ala Ile Arg Glu Asn Phe Pro Asp Glu
85 90 95
Val Glu Asp Ala Thr Leu Ile Asp Leu Phe Ser Arg Ser Ser Leu Tyr
100 105 110
His Glu Gly Gln Glu Lys Lys Asp Ala Ile Leu Ala Thr Ser Arg Ser
115 120 125
His Ile Phe Ser Thr Leu Gly Val Lys Val Leu Ser Gly Asn Val Ser
130 135 140
Glu Leu Asp Asn Met Asp Ala Leu Phe Ile Ser Arg Ser Leu Ala Gln
145 150 155 160
Ser Leu Phe Ala Asp Ala Asp Pro Ile Gly Lys Thr Val Met Ile Asn
165 170 175
Ile Asp Tyr Pro Leu Thr Val Arg Gly Val Phe Glu Asp Ile Pro Glu
180 185 190
Asn Ala Glu Phe Arg Phe Asp Gly Val Tyr Ser Phe Val Thr Arg Ala
195 200 205
Asn Arg Phe Arg Asp Glu Arg Gly Gly Trp Arg Gly Asp Ile Ser Tyr
210 215 220

Thr Cys Met Val Arg Phe Arg His Pro Glu Asp Val Glu Lys Val Ala
 225 230 235 240
 Ala Arg Met Pro Asp Met Met Lys Lys Tyr Ile Gln Tyr Asn Lys Asp
 245 250 255
 Trp Phe Glu Glu Phe Ser Phe Ile Thr Pro Ser Gln Phe His Leu Gln
 260 265 270
 Lys Lys Glu Ser Arg Lys Ile Ile Ser Ile Leu Ser Ile Leu Gly Phe
 275 280 285
 Ala Ile Leu Leu Ile Ala Gly Met Asn Asn Val Leu Ile Ser Ile Ser
 290 295 300
 Ser Leu Pro Gln Arg Ala Lys Ser Val Gly Val His Lys Cys Ser Gly
 305 310 315 320
 Ala Ser Thr Gly His Ile Tyr Arg Met Phe Leu Trp Glu Ser Ala Leu
 325 330 335
 Leu Ile Leu Val Ser Leu Leu Gly Val Ile Val Leu Leu Leu Tyr Phe
 340 345 350
 Lys Pro Glu Ile Glu Asp Leu Ser Gly Ala Ser Leu Ala Thr Leu Phe
 355 360 365
 Thr Trp Arg Thr Leu Trp Val Pro Ala Leu Val Thr Ile Phe Leu Phe
 370 375 380
 Leu Leu Ile Gly Leu Leu Pro Gly Lys Leu Phe Ser Ser Ile Pro Val
 385 390 395 400
 Thr Gln Val Phe His Arg Phe Thr Gly Tyr Arg Ala Ser Trp Lys Tyr
 405 410 415
 Pro Leu Leu Phe Val Gln Phe Thr Gly Val Ala Phe Ile Leu Gly Leu
 420 425 430
 Leu Met Ile Ile Leu Leu Gln Tyr Asn Gln Val Met Asn Arg Ser Met
 435 440 445
 Gly Tyr Lys Ile Asp Asn Leu Val Ile Gly Trp Gly Pro Phe Asp Ser
 450 455 460
 Met Asp Lys Ile Asp Gly Ile Leu Arg Gly Leu Pro Phe Ile Glu Ala
 465 470 475 480
 Ser Cys Asn Ser Ala Ser Phe Ile Tyr Asn Gly His Thr Arg Gln Ser
 485 490 495
 Phe Thr Asp Ile Asn Gly Lys Arg Phe Met Gly Cys Ile Asp Phe Ile
 500 505 510
 Asp Glu His Tyr Val Pro Ile Leu Gly Leu Gln Ile Leu Gln Gly Arg
 515 520 525
 Asn Val His Gln Asp Gly Glu Val Leu Val Asn Glu Glu Leu Leu Arg
 530 535 540
 Gln Val Gly Trp Thr Asp Ser Pro Ile Gly Arg Lys Leu Met Glu Asp
 545 550 555 560
 Asn Tyr Glu Trp Gly Thr Val Val Gly Val Val Lys Asp Tyr Val Ala
 565 570 575
 Gln Ser Ala Tyr Gln Pro Gln Thr Ser Val Ala Leu Val Ser Ser Leu
 580 585 590
 Glu Arg Arg Trp Glu Ala Asn Lys Arg Asn Leu Ile Leu Lys Glu Pro
 595 600 605
 Phe Lys Glu Asn Leu Ser Lys Ile Arg Ala Leu Met Lys Glu Thr Phe
 610 615 620
 Pro Thr Glu Asp Ile Gln Phe Arg Ser Ala Arg Gln Glu Val Asp Asn
 625 630 635 640
 Leu Tyr Gln Val Val Arg Arg Phe Arg Asn Ile Val Ile Val Ala Ser
 645 650 655
 Val Ser Ile Val Val Ile Val Leu Met Gly Leu Phe Gly Phe Val Asn
 660 665 670
 Asp Glu Val Gln Arg Arg Ser Lys Glu Ile Ala Ile Arg Lys Val Asn
 675 680 685
 Gly Ala Glu Ser Gly Asn Ile Ile Asn Leu Leu Asn His Asn Ile Phe

690						695						700					
Trp	Ile	Ala	Leu	Pro	Ala	Ile	Phe	Val	Gly	Ile	Ala	Leu	Ala	Tyr	Val		
705					710					715					720		
Val	Gly	His	Lys	Trp	Val	Glu	Gln	Phe	Thr	Asp	Gln	Ile	Val	Leu	Ser		
				725					730					735			
Ser	Pro	Arg	Asp	Val	Ser	Asp	Gln	Gly	Gly	Gln	Tyr	His	Gly	Gly	Gln		
			740					745					750				